

2018 ARPEL Annual Report







Table of Contents

Governance _2

Membership

Message of the Chairman of the Board of Directors

Executive Summary _5

Institutional Development and Governance

_8

Innovation _**18**

Mutual Assistance _21

Transparency and Reputation

_46

Mutual Technical Assistance

_52

Spaces for Dialogue _53

Institutional Representation at Industry Events _55

Delegates to Technical Committees and Working Groups _61

Governance

Board of Directors

Chairman: Carlos Colo (YPF)

Vice Chairs:

Benito Piñeiro (ANCAP) Roberto Díaz (PLUSPETROL) Marco Antonio Toledo (PETROBRAS) Miguel Ángel Lozada (PEMEX)

Members

Ariel Azar (ENAP) Bob Fryklund (IHS-MARKIT) William A. Wilka (PETROPAR) Luis Suárez Carlo (PETROPERU) Evandro Correa Nacul (REPSOL) Humberto Ribera (SPECTRUM)

Fiscal Commission

Alejandro Muñoz Villalobos (RECOPE) Albert Tasias (TEMA) Brian Richardson (PCJ)



Membership

Active Members

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

Cooperating Members

BAKER HUGHES a GE Company HONEYWELL-UOP IHS MARKIT KBR TECHNOLOGY SCHLUMBERGER SPECTRUM TEMA

Alliances

ALADI Latin American Integration Association CAF Development Bank of Latin America ECLAC Economic Commission for Latin America and

the Caribbean OAS Organization of American States

OLADE Latin America Energy Organization

Institutional Members

ACEPH

Hydrocarbon Exploration and Production Companies Association of Uruguay AIHE Oil Industry Association of Ecuador AIPN Association of International Petroleum Negotiators 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 CYTED Ibero-American Program of Science and Technology for Development **ENERCLUB** Spanish Club of Energy **BARILOCHE FOUNDATION** IAPG Argentinean Oil and Gas Institute IBP Brazilian Institute of Petroleum, Natural Gas and Biofuels IGU International Gas Union **ILTA** International Liquid Terminals Association IOGP International Association of Oil & Gas Producers **IPIECA** The global oil and gas industry association for environmental and social issues OSRL **Oil Spill Response Limited RAC/REMPEITC-Caribbean** The Regional Marine Pollution Emergency Information and Training Center for the Wider Caribbean SIGTTO Society of International Gas Tanker and Terminal Operators SLOM Latin-American Society of Monobuoy Operators SPH Peruvian Hydrocarbons Society WPC World Petroleum Council WEC World Energy Council



Message of the Chairman of the Board of Directors

We have completed another year of intense work, and as the Chairman of the Board of Directors, I would like to thank the dedication of the whole ARPEL community, whose commitment has made it possible to continue on our path toward a more sustainable industry, supporting its transformation proactively to address the challenges of our sector.

We are experiencing revolutionary changes in information and communication technologies, business models, economic development and the provision of energy. The transition to less carbonintensive economies has marked the agenda of the Association in order to strengthen the contribution of companies in the sector to sustainable development.

With this purpose, we organized several technical events in different countries throughout the region with a focus on process safety, cybersecurity, natural gas, illegal taps, integrity of assets, climate change, and operation and maintenance of refining units. In addition, we have launched more than ten new publications, and coordinated a series of virtual events and mutual technical assistance instances between companies to accelerate learning curves and achieve safer and more efficient operations. It has also been the first year of operation of the virtual exchange tool Innov@arpel to strengthen networking for cooperation and business among professionals.

In addition, the Association has had active participation in different internationally renowned forums, bringing the voice of the industry and thus facilitating the dialogue with government authorities and other stakeholders. In this regard, it is pertinent to highlight our participation throughout the year in the working groups on energy and sustainability of the G20 and B20.

We held the first full edition of the Training Program for Senior Management, which is addressed to the future leaders of the sector and provides a comprehensive view of the whole value chain of the energy business. This program will continue in 2019.

Finally, our Association has begun a new cycle with the appointment of Mr. Izeusse Braga as Executive Secretary to replace Mr. Jorge Ciacciarelli - whom we thank for his dedication and commitment to ARPEL - and the election of a new Board of Directors, with representatives of Pemex and Petrobras as new members for the period 2018-2020.

A new cycle has begun in ARPEL, which will lead to a new Strategic Plan, with a focus on the new energy scenario, the Sustainable Development Goals and the attraction and retention of talent, with emphasis on the inclusion of young people and the governance of the companies in the sector, accompanying the process of transformation of our industry.

