

2016 ARPEL Annual Report

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INSTITUTIONAL

Table of contents

Governance and Membership

3

Letter of the Chairman
of the Board of Directors

5

Executive Summary

6

Reciprocal Assistance and
Innovation / Operational and
Management Excellence

8

Climate Change / Resilience

27

Energy Integration / Expansion
of Markets and Energy Security

30

Technical Advocacy /
Regulations Enabling
Investments

32

Sustainability Reports and
Communication / Transparency
and Reputation

34

Spaces for Dialogue /
Networking and New Business

36

Representation before other
related Organizations in
the Sector / Articulator of
Stakeholders

38

Delegates in Technical
Committees and Working
Groups

43

Governance

Board of Directors

Chairman

Carlos Colo (YPF)

Vice Chairmen

Benito Piñeiro (ANCAP)

Roberto Díaz (PLUSPETROL)

Members

João Araújo Figueira (PETROBRAS)

Alfredo Coronel (PETROPERU)

Sara Salazar (RECOPE)

María Isabel de Luis (REPSOL)

Verónica Rollandi (SPECTRUM)

Kyle Chapman (WEATHERFORD)

Alfonso Jiménez (EP PETROECUADOR)

Fiscal Commission

Chairman

Ariel Azar (ENAP)

Members

Bob Fryklund (IHS-MARKIT)

Carlos Sarmiento (SCHLUMBERGER)



Membership

Active Members

ANCAP
AXION ENERGY
CENIT
CHEVRON
COGA
CUPET
ECOPETROL
ENAP
EP PETROECUADOR
EQUION ENERGÍA
OCENSA
OLDELVAL
PCJ
PDVSA
PEMEX
PETROAMAZONAS EP
PETROBRAS
PETROPAR
PETROPERU
PETROTRIN
PLUSPETROL
RECOPE
REPSOL
STAATSOLIE
TECPETROL
YPF
YPFB

Cooperative Members

IHS-MARKIT
PSRG
SCHLUMBERGER
SPECTRUM
WEATHERFORD
TEMA

Institutional Members

ACEPH
Association of Oil Exploration and Production Companies
AIHE
Oil Industry Association of Ecuador
AIPN
Association of International Petroleum Negotiators
BARILOCHE FOUNDATION
CBHE
Bolivian Chamber of Hydrocarbons and Energy
CCI
Industrial Cybersecurity Center
CCPS
Center for Chemical Process Safety
CIER
Regional Energy Integration Commission
COCATRAM
Central American Commission of Maritime Transportation
ENERCLUB
Spanish Club of Energy
IAPG
Argentinean Oil and Gas Institute
IBP
Brazilian Institute of Petroleum, Natural Gas and Biofuels
IOGP
International Association of Oil & Gas Producers
IPIECA
International Petroleum Industry Environmental Conservation Association
OSRL
Oil Spill Response Limited
RAC/REMPEITC-Caribe
The Regional Marine Pollution Emergency Information and Training Center for the Wider Caribbean
SIGTTO
Society of International Gas Tanker and Terminal Operators
SPH
Peruvian Hydrocarbons Society
SLOM
Latin-American Society of Monobuoy Operators
WPC
World Petroleum Council
WEC
World Energy Council



Letter of the Chairman of the Board of Directors

As Chairman of the Board of Directors I would like to celebrate the achievements made during 2016 and express my gratitude for the dedication of all the professionals of the ARPEL community whose commitment and work further the steady progress of our industry.

This has been another year of transformation and growth, in which, in addition to ratifying our traditional lines of work in operational excellence and mutual assistance, we have expanded our scope of action through the successful implementation of our 2015-2019 Strategic Plan. We have placed emphasis on innovation, climate change, integration, business development, regulation, transparency, reputation, and on the expansion and articulation of our broad institutional network.

In this regard and in order to continue to add value to our member companies and industry, we have focused our efforts on working on emerging issues, such as industrial cybersecurity, the development of unconventional hydrocarbon reserves or an issue of great relevance in the new energy context as are the meetings with the major players in research and development in the region that form the basis of the competitiveness of the industry.

“New Energy Reality” was the theme chosen for the new edition of the ARPEL Oil and Gas Regional Conference 2017, which will bring together the top executives and government officials from Latin America and the Caribbean to discuss the future of our industry and its insertion in a new energy and socio-environmental paradigm. As in previous years, this new Conference will be an icon for the region.

Finally, we invite you to review the achievements and progress made in 2016, and expect another year of growth in 2017 based on cooperation and mutual assistance, our founding values, which are still current in the new energy context as they were in the early days of the Association.

Carlos Colo
Chairman of the Board of Directors

Farewell to our colleague Susana Muñiz, who is retiring after 41 years in ARPEL

The Executive Secretariat would like to thank our colleague Susana for her full dedication and commitment during 41 years in ARPEL.

Susana has witnessed the great changes in the industry during the past four decades, and we recognize that thanks to the hard work, support and efforts of people like her, ARPEL has grown in the development of its activities.

We will miss her warmth and good-fellowship. Dear Susana: Our best wishes for this new stage in your life!



Executive Summary

NEW BOARD OF DIRECTORS AND FISCAL COMMISSION

The new authorities were elected during the 2016 Annual Assembly of Representatives held on March 10 in Bogotá, Colombia.

Mr. Carlos Colo, Executive Manager of Exploration and Development of YPF, was chosen to serve as Chairman of the Board of Directors of the Association for the period 2016-2017. Mr. Colo is a geologist with more than 30 years of experience in exploration and production. He has been in charge of the exploration of Vaca Muerta. He previously served in YPF as Director of E&P Technical Directorate, Director of Las Heras Economic Unit, and General Manager in Colombia.

The Representatives elected ANCAP -after chairing the Board- and re-elected Pluspetrol to first and second Vice-Chairs, respectively. These positions are held by Benito Piñeiro and Roberto Díaz.

The Board of Directors is also made up of other seven member companies: EP-Petroecuador, Petrobras, Repsol, Petroperú, Recope, Spectrum and Weatherford.

In addition, a decision was made also on the composition of the Fiscal Commission for the period 2016-2018. It will be made up of the following representatives: ENAP, acting as Chair, Schlumberger and IHS-Markit.

MEMBERSHIP

Affiliations:
PSRG and CUPET.

PUBLICATIONS

Twenty new technical publications, six guidelines and manuals on best practices, four executive technical reports, four benchmarking reports/manuals, four sectoral studies, one white paper and one statistical database were released.