Carlos Colo

EXECUTIVE SUMMARY

New Authorities

ELECTION OF THE BOARD OF DIRECTORS -PERIOD 2018-2020

Chair: YPF / Vice Chair: ANCAP, PLUSPETROL, PETROBRAS and PEMEX / Members: ENAP, IHS-MARKIT, PETROPAR, PETROPERU, REPSOL, SPECTRUM

New Executive Secretary:

Mr. Izeusse Dias Braga, +35 years of international experience in Petrobras

New Headquarters

The new headquarters at the World Trade Center of Montevideo were inaugurated.

Cooperation Agreements

ILTA

International Liquid Terminals Association, technical and institutional cooperation.

OAS

Organization of American States, collaboration in cybersecurity issues.

ARPEL at the G20/B20 Argentina

PARTICIPATION IN THE ENERGY TRANSITIONS WORKING GROUP OF THE G20. PARTICIPATION IN THE ENERGY, RESOURCE EFFICIENCY AND SUSTAINABILITY TASK FORCE OF THE B20.

Collaboration in the policy paper with private sector recommendations to the G20 governments on energy transitions, efficiency, access to energy, circular economy and adaptation to climate change.

Training Program for Senior Management

First edition of the Training Program for Senior Management, which aims to provide a comprehensive vision of the future of the energy industry and the oil and gas sector to the leaders and future leaders of companies in the sector.

Module 1 | "Global Factors and their Effects in the Upstream Sector of Latin America" (Buenos Aires and Neuquén, Argentina. June 11-13).

Module 2 | "Downstream Sector, the New Role of Refining in a World of Changing Demand" (Cartagena de Indias, Colombia. July 24-26).

Module 3 | "Gas, Coal and Renewables and their Role as Power Fuels in an Increasingly Decarbonized World" (Monterrey, Mexico. November 13-15).

31 professionals from 10 member companies participated in the first cycle.



Innov@arpel

Launch of the business and collaboration platform: +900 users +81 organizations

Committees

CONGRESSES, CONFERENCES AND SEMINARS

8th Latin American Conference on Process Safety September 10-13 | Buenos Aires, Argentina

Seminar "Cybersecurity in Critical Infrastructures: Risks, Opportunities and Priorities" October 9-10 | Buenos Aires, Argentina

1st Latin America Gas Conference and Exhibition October 9-11 | Mexico City, Mexico

TECHNICAL EXCHANGE WORKSHOPS

Workshop **"Management of Control Rooms for Pipeline and Terminal Operation"** June 5-6 | Buenos Aires, Argentina

Workshop **"Illegal Taps in Pipelines"** June 6-7 | Buenos Aires, Argentina

Workshop "Climate Risks and Adaptation: Challenges and Opportunities in the Oil and Gas Sector"

August 20 | Montevideo, Uruguay

Workshop **"Innovation and Greenhouse Gas** Emissions-Mitigation Technologies in the Oil and Gas Sector"

August 21 | Montevideo, Uruguay

Workshop **"Best Practices and Lessons Learned** from the Operation and Maintenance of Auxiliary Plants in Refining" September 5-7 | Montevideo, Uruguay

Second Workshop **"Management of Control Rooms for Pipeline and Terminal Operation"** November 26-28 | Rio de Janeiro, Brazil

Workshop **"Best Practices in the Operation** and Maintenance of Hydrocracker and Diesel Hydrotreating Units"

December 12-14 | Cartagena de Indias, Colombia

Representation of the Industry

Participation in **22 international events** of the sector throughout the region.

Mutual Technical Assistance Instances (ATRs)

+25 mutual technical assistance instances among member companies, with a focus primarily on environment, health and safety, and on operation of refining units.

Courses and Webinars

+7 technical courses on oil spills, pipeline integrity, cybersecurity, community relations and human rights
+6 technical exchange webinars

Publications

+8 publications, 4 benchmarking

reports on safety performance, process safety and environmental performance, **2 quidelines** or

methodologies on best practices and **2 executive reports** on issues of high significance for the sector.

Vision

To be an institution of reference in the consolidation of the oil and gas industry, furthering the provision of reliable and safe energy that meets the growing energy demand in a sustainable manner.

Mission

To promote the integration, growth, operational excellence and effective socio-environmental performance of the industry in the region, facilitating the dialogue, cooperation, development of synergies among players as well as the shared creation of value among members through the exchange and expansion of collective knowledge.

Committees and Working Groups

Expert delegates of member companies and member institutions, and other executives of the region work in cooperation in Technical Committees and Working Groups, as the engine of the Association to take forward its strategic objectives by:



- creating a space to share knowledge, best practices and lessons learned
- identifying and acting on issues and challenges related to their areas of interest, interacting with stakeholders in each area
- developing best practices in processes and management systems, and training and certification programs that facilitate the continuous improvement in operational performance
- defining and reporting performance indicators to enable regional comparisons on management and performance, identifying gaps and providing support to raise standards

Institutional Development and Governance

New Authorities

The new Board of Directors and the new Executive Secretary of the Association were elected in 2018.



New Board of Directors for 2018-2020

The election of the Board of Directors of the Association for the period 2018-2020 took place during the Annual Assembly of Representatives held in April at the Executive Tower of PEMEX in Mexico City.

The members reelected YPF to chair the Board. This position will continue to be held by Mr. Carlos Colo, Reserves Auditor of the company, who has served in various executive positions and has over 30 years of experience in the E&P Sector. Pluspetrol, ANCAP, PEMEX and Petrobras were elected as Vice Chairs, and ENAP, IHS Markit, Petropar, Petroperú, Repsol and Spectrum as Board members. RECOPE was elected as chair and TEMA and JCP as members of the Fiscal Commission.

New Executive Secretary takes office

On July 1, 2018, Mr. Izeusse Braga took office as Executive Secretary of ARPEL in replacement of Mr. Jorge Ciacciarelli, who ended his term of office in the Association after serving in that position from December 2013 to June 2018.

Mr. Izeusse Braga is an Economist with more than 45 years of business experience, 35 of them in the oil and gas industry. He holds a postgraduate International Marketing Degree from INSEAD, France and a Marketing Masters Degree from the IAG Business School of the Catholic University of Rio de Janeiro. He served in several positions in the Petrobras Group: Commercial Director, President of Petrobras Fertilizers (Petrofertil), Vice President of Petrobras International (Braspetro), Country Manager for Petrobras Trading Company (Interbras) in Argentina and Mexico and Head of International Corporate Communications. He also held executive positions in telecommunications



companies, engineering companies, insurance companies and in the Brazilian stock of exchange. During eight years, he was the Representative of Petrobras at the United Nations Organization (Global Compact), former Director and Vice President of ARPEL, Assistant Professor at Dom Cabral Foundation and Advisor and Consultant for the Global Responsible Leadership Initiative (GRLI) for Latin America & Caribbean.

During his term of office, which will end in 2020, the new Strategic Plan of ARPEL will be defined and implemented in order to continue to promote the sustainable development of the oil and gas industry in Latin America and the Caribbean.

New Headquarters

Since May, the headquarters of ARPEL are located in the World Trade Center of Montevideo, Uruguay, the most modern business center of the city, which holds the head offices of major national and international companies. This change is part of a broader process of modernization of ARPEL.













Regional Coordinators

In 2018, ARPEL began a Decentralization Plan with the purpose of having local representation in the various countries in the region and gaining first-hand knowledge of the needs of the companies operating in each country. In the first instance, three regional coordinators were appointed: Mr. Álvaro Castañeda in Colombia, Mr. Javier Bocanegra in Mexico and Mr. Lauro Valdir de Souza in Brazil.

With this Plan, the Association intends to strengthen relationships, cooperation and synergistic partnership among the companies in the industry and their stakeholders, promoting dialogue, joint actions and the exchange of knowledge in order to promote the development and implementation of best practices and solutions that ensure continuous improvement in the operational, environmental, social and economic performance of the oil and gas industry.

The main role of Regional Coordinators is to support the development of the activities and services of the Association in their countries, become a vehicle for bringing the advances of the regional industry at both operational and management level, and thus boost growth and competitiveness of all ARPEL member companies. They also foster direct relationships with the stakeholders in each country, contribute to establishing mutually-beneficial alliances with other sector institutions and help to attract new members to the Association. In 2019, ARPEL will continue with the appointment of more local contact persons in order to continue expanding its presence in the countries of the region and thus achieve greater connection with the country industry and its situation.

Retirement of Amanda Pereira

After 27 years of dedication and commitment to ARPEL, Ms. Amanda Pereira officially retired on September 7. She held the position of Director of Strategic Affairs of the Association in the past few years, in addition to being in charge of the Social Responsibility Committee and the Human Talent and Knowledge Management Committee. It is pertinent to highlight her role in the implementation in 2018 of the Training Program for Senior Management of the Association, which was held in Argentina, Colombia and Mexico.