NEW COOPERATION AGREEMENTS

- SIGTTO (Society of International Gas Tanker and Terminal Operators)
- Bariloche Foundation
- CCPS (Center for Chemical Process Safety)
- SPH (Peruvian Hydrocarbons Society)

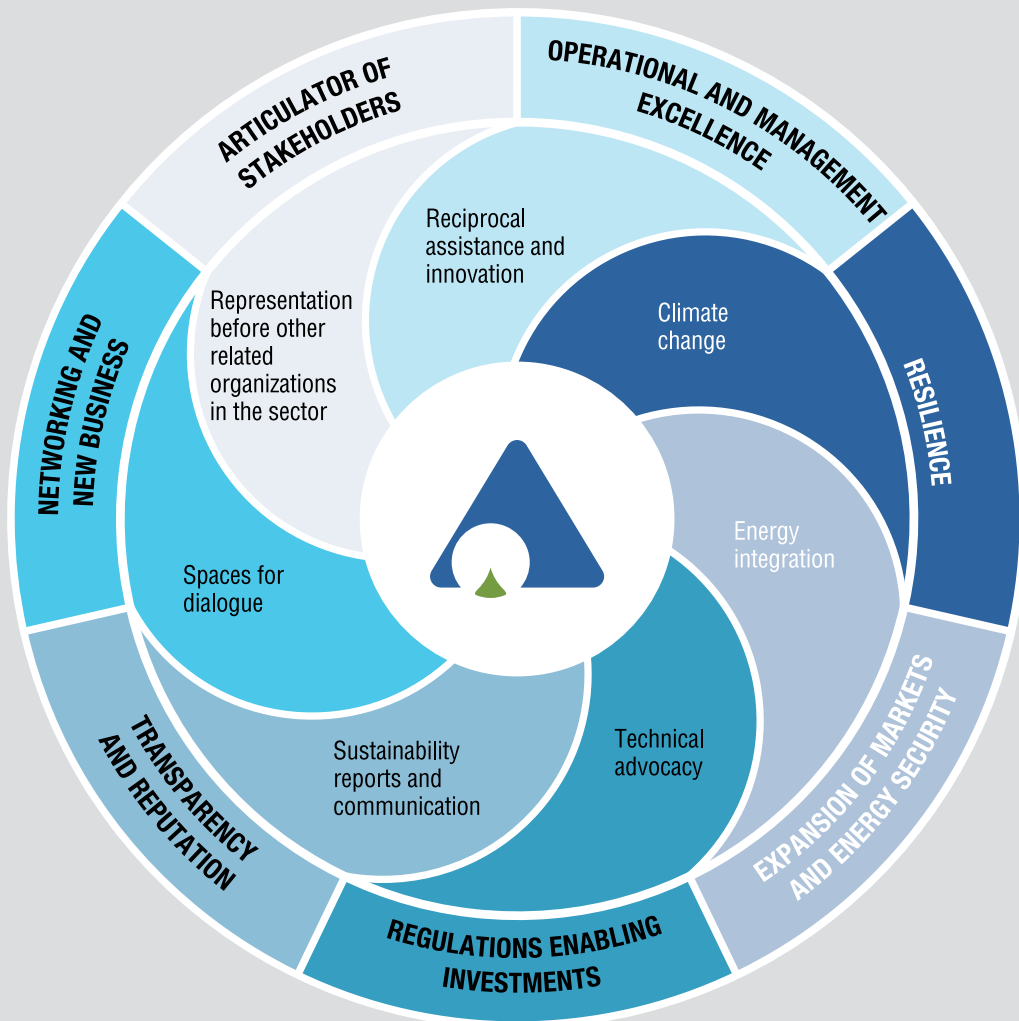
EVENTS

- 87th Meeting of Experts (RANE) on Process Safety – Colombia, March 9-10
- Best Practices in Energy Management – Argentina, September 21-23
- In Line Inspection (ILI) of Pipelines – Mexico, October 5-6
- Best Practices in FCC Units – Chile, October 5-7
- Cybersecurity in Critical Infrastructures in a Technologically Dependent and Interconnected World – Argentina, October 18-19
- 88th Meeting of Experts (RANE) on Reservoir Management – Peru, November 9-10
- How to Operate in Scenarios of Low Prices – Peru, November 11

COURSES

- New editions of courses on Oil Spill Prevention and Response, and on Pipeline Integrity Management were given both in person and in-company during the year.
- In addition, an online course on Business and Human Rights was developed and given for the first time.
- It included participants from Argentina, Bolivia, Colombia, Costa Rica, Ecuador, Mexico, Paraguay and Peru.

STRATEGIC GUIDELINES FOR SUSTAINABLE ENERGY DEVELOPMENT





Reciprocal Assistance and Innovation

Operational and
Management Excellence



Exploration and Production Committee

The Exploration and Production Committee continued with its line of work in reservoir management and process safety through the organization of technical congresses called Meetings of Experts (RANEs), which allow placing professionals in the frontier of knowledge of the topics addressed. In addition, activities were carried out to share the way in which companies have improved their efficiency to remain competitive in the new global energy scenario.

87th RANE Process Safety in E&P Operations

This event held on March 9-10 in Bogotá was organized based on the need to address safety of offshore operations, leadership development and culture, impact of operations and relations with the community. The event attracted the attention of more than 100 executives and specialists from 11 countries of the region.



88th RANE Reservoir Management

The congress was held on November 9-10 in Lima, with the support of Petroperú and the Peruvian Society of Hydrocarbons (SPH, under its acronym in Spanish). It brought together professionals, technicians and academic researchers specialized in the area, who exchanged experiences, presented case studies and analyzed the latest technologies with regard to integrated reservoir management.



The change in the price scenario forced companies to drastically change their management, with the improvement of efficiency becoming a crucial point to maintain competitiveness. In this regard, the extension of the useful life of the reservoirs and the optimization of productivity throughout the life cycle are key to the efficiency of a company, and hence the importance and relevance of the event. This is one of the lines of work of the Committee, and another RANE on this subject has already been announced for 2018.



Associated with the RANE on Reservoir Management, the Workshop **How to Remain Profitable in an Environment of Low Oil Prices?** was held on November 11. This event was an opportunity for exchange among professionals from almost 20 companies who shared the different alternatives and paths followed by the companies to maintain their levels of profitability in the new energy scenario.





Fostering innovation

On the occasion of the opening of the facilities of Y-TEC in Berisso, Province of Buenos Aires, on September 29, the **Regional Meeting of R&D Centers** was held. As innovation is the key pillar of competitiveness and business development in the long term, and also one of the strategic lines of work of the Association, this event was called and organized in collaboration with Y-TEC, with high-level international and regional speakers sharing strategies and tools for the development and application of new knowledge. The conclusions of the meeting were useful for the preparation of one of ARPEL key projects for 2017: the implementation of a technological collaboration platform gathering the demand and supply of technology for the oil and gas industry in Latin America and the Caribbean. The conclusions of this event are available on our website in the report entitled **Technological Cooperation as a Pillar of the Development of the Oil and Gas Industry in Latin America and the Caribbean**.







Pipelines and Terminals Committee

The Pipelines and Terminals Committee continued its work on infrastructure integrity with a focus on the monitoring and inspection of geohazards, best practices for pipeline inspections, the optimization of the operation of terminals and the development of a shared database on statistics about failure in pipelines and rights of way.



Guideline on “Monitoring and inspection in pipeline integrity management against geothreats”

The document was published in August and summarizes more than one year of hard work of the regional project team designated for such purpose. It documents the best practices and lessons learned in the monitoring and inspection of pipelines, rights of way and triggering agents of land instability processes that may threaten pipeline integrity. Geohazards are the main cause of breakage of pipelines in our region, and this work is a great contribution to raise the standards of pipeline management and reduce the number of incidents. The management of geohazards is one of the lines of work of the Committee, so the group is still active and devoted to the development of a second version of the guidelines on the subject, to the dissemination of the first document and to the organization of meetings and exchange of experiences.