Cooperation Agreements



Cooperation Agreement with **ILTA** (International Liquid Terminals Association)

ARPEL participated in the Annual Conference of ILTA, which was held June 11-14 in Houston, United States. Within the framework of this conference, the Downstream Director, Ms. Irene Alfaro, presented the main lines of work of the Association in relation to operational management of liquid terminals. This event is a point of reference and encounter of all companies that operate terminals and their main suppliers of services and technology on a global level.

In this context, a cooperation agreement was signed between both institutions. This agreement contains various objectives, emphasizing, inter alia, the search for synergies and the promotion of joint actions in technical activities (congresses, conferences, courses, studies and others relevant projects for the industry) developed by both ILTA and ARPEL in those cases in which such activities are in line with the mission and objectives of both institutions.



Cooperation Agreement with the **Organization of American States** (OAS)

In order to promote the cooperation of the public, private and academic sectors to strengthen the protection and safeguard of critical infrastructure, in July 2018, ARPEL and the OAS, through the Secretariat of the Inter-American Committee against Terrorism (CICTE), signed a Memorandum of Understanding which formalizes and gives continuity to the collaborative activities already undertaken by both institutions.

The scope of this memorandum provides for such points as exchanging information on the development of initiatives to strengthen cybersecurity among the members of the respective organizations, promote and participate in initiatives of mutual interest, and develop joint actions related to the institutional and academic cooperation in research areas.

Sector Development



ARPEL at the G20 and B20 Argentina

The G20, or Group of 20, is the main international forum for economic, financial and political cooperation that discusses the major global challenges and seeks to develop public policies to solve them. It is composed of the European Union and 19 countries that together generate 85 % of the world GDP.

Argentina held the G20 Presidency in 2018, and therefore, it determined the agenda and organized all the activities of the year, with more than 50 meetings, workshops and working and discussion tables that brought together the main stakeholders in each subject area, giving continuity to the progress made in 2017 during the presidency of Germany and laying the groundwork for the work to be carried out in 2019 under the presidency of the Japanese government. The final declaration and commitments were signed during the Leaders' Summit last December 1. ARPEL was the only business organization that participated as special guest in the Energy Transitions Working Group of the G20 (ETWG), which brings together the energy ministers of the 20 countries. It was represented in the workshop discussion organized in Buenos Aires and the two meetings held in February (Buenos Aires) and June (Bariloche), collaborating with the achievement of the objectives of the group.

It also participated as an active member in the Task Force on Energy, Resource Efficiency and Sustainability Task Force (ERES – TF) of the Business 20 (B20), an affinity group of the G20 formed by the private sector that submits recommendations to governments regarding the different topics of interest.



This group, led by Mr. Miguel Gutiérrez, CEO of YPF, worked on a policy paper with private sector recommendations to G20 governments. The issues covered in the document were energy transitions, efficiency, access to energy, circular economy and adaptation to climate change. ARPEL, in collaboration with IOGP, represented the oil and gas industry in Latin America and the Caribbean, contributing to the incorporation of sensitive issues for the sector in the final document. All the policy papers produced by the B20 Task Forces were delivered by hand to the President of the Republic of Argentina, Mr. Mauricio Macri, at the B20 Summit.

Within the framework of these activities, the Association also attended the Natural Gas Day, organized by the International Gas Union (IGU), and the Latin America Energy Forum and the World Energy Leader's Summit, both organized by the World Energy Council (WEC), thereby deepening the international networking and discussing the role of the hydrocarbon industry in the highest international forums on energy transition. In order to establish the positioning of the oil and gas industry in Latin America and the Caribbean in regard to this issue, and in an attempt to boost the region's economic and social development in a sustainable manner, ARPEL worked during the year in the development of a document compiling the main messages of the industry.

The contents are based on the conclusions of the workshop on energy transitions and the future of the Industry carried out within the framework of the Annual Assembly of members, in the participation of the G20/B20 process and in the interaction with specialists of the industry through Innov@arpel.

The document establishes the need to find costeffective solutions in the transition to cleaner, safer and more flexible energy systems, with a comprehensive vision that considers the economic specificities and the availability of natural resources in the region. The final version of the document will be published in 2019 as an international reference that will serve as a basis and guidance for the discussion of the role of the sector with different stakeholders.









Development of Exploration and Production of Unconventionals

Argentina - Brazil cooperation on the development of unconventional reservoirs

A series of activities was developed October 1-4 in Neuquén and Buenos Aires, Argentina, for authorities of the Brazilian Government led by representatives of the Ministry of Mines and Energy, members of federal and state energy agencies, and representatives of Brazilian universities. The purpose of these activities was to promote and disseminate good practices on regulation of hydrocarbon exploration and production in unconventional reservoirs.

These activities were organized jointly with the Argentine Institute of Oil and Gas (IAPG). The main objective was to transfer knowledge on the successful experience and the challenges faced by Argentina in the exploration, development and production of unconventional natural gas in the province of Neuquén, with a view to the potential development of unconventionals in Brazil. These activities were also supported by the Latin American Energy Organization (OLADE), the Brazilian Petroleum, Gas and Biofuels Institute (IBP), and the Brazilian Association of Oil Service Companies (ABESPetro).

The cooperation of the Argentine Government was channeled mainly through the Ministry of Energy and Mining and the Ministry of Energy and Natural



Resources of the Government of the Province of Neuquén. The following companies with operations and know-how on unconventional reservoirs of Neuquén contributed to the transfer of knowledge promoted by ARPEL: YPF, Tecpetrol, BHGE and Tenaris. The activities included a visit of the Brazilian delegation to the research center of YPF, Y-TEC, a technical seminar, a visit to the operations in Neuquén, bilateral meetings of governmental coordination to strengthen cooperation in the subject matter and the participation in the Expo Patagonia Oil & Gas organized by IAPG. In the framework of the promotion of regional cooperation and integration, ARPEL will continue to promote similar activities with hydrocarbons agencies in the region.



Dissemination of Good Practices before Authorities of the United States

The joint session of the Interstate Oil and Gas Compact Commission and the cooperation program Gas and Oil Technologies (GOT-CP) of the International Energy Agency (IEA) was held May 5 in Oklahoma, United States.

The event focused on providing information on technology transfer and regulatory issues. The Upstream Director of ARPEL, Mr. Miguel Moyano, was invited to give a lecture on "Recommendations for the Development of Unconventionals in Latin America and the Caribbean" within the panel "Production of Unconventionals in the United States and in the World."

Regional Cooperation and Integration

Offshore Development in Argentina and Uruguay

ARPEL provided institutional support to the 10th Congress on Hydrocarbon Exploration and Development that took place November 5-9 in Mendoza, Argentina, organized by IAPG. In addition, Spectrum, an ARPEL member company, participated in the round table on offshore exploration, "Offshore challenge," with the presentation "Offshore Exploration Prospects for Uruguay and Argentina."

Promotion of Cooperation between Agencies in the Region

The Sixth Meeting of State Entities Responsible for the Regulation, Promotion, Bidding and Contracts in the Oil and Natural Gas Sector in Latin America and the Caribbean took place in the framework of the Latin America Gas Conference and Exhibition held in Mexico City in October with the support of the National Hydrocarbons Commission of Mexico (CNH). This meeting has been held uninterruptedly on an annual basis since 2012, and constitutes a fundamental space for dialogue between companies and regulatory agencies. In addition, in order to promote regional cooperation, ARPEL coordinated the exchange of experiences among agencies of Argentina, Colombia, Ecuador, Mexico and Peru regarding communicational aspects associated with emergencies resulting from incidents in oil industry activities.

Training Program for Senior Management

ARPEL launched the first edition of the Training Program for Senior Management, which aims to provide a comprehensive vision of the future of the energy industry and the oil and gas sector to the leaders and future leaders of companies in the sector.

The program consists of three modules that cover the main questions, trends and potential business scenarios throughout the entire value chain of the oil and gas sector (upstream, downstream, gas and energy) in order to provide skills, tools and strategies for decisionmaking, in an increasingly challenging environment for the industry.

In addition, the modules, which are developed in two

days of courses and a day of visit to facilities, strengthen the relationships, understanding and networking of the new generation of industry leaders.

The three modules of the first edition of this program, given by professionals of the international consulting firm IHS Markit, were completed in 2018. About twenty future leaders from ANCAP, ECOPETROL, KBR Technology, PEMEX, PETROPAR, PLUSPETROL, REFINOR, SCHLUMBERGER, TECPETROL and YPF participated in each module.

The Program will resume in 2019 in order to continue to train future leaders of industry in the region, with a focus on sustainability.