Workshop “In-Line Inspection (ILI) data analysis for pipelines”

The event was held on October 5-6 in Mexico City under the sponsorship of PEMEX. The purpose of the workshop was to share experiences and good practices regarding the maintenance of pipeline infrastructure through the management of in-line inspections. Among the main topics covered were the regulations, the need to establish a process and a multidisciplinary team to manage adequately the inspection and maintenance, inspection through PIGs, the alternatives in case pigging is not possible, the management of specific threats, such as stress corrosion cracking or illegal taps, as well as specific experiences of companies from Mexico, Colombia, Brazil, Bolivia, Chile, Ecuador, Peru and Argentina.



Database of failures in pipelines

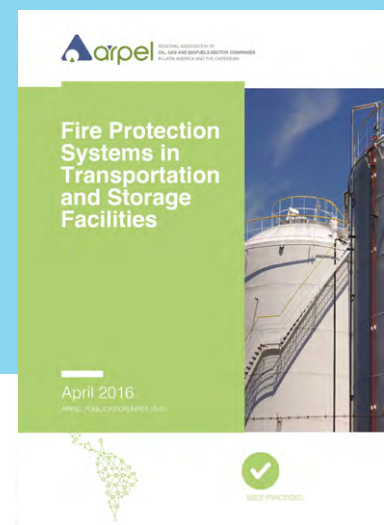
Sharing the experience gained by member companies in an increasingly open and interconnected world is key to accelerate the learning curve and optimize the management of the integrity of the assets, in addition to providing a significant reduction in costs. In this regard, the Committee decided to set up this database in order to reduce the number and impact of incidents in pipelines in a cooperative manner.

Cross-checks

The traditional cross-checks were carried out during the year. These activities consist in a technical visit and a critical analysis of an oil terminal operated by a company, by a group of professionals of another company, based on ARPEL Reference Manual for Terminals Operation Management. The two companies that led the checks were Pluspetrol, which offered its terminal in Pisco, and Petropar, which opened the doors of its terminal in Villa Elisa. The results of both checks are summarized in a document and enable the identification of gaps and pave the way for the development of plans for improvement.

Guideline on “Fire Protection Systems in Transportation and Storage Facilities”

This document, published in April, is a technical point of reference with a didactic approach, accredited by a group of experts from the region, for the administration, implementation, optimization and maintenance of fire protection systems in facilities for onshore transportation of oil, considering economic and technical standards and best practices in the industry. The working team is dedicated to providing training on the implementation of best practices, and to the development of checklists to facilitate their use.





Committee on Health, Safety and Environment

The Committee on Health, Safety and Environment continued with its line of work in performance benchmarking, with the support of its Occupational Health Working Group and with the dissemination of good practices for oil spill response prevention and planning.

BENCHMARKING

In order to continue supporting the improvement in the management and performance of the oil and gas industry in Latin America and the Caribbean in the field of environment, health and safety, statistical manuals were updated during 2016, incorporating new indicators, and new editions of the annual performance reports were issued.

The main developments in this regard were that in 2016 we began the compilation of indicators of emissions of greenhouse gases, and progress was also made in the criteria to report on process safety indicators.

Reports published in 2016:

- Environmental Benchmarking Manual, 2015 data
- Safety Benchmarking Report, 2015 data



OCCUPATIONAL HEALTH

Psychosocial Risks



The Guideline for Addressing the Evaluation of Psychosocial Risk Factors in the Workplace was published in response to the need for our companies to incorporate knowledge and tools for the evaluation of psychosocial risk factors, an emerging issue in the oil and gas industry in Latin America and the Caribbean, and in the labor legislation. This guideline establish criteria and recommendations for early detection and management of potential damage to which the worker is exposed due to psychosocial risk factors. This document was developed under the leadership of Ecopetrol, one of the most advanced companies in this field, and complements the work of the Health Working Team, which in 2014 had already published other guidelines with the purpose of facilitating the monitoring of psychosocial risk factors. Work on the implementation of this guideline in member companies will begin in 2017.

Vector-borne diseases

On the basis of the outbreaks of contagious diseases occurring in the past few years, and in particular those transmitted by vectors such as zika, dengue, chikungunya, malaria and Chagas' disease, with a high prevalence in the region, the Health Team worked on this issue and performed the translation into Spanish and Portuguese of the document "Vector-borne disease management programmes, a guide for the oil and gas industry", developed by IPIECA and IOGP in 2012. The document provides a set of criteria to establish the prevention of this type of diseases, and it is a contribution to the industry in the region and the community.

OIL SPILL PREVENTION AND RESPONSE

Update and translation into French and Portuguese of the Manual and RETOS Tool

The Oil Spill Response Planning and Readiness Assessment Manual and its Assessment Tool RETOS, developed in 2011 and updated in 2014 and 2016, have become an international reference on this subject, and are currently used by companies and governments in the five continents. In turn, to facilitate the international scope of the tool and its use in different regions of the globe, this year the manual and its Excel tool were translated into French (with funds from the International Oil Spill Conference) and Portuguese.



Dissemination of the RETOS Tool

During 2016, in addition to the training courses conducted, this tool was presented at the **3rd Latin American Congress and 5th National Congress on Occupational Health, Safety and Environment Congress in the Hydrocarbons Industry** (Argentina, IAPG), at the **Symposium on Oil Spills** (Petroleum Association of Japan) and the **Association collaborated in organizing the Regional Workshop on Oil Spill Contingency Planning** (Bahamas, IMO). This last event served to train delegates from governments of 12 countries and assess the national contingency plans of each of these countries. On the other hand, a course on the tool RETOS has been confirmed as a side event to the International Oil Spill Conference in 2017.



Human Talent and Knowledge Management Committee

The Human Talent and Knowledge Management Committee works on the exchange and on the fomentation of best practices and experiences that promote the development of human, intellectual and organizational capital of the industry in the region, this being one of the most relevant topics for the sector at present.

Benchmarking Report on “Knowledge Management”

The report consisted in a survey conducted to referents in human talent in member companies, and aimed to identify how to work on issues related to knowledge management and innovation, how they are inserted in the corporate culture, how tacit and explicit knowledge is managed, as well as to identify common practices, best practices and gaps to improve and to establish a network of knowledge that may lead to strengthen the management of this issue in the oil and gas industry.

Benchmarking Report on “Human Talent Management”

With the same spirit of the Benchmarking Report on Knowledge Management, a Benchmarking Report on Human Talent Management was developed aimed to provide relevant information on how oil and gas companies in the region are managing different aspects of HR management. The questions were addressed to the current context, the evolving needs of talent, attraction and recruitment techniques, communication and participation, training and knowledge management, background, retention and long-term commitment, diversity management, working conditions and compensation plans and recognition.

Webinar “Best Practices/Lessons Learned in Cost-Reduction Programs”

The webinar “Best Practices/Lessons Learned in Cost-Reduction Programs” was held on November 29. The sharp decline in oil prices caused by imbalances in the global offer had a great impact on the market that led oil & gas companies to quickly adjust their operating models. This made the leaders focus on solving the business requirements through different strategies to reduce cost and improve efficiency. The webinar sought to address these strategies, what their impact on the management of companies has been, and how the future is envisioned. It was presented by professionals from Repsol, Ecopetrol and YPF who have led these processes.



E-Learning

In order to put the potential of new information technologies and communications at the disposal of the training required by the sector, an instructional design was developed according to the educational trends, new learning needs and quality parameters of the Association. ARPEL VIRTUAL seeks to position itself in the

LAC and global training context because of the relevance and quality of its proposals for the sector of oil, gas and biofuels, and the companies in general. This approach allows saving costs and reaching a greater number of professionals in the sector.





Social Responsibility Committee

The Social Responsibility Committee addresses issues of high sensitivity and importance for the development of the oil industry. These issues include human rights, relations with communities and indigenous peoples, management of social risks, gender and cultural diversity and labor practices.

Corporate Social Responsibility (CSR) Management System

The updated version of the Corporate Social Responsibility (CSR) Management System was published in August and is available on our website. This management system provides conceptual and practical guidance on this issue and comprises a set of interrelated documents -framework documents, thematic manuals and tools- that facilitate the introduction, implementation and training on the issue adopting a comprehensive and holistic paradigm that includes environmental, social, and cultural factors. The system is a reference at the international level and is the only system developed specifically for the oil & gas industry.



Online course on “Business and Human Rights”

An online course on Business and Human Rights was developed and given for the first time with the support of professionals of the Regional Center for Responsible Businesses and Entrepreneurship (CREER under its acronym in Spanish). Its purpose is to introduce and provide basic tools of analysis on the subject to personnel at all levels of hydrocarbon companies. It was also a milestone in the development of online training, being the first of its kind to be offered by the Association.

Management of Environmental Impacts of the Oil and Gas Industry and the Rights of Children

In June, a memorandum of understanding was signed with UNICEF in order to make a report on the management of the potential environmental impacts of the industry on the rights of children. Through case



studies, the review of corporate policies, regulatory frameworks and scientific evidence, it seeks to generate knowledge to improve the practices of due diligence and the management of potential impacts on children. At the end of the year, work was done on the last stage of the project, and the final report is expected to be published in the first quarter of 2017.

Webinar on “Anti-Corruption and Fraud”

Following the line of work against corruption, the Webinar on Anti-Corruption and Fraud was held in May in association with the KPMG Global Energy Institute in Latin America. The talk was aimed at C-level executives, and its main objective was to share the main trends on how companies are dealing with international rules and regulations to combat corruption and corporate fraud, to analyze the factors that contribute to the incidence of these activities, and to facilitate the development of risk management strategies, with a view to its eradication in the organizations.

Support to the Implementation of the CSR Management System in YPFB

During 2016, support was provided to YPFB in the definition of the basic CSR concepts, alignment of the business model and policies of the organization with CSR, with the baseline implementation framework and with the management framework of the company. Training was also provided for a diagnosis of the main CSR topics, mapping of stakeholders and risk analysis.

Report of cases of relations with Indigenous Peoples

In the framework of the extensive work carried out by the Association with respect to the relations of the industry with the indigenous peoples in the region, a document that contains the experience of ARPEL member companies was developed. Its purpose is to share lessons learned and recommendations to promote a greater understanding of this issue, and to improve the knowledge to facilitate the processes of the industry where this issue needs to be addressed as a matter of high social sensitivity.





Refining and Fuels Committee

The work of the Refining and Fuels Committee was focused on the exchange of experiences and best operational practices, with the aim of improving efficiency and competitiveness, and raising the standards of performance in environment, health and safety.

Workshop on “Best Practices in Energy Management”

Energy efficiency is currently considered a new source of energy because of its potential to increase the energy available to be finally used without increasing inputs or losing quality in the services. At a time when climate change and competitiveness are key issues for business continuity in the hydrocarbons industry, the Workshop on Best Practices in Energy Management was held in Buenos Aires. The two-day event brought together 150 professionals from the region to exchange experiences, best practices and the implementation of the latest solutions and technological innovations in the field, in addition to carrying out a guided visit to the La Plata Refinery.



Workshop on “Best Practices in FCC units”

Within the framework of the 50th anniversary of the Bío Bío refinery, a workshop on FCC units operation was organized with the support of ENAP. This was the first activity of its kind organized in Latin America, where more than 120 professionals from eleven refineries in Argentina, Chile, Colombia, United States, Peru, Uruguay and Venezuela participated.

During three days, these professionals exchanged experiences and information on best operational practices in catalytic cracking units and analyzed the challenges faced by the oil industry, and especially the refining industry in Latin America and the Caribbean, to operate its production units efficiently and ensure competitiveness.

New management tools available to minimize the impact on the environment, and the safety of operations and workers were also discussed during the workshop.

As a close to the event, the participants visited the operating facilities of the Bío Bío Refinery.



CYBERSECURITY

The Cybersecurity Working Group began its work by the end of 2015 as a team composed of the most senior specialists on the subject of major oil and gas companies in Latin America and the Caribbean, in order to reduce the vulnerabilities of the industry to face an emerging and highly potential threat.

In this regard, a **baseline survey** was carried out to determine the situation of companies with regard to cybersecurity, and the **Webinar “Business Cybersecurity, Concepts and Challenges”** was held in June. The talk was conducted by Jeimy Cano, Ecopetrol expert and professor at Universidad de los Andes.

The main activity of the year was the **Seminar on Cybersecurity in Critical Infrastructures in a Technologically Dependent and Interconnected World**. Organized by the Cybersecurity Working Group with the support of OAS and the Government of Argentina through the Ministry of Modernization and the Ministry of Foreign Affairs and Worship of the Republic of Argentina, this event was held October 18-19 at the Palacio San Martín in Buenos Aires.

This two-day event brought together 200 professionals from the sectors of Information Technology (IT) and Operations Technologies (OT), as well as experts and high-level governmental authorities. The main issues on the agenda were the analysis of the challenges posed by emerging cybersecurity threats for infrastructure integrity, in addition to the latest technologies and methodologies applicable to face them.

The conclusions of the event were compiled in a document with the same title as that of the event, which is available on ARPEL website. Among the key messages are that cybersecurity is an emerging and growing threat, with high potential for damage, and implies a change in the concept of risk analysis and mitigation strategies, cooperation among public and private actors, and a closer connection between the IT and OT areas.



Cases of mutual technical cooperation

Participants: ANCAP, RECOPE, YPF, PETROBRAS, PETROPERÚ, YPFB, ECOPETROL, PETROPAR, ENAP, PLUSPETROL, PETROTRIN, SCHLUMBERGER, EQUION, STAATSOLIE, CHEVRON



Topics :

- Dome roof tanks
- Cost of EMAT inspection (pipelines)
- Contact with oil pipeline heads of maintenance
- Minimum distance of LPG loading terminal
- Development of action plans for exploration, search for partners and for signing partnership contracts
- Rounds and management of multiclient contracts
- Shale oil
- Improved recovery with gas injection
- Mature fields
- IOR/EOR technologies for heavy crude
- Development of heavy crude fields
- Research and innovation in technology applied to upstream
- Produced water management
- Exchange of best practices to avoid degradation of Avgas - 100 (Aviation gasoline)
- Training of Talara Refinery personnel
- Support to the Recope refinery expansion project
- Tank cleaning companies
- Process safety management
- Variable compensation by HSE objectives
- Scope of health services



Climate Change Resilience

The Group on Climate Change, established at the end of 2015, aims to analyze the environment and improve the capacity of understanding of member companies regarding the **vulnerability, risks and opportunities** arising from climate change as important elements for the strategic management of the business sustainability.