Module 1 "Global Factors and their Effects in the Upstream Sector of Latin America"

Buenos Aires / Neuquén, Argentina June 11-13

Technical visit: Unconventional operations in Neuquén.



Module 2 "Downstream Sector, the New Role of Refining in a World of Changing Demand"

Cartagena de Indias, Colombia July 24-26 **Technical visit:** Cartagena refinery.

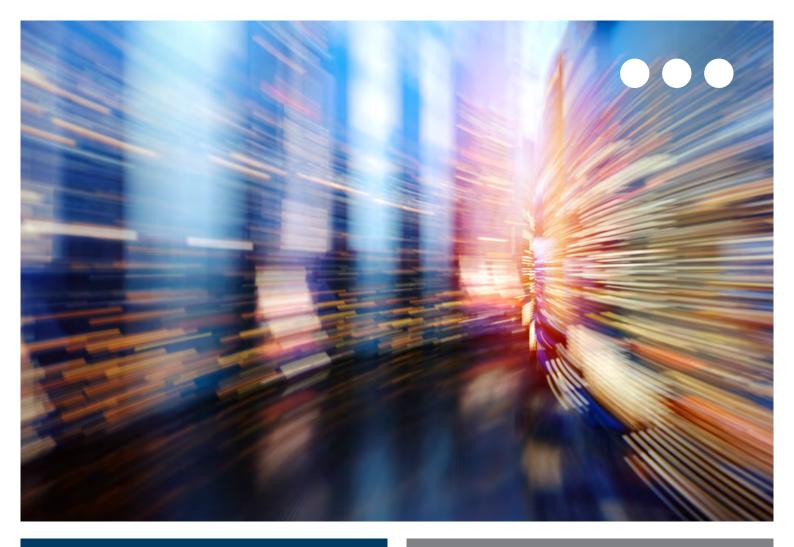


Module 3 "The Role of Gas, Coal and Renewables as Source of Energy in an Increasingly Decarbonized World"

Monterrey, Mexico November 13-15 **Technical visit:** El Cortijo wind farm and gas plant.







Innovation

Collaboration and business in the energy sector continued to be promoted, with a focus on attracting a larger number of users, especially from member companies, and on active participation in the different sections of the interactive tool.





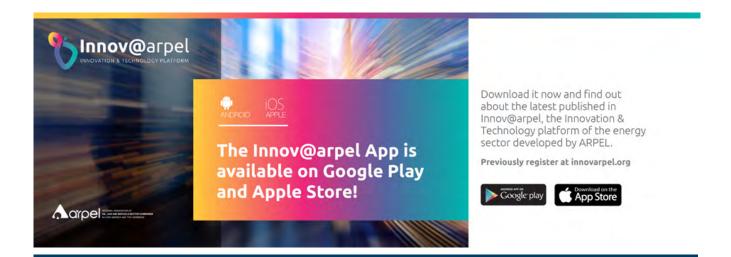
www.innovarpel.org

In order to continue focusing on innovation as an increasingly significant aspect for the competitiveness of the sector, the Association continued working hard in the dissemination and improvement of Innov@arpel, the virtual platform for innovation and technology developed by ARPEL to promote interaction between solutions providers (R&D centers, universities, suppliers of goods and services) and operating companies in the energy sector.

The platform currently has over 900 users from 81 organizations and was presented in 2018 at the Annual Conference of the International Liquid Terminals Association - ILTA (June, Houston, United States), at the Latin America and Caribbean Climate Week organized by the United Nations (August, Montevideo, Uruguay), at the Oil & Gas TechWeek organized by the Brazilian Petroleum, Gas and Biofuels Institute -IBP (September - Rio de Janeiro, Brazil), and at the Regional Annual Forum of the Society of International Gas Tanker and Terminal Operators - SIGTTO (October, Buenos Aires, Argentina).







An important milestone was the launch by mid-year of the Innov@ARPEL APP - available in Google Play and Apple Store - with the main objective of providing users notifications of new content in their smartphones or mobile devices.

Another novelty was the start of an open cycle of virtual conferences with question and answer sessions, which will continue in 2019. It was inaugurated by the CEO of DNV GL - Digital Solutions, Elisabeth Heggelund Tørstad, who spoke on "The Importance of Technology and Innovation for the Sustainable Energy Industry of the Future."