First Meeting of the Working Group on Climate Change

The first meeting of the Working Group on Climate Change was held in November at the offices of the Executive Secretariat in Montevideo. Participants from ten companies shared their experiences on how they are addressing this subject in each company and country in the region. As a conclusion to the meeting, a number of activities were raised to work on three lines of action: raising senior management awareness, vulnerability and risk analysis, and standardization of methodologies to develop GHG emission inventories.

Dissemination and analysis of the results of the Conferences of the Parties (COP)

The Paris Agreement, which was reached after the COP21 in December 2015, is undoubtedly the most relevant international milestone in recent years with regard to the mitigation of and adaptation to climate change. This Agreement and the results of the COP, has great impacts on the oil and gas industry in the region. For this reason, the report “The Paris Agreement and the Oil and Gas Industry” was prepared. This report summarizes for the senior management the most significant aspects of the above-mentioned agreement for the industry. Work has already begun on the report on COP22, which will be published in January 2017.





Webinar “Zero Routine Flaring by 2030”

The Webinar “Zero Routine Flaring by 2030”, organized together with the Global Gas Flaring Reduction Initiative was held in July. This initiative, led by Secretary General of the United Nations, Ban Ki-Moon, and World Bank President, Jim Kim, and already endorsed by more than 50 governments, companies and multilateral organizations, seeks to eliminate the existing legacy of routine flaring by 2030, and help to ensure that field development plans for new oil fields include a utilization solution for the use of gas without routine flaring or venting. The webinar, attended by member companies, was presented by Francisco Sucre, Regional Coordinator of the Global Gas Flaring Reduction partnership of the World Bank, with the aim of disseminating the initiative and seeking synergies and opportunities for improvement of the performance of the industry in this matter.

Contribution of ARPEL to International Initiatives

In December, ARPEL participated in a workshop held in Colombia for the promotion of the Climate and Clean Air Coalition (CCAC). This international public-private coalition aims to reduce the emission of short-lived pollutants (methane, carbon, and others) and has a specific initiative focused on oil and gas, whose objective is the reduction of methane and carbon emissions in our industry. This workshop was the starting point for the approach and the search for synergies between ARPEL and the CCAC, and it is expected that dissemination and awareness actions will be materialized for our region and sector in 2017.

Promotion of Research

In order to encourage and strengthen research in the regional energy sector, and to disseminate this knowledge among the academic community, a contest was organized, together with OLADE, entitled “What is being done with the gas associated to oil in Latin America and the Caribbean?” This competition brought together researchers and experts of the hydrocarbons sector to develop a scientific article on “Venting and Flaring of Gas Associated with Oil in Latin America and the Caribbean.” At the end of the year, four finalist papers were selected, and the winner will be selected in the early months of 2017. The prize will consist in an economic compensation for research, entry to the Oil and Gas Regional Conference ARPEL 2017 and a course offered by ARPEL of the winner’s choice.



Energy Integration

Expansion of Markets and Energy Security

Report on “Trends of the Natural Gas Sector in LAC”

The Gas and Energy Committee developed the above-mentioned report in order to analyze the regional situation of the natural gas market, as well as the potential impact of large infrastructure projects in progress, the new international dynamic of LNG, the complementarity with the electricity sector, mainly with renewable energy, and the technological advances that allow the development of new markets such as LNG on a small scale. One of the most important conclusions of this paper is the need to continue to work on the harmonization of regulations that facilitate and optimize gas flows among the countries in the region, many of them already interconnected and with idle capacity. Precisely this last issue will be the main line of action of the Committee during 2017.



Regional Energy Agenda

Work continued on the Regional Energy Agenda along with ALADI, CAF, ECLAC, CIER, OAS, OLADE and WEC during 2016. In relation to the PRESER Project, several documents were prepared on National Strategic Security: “The International Framework and the Socio-Economic and Energy Developments in the Region at the Level of Countries and Subregions,” “Economic and Energy Scenarios for South American Countries,” “Identification of Strategic Projects for the Regional Energy Security in South American Countries” and “Argentina: Prospects of Natural Gas Supply.” Ten priority projects for the oil sector and ten projects for the electricity sector were also selected, which include the profile of each project and its economic, social and environmental analysis.





Technical Advocacy

Regulations Enabling
Investments



White Paper on unconventional hydrocarbons

With the aim of sharing the most relevant aspects relating to the exploration and exploitation of unconventional hydrocarbons (shale oil/gas/tight), the white paper establishes a series of proposals for sustainable development and for the benefit of the countries in the region, the document “Opportunities for the Development of Unconventional Oil and Gas in Latin America and the Caribbean” was drawn up. This document is based on extensive scientific evidence and intends to provide technical rigor to the debate on the social and environmental impact of hydraulic stimulation techniques, in matters such as induced seismicity, use of water or use of chemical additives.

The document was widely disseminated to the main relevant governmental authorities in the region, as well as representatives of companies, research institutes, chambers and industry associations, professional associations, international organizations, the academia and the civil society.

Multi-Institutional Ad-Hoc Group in Uruguay (ACEPH, WPC-UY, ARPEL)

The Association of Oil Exploration and Production Companies (ACEPH), the Uruguayan Committee of the World Petroleum Council (WPC-UY) and ARPEL established an ad-hoc collaboration group to openly share the accumulated knowledge on legislation, best practices, technological and socio-environmental management, with the Uruguayan authorities, and to facilitate the sustainable development of the hydrocarbons industry in this country. In this regard, several meetings were held with high-level authorities of the Uruguayan Government to advise on the sustainable development of unconventional reservoirs.

Workshop on “Experiences in Management of Hydrocarbons in Producing Countries”

To support the Ministry of Industry, Energy and Mines and the National Energy Authority of Uruguay, the Workshop “Experiences in Management of Hydrocarbons in Producing Countries” was co-organized with the support of ACEPH and the Uruguayan Committee of the WPC. The event brought together the highest authorities and technical staff of the aforementioned governmental bodies, specialists from companies that are conducting exploration activities in Uruguay, speakers of the Argentine Institute of Oil and Gas (IAPG), the Economic Commission for Latin America (ECLAC) and international consulting firms. The objective of the workshop was to share best practices on governance of natural resources, taxation of extractive industries and the proper management of communication and expectations in a potentially new industry.



Sustainability Reports and Communication

Transparency and
Reputation

Confirming the commitment of the Association to social and environmental sustainability, **the support to the Economic and Social Council of the United Nations and the consultative status of ARPEL were ratified** after submitting the quadrennial report. This report summarizes the activities carried out by the Association to promote the economic and social sustainability, and the Sustainable Development Goals that were defined in 2015 and will be in force for the next 15 years.



The new brochure “**ARPEL in Perspective**” was developed with the seven strategic guidelines established by the Association for sustainable energy development.

The Association ratified its accession and support to the **Global Compact Network Uruguay**. ARPEL is a member of the Global Compact since 2006 and has since then promoted its ten principles in its member companies.

New editions of **ARPEL Newsletter** were released.

The **Communications Plan of ARPEL for 2016-2018** was developed, with one of its main objectives being to communicate the achievements of the industry, thus working on its positioning and improvement of its reputation.

Significant presence in the media as of the organization of various events such as the **Seminar “Industrial Cybersecurity in a Technologically Dependent and Interconnected World”**, and the 88th Meeting of Experts (RANE) on “Reservoir Management.”

The **new publications of ARPEL** were disseminated among the specialized media: Report “Trends of the Natural Gas Sector in Latin America and the Caribbean” and White Paper “Opportunities for the Development of Unconventional Oil and Gas in Latin America and the Caribbean.”



Spaces for Dialogue

Networking and New
Business

ARPEL Conference 2017

During 2016 work was done in order to define the date, the motto, logistics, the agenda and the marketing plan of the Conference to be held April 25-27, 2017 in Punta del Este.

In its fifth edition, under the motto **“New Energy Reality - Challenges and Opportunities,”** it will bring together Presidents and CEOs of major companies and leading governmental authorities to present their vision on the new energy reality.

There will also be a business forum focused on the promotion of investment opportunities in exploration and production in Latin America and the Caribbean, in which State entities responsible for the regulation, promotion, bidding process and contracts in the oil and natural gas sector in the region will participate.

Some of the issues that were identified in the agenda of the ARPEL 2017 Conference include: Prospects for the development of gas reserves in LAC; Challenges faced by the upstream sector in the new context of low prices: mature fields, unconventional, offshore; The future of the oil and gas industry in the framework of the new global context; Global and regional economic and geopolitical vision and its impact on the energy sector; Smart Cities and mobility, new energy alternatives; Strategic importance of having an effective industrial cybersecurity program; The future of the refining and the petrochemical industry; and The labor force of the future, among others.

 For further information, please visit www.conferenciaarpel.org



OIL & NATURAL GAS CONFERENCE

ARPEL2017

LATIN AMERICA AND THE CARIBBEAN

April 25 - 27, 2017

Conrad Hotel. Punta del Este, Uruguay

NEW ENERGY REALITY.
CHALLENGES AND OPPORTUNITIES



Representation before other related Organizations in the Sector

Articulator of Stakeholders

“A Brief Report Useful for the Hydrocarbon Agencies of the Region”

The document “A Brief Report Useful for the Hydrocarbon Agencies of the Region” was developed based on workshops conducted in Uruguay by Farouk Al Kassim, a geologist born in Iraq and nationalized Norwegian, who was one of the main responsible of the Norwegian Government in the development of the emerging oil industry in that country in the 1970s. This report was disseminated to all hydrocarbon agencies in the region and summarizes the key messages provided by a highly-qualified expert in the hydrocarbon industry that focused on good governance of natural resources to develop investment and create lasting wealth and sustainable development for the country that owns and develops such resources.

COOPERATION AGREEMENTS AND INSTITUTIONAL REPRESENTATION AT INDUSTRY EVENTS

The Association continues seeking to extend and enrich its network of cooperation in the region. Therefore, four new agreements were signed with SIGTTO (Society of International Gas Tanker and Terminal Operators), Bariloche Foundation, CCPS (Center for Chemical Process Safety) and SPH (Peruvian Society of Hydrocarbons) in 2016.

During the year, ARPEL participated on behalf of the industry in a number of significant regional and international events:

4th Unconventional Gas Forum, IEA

April 21, Buenos Aires

Mexico Regional Forum, IOGP

May 25, Mexico City

VI International Oil and Gas Congress, YPF

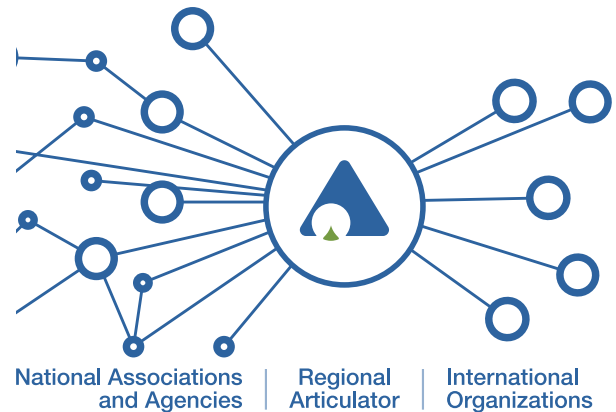
July 12-13, Santa Cruz de la Sierra

Regional Seminar on Energy Scenarios in Latin America, WEC

July 12-13, Rio de Janeiro

IX Congreso Internacional Bolivia Gas & Energía, CBHE

August 17-18, Santa Cruz de la Sierra



3rd Latin American Congress and 5th National Congress on Occupational Health, Safety and Environment in the Oil and Gas Industry, IAPG

September 23-26, Buenos Aires

South American Regional Forum, SIGTTO

September 27, Buenos Aires

XII Monobuoy and Oil Terminal Operators Conference (SLOM)

October 3-5, Mexico City

XLVI Meeting of Ministers of Energy, OLADE

October 21, Quito

Rio Oil & Gas, IBP

October 24-27, Rio de Janeiro

36th Latin American Petrochemical Meeting, APLA

November 19-22, Buenos Aires

Global Compact Workshop “Sustainable Development Goals and their Implementation in Business”

April 28, Montevideo

Global Compact Workshop in Argentina “Prior Consultation”

June 8, Buenos Aires

Workshop of the Uruguayan-German Chamber and the Global Compact on “The Business Fight against Corruption, Approaches and European Experiences”

September 28, Montevideo

Courses

Evaluation of Programs to Address Oil Spills (RETOS™)

Asunción, Paraguay, May 4-5, in-company for Petropar

Pipelines Integrity Management

San Marcos, Peru, May 9-12, in-company for Antamina Mining

Accreditation Program on Pipelines Integrity Management - Module I - External Corrosion

Lurin, Peru, June 13-18

Evaluation of Programs to Address Oil Spills (RETOS™)

Buenos Aires, Argentina, September 22-23



Business and Human Rights

November 15-December 15, **first course in e-learning format**



The **platform for online courses** was launched in October, and the first course was Business and Human Rights, carried out between November and December, in which 28 professionals throughout the region participated.

In turn, the Association **continued to develop new lines of courses** that will be offered in the near future, on issues such as process safety, cybersecurity, climate change or terminal operation.