Innov@arpel

Elisabeth Heggelund Tørstad CEO of DNV GL – Digital Solutions

VIRTUAL CONFERENCE Online: October, 4-16

"The importance of technology and innovation for a sustainable energy industry going forward"

With regard to the improvements to the platform, a feature for the creation of private forums was added, tutorials videos were developed in order to facilitate the use of the tool, and a space was created in the News section based on the news published daily by the agency BNamericas, especially designed for developments in the sector.

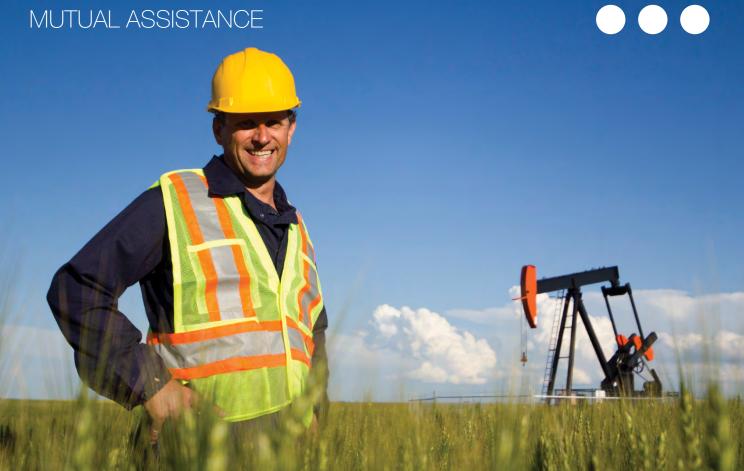
With reference to contents, the category Supply Chain was incorporated with the purpose of encouraging

the publication of goods and services supplied by providers. In addition, "energy transition" was added as one of the four "Highlights."

Finally, a new tab was included in the ARPEL website, called "Innovation," where the new tool is presented.

To enable an account in Innov@arpel, users should send an e-mail to infoinnov@arpel.org.uy

MUTUAL ASSISTANCE



CASYSIA

Health, Safety and Environment Committee

The Health, Safety and Environment Committee works on the exchange of best management practices as well as in performance benchmarking studies. In recent years, the main focus of the activities has been process safety.

During 2018, the Association organized the 8th Latin American Conference on Process Safety (8 LACPS) together with the Center for Chemical Process Safety (CCPS), developed the Process Safety Self-Assessment Tool and Methodology and carried out the traditional benchmarking studies on safety performance, process safety and environmental performance. In addition, dissemination and training activities regarding the RETOS tool for preparedness and response to oil spills as well as cooperation and mutual assistance activities were carried out.

8th Latin American Conference on Process Safety

Buenos Aires hosted the eighth edition of the Latin American Conference on Process Safety, which was coorganized for the first time by the Center for Chemical Process Safety (CCPS) and ARPEL.

The event, held September 10-13 at the Catholic University of Argentina (UCA), was attended by over 350 professionals representing more than 80 companies and institutions from 15 countries.

The agenda of the conference consisted of 40 technical presentations and 7 keynote speeches. The topics addressed were: Skills in process safety; Leadership and culture; Mechanical integrity; Change management; Risk identification and management; and Safety process technology, among others. Leading organizations in this issue at the international level, such as the International Oil and Gas Producers Association (IOGP), the Chemical Safety Board of the U.S. Government (CSB), the American Institute of Chemical Engineers (AIChE) and the National Fire Protection Association (NFPA) participated in the event.

Presentations emphasized some key messages such as the importance of a comprehensive approach to this issue, which allows integrating safety processes to the business strategy and the business risk matrix. In view of this, it is necessary to develop a safety culture and to work on it systematically, with a special focus on people and with a sense of vulnerability. In addition, reference was made to the need to work at the level of skills in safety, particularly in countries where the industry is expanding and adding new personnel. Finally, the experts also highlighted the role of regulations as a driver to foster the implementation of best practices and achieve the goal of having safer facilities, protecting people, the environment and the assets.









Workshop of Business Leaders

Concurrently with the conference, the Workshop "Leadership, Culture and Process Safety for Senior Management" was held, with the participation of top executives of the downstream and upstream sector, to discuss the role of leadership in the development of an organizational culture that promotes safe behavior and integrity.



Course "New Approach on Process Safety Metrics"

Also concurrently with the conference, this training workshop was held to discuss reactive and proactive safety indicators, regional statistics and the comprehensive approach to organizational culture and safety. The course was attended by 150 professionals throughout the region.