Publications

Manual on Environmental Performance Benchmarking

Technological Cooperation as a Pillar of the Development of the Oil and Gas Industry in Latin America and the Caribbean - Meeting of R&D Centers

Guidelines for Monitoring and Inspection of Pipeline Integrity Management to Face Geohazards

Corporate Social Responsibility Management System (updated 2016 edition)

Vector-Borne Disease Management Programme (translation of the IOGP/IPIECA guide)

Benchmarking on Safety in the Oil and Gas Industry in Latin America and the Caribbean, 2015 data

Guidelines for Addressing the Evaluation of Psychosocial Risk Factors in the Workplace

Opportunities for Development of Unconventional Oil and Gas in Latin America and the Caribbean

Trends of the Natural Gas Sector in Latin America and the Caribbean

The Paris Agreement and the Oil & Gas Industry

Fire Protection Systems in Transportation and Storage Facilities

Benchmarking Report on Environmental Performance (2015 data)

Oil Spill Response Planning and Readiness Assessment Manual and its Assessment Tool RETOS V 2.1, version updated in 2016, and translations into French and Portuguese

A brief report useful for hydrocarbon agencies in the region

Benchmarking Manual on Industrial Safety, update which incorporates safety indicators

Best Practices in Offshore E&P in Times of Crisis

Benchmarking Report on Knowledge Management

Benchmarking Report on Human Talent

Cases of Relations with Indigenous Peoples: Strengths, Weaknesses and Lessons Learned

Cybersecurity in Critical Infrastructures in a Technologically Dependent and Interconnected World

Delegates in Technical Committees and Working Groups

Environment, Health and Safety Committee (CASYSIA)

ARPEL contact:

Pablo Ferragut; pferragut@arpe.org.uy, Ph. (+598) 24106993 ext. 133

Delegates: Mariela Fresia, Rosario Martino – ANCAP; Miguel Camargo -AXION ENERGY; Diana Puerta Osorio, Natassia Vaughan Cuéllar – CENIT; Óscar Leal Choque, Fernando Promis Baeza – ENAP; José Antonio Pareja Rosales - EPPETROECUADOR; Mauricio Jaramillo, Ignacio Alonso – EQUION; Maritza Benites, Carlos Ponce de León - HUNT OIL; Carlos Henrique Abreu Mendes –IBP; Fritz Smith –IHS; Juan Halaix Osorio –OCENSA; Paul Schuler - OSRL; Che Stewart – PCJ; Ramiro Ramírez, Ángel Esteban, Eric Enrique Omaña Rodríguez –PDVSA; Luis Fernando Betancourt Sánchez, Javier Bocanegra Reyes - PEMEX; Guido Abad – PETROAMAZONAS; Luiz Eduardo Valente- PETROBRAS; Luis Adanaque Requena, Javier Alegría Tenorio - PETROPERÚ; Shyam Dyal –PETROTRIN; Mary Stella Corsaro – PLUSPETROL; Jaime Barrientos Chacón, Walter Solano Arce, Álvaro Ramírez Alfaro – RECOPE; Jaime Martín Juez, William Ojeda, Carlos Videla – Repsol; Ángel Gutiérrez – Schlumberger; Dennis Mac Donald, Ivan Defares – STAATSOLIE; Virgilio Panduro, Stephen Wharton, Roberto Vassallo – TECPETROL; Alfonso Tomás, Eduardo Veracierta – TEMA; Homar Salicioni – WEATHERFORD; Ricardo Ferro, Eugenio Sellan - YPF; Miguel Ángel Rojas Castro, Gamal Amonzabel, Walter Sarmiento -YPFB

Exploration and Production Committee (AEPC)

ARPEL contact:

Miguel Moyano; mmoyano@arpe.org.uy, Ph. (+598) 24106993 ext. 124

Delegates: Héctor De Santa Ana, Santiago Ferro – ANCAP; Sandra Coleman (esperando confirmación) - AIPN; Javier Armando La Rosa Heinrich –CHEVRON;

Alberto Tovar; Nelson Castañeda; Javier Sánchez Orjuela – ECOPEPETROL; Hesketh Streeter, Lisandro Rojas – ENAP; Alberto Consuegra – EQUION; Diego Florez Milla, Barbara Bruce - HUNT OIL; Steve De Vito – IHS; John A. Campbell – IOGP; Brian Richardson – PCJ; Luis Macías Chapa, Mario A. Vásquez Cruz – PEMEX; Francisco Paz - PETROAMAZONAS EP; José Carlos Laurindo De Farias – PETROBRAS; Daniel Díaz Del Águila, Víctor Huerta – PETROPERU; Stephen Awah – PETROTRIN; Telmo Gerlero, Marcelo Arteaga – PLUSPETROL; Evandro Correa, Carlos Saavedra – Repsol; Abelardo Gallo, Alex Kletzky - SCHLUMBERGER; Geoffroy Paixach, Richie Miller - Spectrum Geo Inc; Henk Chin Lie, Soerin Nandlal – STAATSOLIE; Francisco R. Grosse – TECPETROL; Carlos Pérez – TEMA; Pietro A. Milazzo – WEATHERFORD; Carlos Agustín Colo, Gastón Conci – YPF; Luis Carlos Sanchez Arregui - YPFB

Pipelines and Terminals Committee (PITECO)

ARPEL contact:

Irene Alfaro; ialfaro@arpe.org.uy, Ph. (+598) 24106993 ext. 139

Delegates: Guillermo Boam, Juan Carlos Gómez Haedo, Raúl Sampedro Farias – ANCAP; Ricardo Olivera - AXION ENERGY; Ruben Diaz Schotborgh – Chevron; Alvaro Castañeda – CENIT; Antonio Meza Solano – COGA; Freddy De Jesús Díaz Barrios, Jesus Alonso Lasso Lozano, Martha María Echeverri Benjumea, Francisco Ascencio Alba – ECOPEPETROL; Edmundo Piraino – ENAP; José A. Sánchez Nuñez - EP-PETROECUADOR; Carla Pereira Imbroisi – IBP; Raúl Guio – IHS; Carlos Vergara – OCENSA; Kelvin Salmon – PCJ; Eduardo Gallegos Barcenás – PEMEX; Paulo Penchiná, Ricardo Dias De Souza, Luciano Maldonado García, Newton Camelo De Castro – PETROBRAS; Luis Suárez Carlo, Eduardo Miguel García Vega – PETROPERU; José Mele, Julio Cesar Ramirez Bizzotto – PLUSPETROL; Jaime Rodríguez Salazar, Luis Diego Vargas Prado – RECOPE; Sergio Gómez Redondo – REPSOL; Begoña Mundó – TEMA; Arturo Heinke – YPF; Christian Inchauste Sandoval - YPFB

Social Responsibility Committee (SRC)

ARPEL contact:

Amanda Pereira; apereira@arpe.org.uy, Ph. (+598) 24106993 ext. 127

Delegates: Soledad Rodríguez, Pablo Bernengo – ANCAP; Diana Puerta Osorio – CENIT; Mónica Dávila – CHEVRON; Marcela Fajardo Adárraga, Andrés González Rey, Napo León Gómez - ECOPEPETROL; Gabriel Méndez, Eugenio San Martín - ENAP; Lucía Cáceres, Yomar Álvarez - EP-PETROECUADOR; Natalia Morales - EQUION; Martín L. Kaindl - IAPG; Carlos Víctor - IBP; Helen Murphy - IPIECA; José López - PETROAMAZONAS EP; Janice Dias, Edson Cunha - PETROBRAS; Clara Ines Indacochea Alvarez, José Limaco Castillo - PETROPERU; Shyam Dyal - PETROTRIN; Sandra Martínez, Roberto Ramallo - PLUSPETROL; Shionny Porrás Moya, Ileana Herrera Arias - RECOPE; Eduardo García Moreno, Gloria Vidal Torrado – Repsol; Widjai Jungerman-Gangadin - STAATSOLIE; Silvina Oberti - YPF; Katia Vega - YPFB Chaco; Miguel Ángel Rojas Castro - YPFB

Refining and Fuels Committee (REFCOM)

ARPEL contact:

Irene Alfaro; ialfaro@arpe.org.uy, Ph. (+598) 24106993 ext. 139

Delegates: Mauro De Camilli, Daniel Cebey, Rosario Martino, Nikolai Guchín – ANCAP; Luis Fredes – AXION; Diana Morales Ardila – CENIT; Luis Guillermo Aristizabal, Jairo Buitrago – ECOPEPETROL; Patricio Estay, Patricio Farfán – ENAP; Marco Calvopiña - EP-PETROECUADOR; Daniel M. Rellán – IAPG; Ernani Filgueiras – IBP; Steve Fekete – IHS; Artemis Kostareli – IPIECA; Winston Watson, Brian Richardson, Brian Case – PCJ; Beatriz Eugenia Fromow Valdez, Othón Valverde Yáñez – PEMEX; Rodrigo Abramof, Frederico Guilherme Da Costa Kremer, Sergio Fontes, Geraldo Marcio Diniz Santos – PETROBRAS; Gustavo Pérez Navarro, Gerardo León Castillo – PETROPERU; Sergio Cavallín, Julio Cesar

Ramirez Bizzotto – PLUSPETROL; Henry Arias Jiménez, Oscar Acuña Céspedes – RECOPE; Carlos Jiménez López, Arsedio Carbajal González – Repsol; Carlos Hughes, Aubrey Nai Chung Tong – STAATSOLIE; Javier Niño, Manel Fernández – TEMA; Gabriel Grzona - YPF

Human Talent and Knowledge Management (HT&KMC)

ARPEL contact:

Amanda Pereira; apereira@arpe.org.uy, Ph. (+598) 24106993 ext. 127

Delegates: Alfredo Alcarraz Fernandez, Hubert Arbildi Lopez – ANCAP; Jimena Doperto, Lisandro Blas - AXION; Oscar Javier Guerra Perdomo - ECOPEPETROL; Pablo Vellozo Alcaide, Denisse Golfarb Casas - ENAP; Sandra Bethzabe Hormaza Valencia - EP-PETROECUADOR; Xavier Garcia de la Torre, Maria Margarita Esguerra Roa - Equion Energia Limited; Patricia Scott - IBP; Juan Pablo Castrillon - OCENSA; Danny del Valle - PETROAMAZONAS EP; Simone Porto Loureiro, Beatriz Hallak - PETROBRAS; Jose Manuel Rodríguez Haya - PETROPERU; Mariana Cukier - PLUSPETROL S.A. ; Edgar Vargas Jimenez, Hazel Daniels Barquero - RECOPE; Maria Jesús Blasco,; Fernando Bocchicchio - SCHLUMBERGER; Hector F.Tamanini, Julieta Veytes - TECPETROL; Paul Morrell - WEATHERFORD; Anabel Andrea Perrone, Carolina Parrella - YPF

Gas and Energy Committee (AGEC)

ARPEL contact:

Pablo Ferragut; pferragut@arpe.org.uy, Ph. (+598) 24106993 ext. 133

Delegates: Rubén Schiavo – ANCAP; Juan Carlos Belza, Juan José Carrasco, Óscar Ferreño – CIER; Felipe Trujillo, Omar Enrique Tovar De La Cruz – ECOPEPETROL; Andrés Alonso, Oscar Santibañez - ENAP; Juan Manuel Morales A. - EQUION ENERGIA; Mark Aertker, Linette Lecussan - HUNTOIL; Roberto Ferreira da Cunha - IHS; John Piñeros, Damaris Franco Mendoza - OCENSA; Brian Richardson

- PCJ; Rafael Resende Pertusier - PETROBRAS; José Hidalgo Quevedo, Ricardo Zúñiga Corso - PETROPERU; Germán Macchi - PLUSPETROL; Naresh Khanna, Oscar Acuña, RECOPE; Agustín Huerta Martínez, Jorge Gómez de la Fuente, Andrés Sannazzaro - REPSOL; Andre Olinto do Valle Silva - SCHLUMBERGER; Juan Marcelo Antelo - CBH (BG – Bolivia); Albert Tacias Francí - TEMA; David Tezanos González, Alejandro Fernández - YPF; Virginia Isabel Rendón - YPF

Communications Working Group

ARPEL contact:

María Eugenia Guzmán; meguzman@arpel.org.uy, Ph. (+598) 24106993 ext. 135

Delegates: Mariela Fresia, Susana Pérez, Pablo Bernengo - ANCAP; Pedro López Matheu – AXION; Ronald Fessy Málaga – CBHE; Gabriel Méndez, Lorena Rubio – ENAP; Octavio Duque –EQUION; Martín L. Kaindl – IAPG; Rosarys Ystúriz M. – PDVSA; Yessenia Barreno - PETROAMAZONAS EP; Juan Borrelli – PETROBRAS; Luis Mieres – PETROPAR; Ana Bettina Mindikowski - PETROPAR; Carla Santa Cruz – PETROPERU; Segundo Marengo – PLUSPETROL; Shionny Porras Moya – RECOPE; Mauricio Mariaca – REPSOL; Gonzalo López Nardone - YPF

Group of Experts on Climate Change

ARPEL contact:

Irene Alfaro; ialfaro@arpel.org.uy, Ph. (+598) 24106993 ext. 139

Delegates: Rosario Martino – ANCAP; Fernando Promis, Fabian Guerrero Leiva - ENAP; Javier Bocanegra Reyes, Paulina Isabel Serrano Trespalcacios - PEMEX; Javier Alegría Tenorio, Juan Gallarday Pretto - PETROPERU; Christian Döbereiner, Sandra Martínez - PLUSPETROL; Pablo Martellotta, Hector Tamanini - TECPETROL; Eric Tolcach, Federico Paloma – YPF

Cybersecurity Working Group

ARPEL contact:

Hernán Vázquez; hvazquez@arpel.org.uy, Ph. (+598) 24106993 ext. 130

Delegates: Andrea Parada – ANCAP; Neptalí Mayorga - COGA; Samuel Gonzalo Pinzón Barrios - ECOPETROL; Rafael Lozano - EQUION; María Victoria Morrone - PLUSPETROL; Fernando Zuñiga - RECOPE; Javier Pedro Buzzone - TECPETROL; Brian O'Durnin, Gerardo González, Pablo Cattaneo - YPF



INSTITUTIONAL

2016 ARPEL Annual Report



ARPEL is a non-profit association gathering oil, gas and biofuels sector companies and institutions in Latin America and the Caribbean. Founded in 1965 as a vehicle of cooperation and reciprocal assistance among sector companies, its main purpose is to actively contribute to industry integration and competitive growth, and to sustainable energy development in the region. Its membership currently represents over 90% of the upstream and downstream activities in the region and includes national, international and independent operating companies, providers of technology, goods and services for the value chain, and national and international sector institutions.



Regional Headquarters:

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

www.arpel.org