Process Safety Self-Assessment Tool

The Process Safety Self-Assessment Tool and Methodology was published in October 2018. It is a user-friendly and useful tool for the identification of gaps in the process safety management system in the oil and gas sector, both at the corporate level and at the level of upstream, midstream and downstream facilities. It is based on questionnaires used to assess the level of maturity of the different elements of a management system with an approach that may be customized for any type of company. The document is the deliverable resulting from work done during almost two years by the Process Safety Project Team. It will be implemented gradually through pilot applications in member companies during 2019 and will serve as a basis for achieving safer facilities in the industry in Latin America.





https://arpel.org/library/publication/503

HSE Performance Benchmarking Reports

New editions of the annual benchmarking reports on safety performance, process safety and environmental performance were published in 2018.

Such studies are a reference for the industry in Latin America and the Caribbean, as they present the key performance indicators in these areas, comparing the companies of the region with peers and with international references.

The development of these studies allows identifying gaps in performance and establishing various activities and cooperation projects to reduce the impacts of the activities of the industry on people and the environment.



Manual and RETOS Tool

(Readiness Evaluation / Excel Tool for Oil Spills)

The Manual and RETOS tool constitute a unique assessment tool that provides guidance for operators in the oil and gas sector and the governments to verify their own oil spill preparedness and response management. It is an international reference tool used throughout the world and available in four languages (Spanish, Portuguese, French and English). Since its launch in 2011, training workshops have been held for companies and governments throughout the region in order to develop skills and facilitate the implementation and use of the tool.





The following trainings and workshops were held in 2018:

Bogotá, Colombia

February 15-16, in association with the Latin American Society of Oil Marine Terminal and Monobuoy Operators (SLOM).

Managua, Nicaragua

April 18-20, co-organized with the Central American Maritime Transport Commission (COCATRAM) in the framework of a cooperation agreement.

Santo Domingo, Dominican Republic

July 24-27, in the framework of the XL Port Meeting of the Central American Isthmus (REPICA), which was organized by the Port Authority of the Dominican Republic and the Central American Maritime Transport Commission (COCATRAM).

Suriname

REMPEITC-Caribe (Regional Marine Pollution Emergency Information and Training Center for the Wider Caribbean).

Cuba

REMPEITC-Caribe (Regional Marine Pollution Emergency Information and Training Center for the Wider Caribbean).

Trinidad & Tobago

REMPEITC-Caribe (Regional Marine Pollution Emergency Information and Training Center for the Wider Caribbean).

Mexico

REMPEITC-Caribe (Regional Marine Pollution Emergency Information and Training Center for the Wider Caribbean).











PITECO

Pipelines and Terminals Committee

The Pipelines and Terminals Committee focuses on integrity of assets, capacity building for its management and the development of benchmarking studies on operational indicators. In recent years, it has developed a series of guidelines and manuals of best practices on pipeline integrity management and operation of terminals that are a reference at the regional and international levels. In 2018, progress was made in the development of new guidelines on specific threats to pipelines, and events for the exchange of knowledge and visits to plants were carried out.

New Guidelines on Best Practices

Progress was made in the development of five new guidelines on best practices that will be published during the first months of 2019.

These documents are in addition to those already developed by the Committee for the management, operation and maintenance of assets, and are increasingly placing specific emphasis on the various problems affecting the integrity of pipelines and terminals. The cumulative work and the bibliography developed have made it possible to turn ARPEL and its community of professionals into a point of reference not only for the region, but also at the international level.

Management of Control Rooms for Pipeline and Terminal Operation

The document is intended to provide operators and controllers of pipelines and terminals with best management practices for control rooms, which is essential to achieve a safe and efficient operation. It provides general guidelines to check the operation itself and achieve excellence in operational, social and environmental management.

Repair of Illegal Taps in Pipelines

Fuel theft from pipelines is an important problem at the global level, which affects all countries and transportation companies in Latin America and the Caribbean. Illegal taps pose a high risk to people and the environment, and also cause major operating problems and high losses to companies. The purpose of the document is to provide guidelines to hydrocarbon transportation operators on best practices to repair illegal taps, thus minimizing the risks to people and the environment and ensuring a quick and safe resumption of operations.

Pipelines Geotechnics and Civil Works

Geotechnical threats are one of the main causes of incidents in pipelines in Latin America and the Caribbean, and are also a matter with a strong regional specificity, due to the geographic features, climate phenomena and seismic events of the region. The Guidelines "Monitoring and Inspection of Pipeline Integrity Management to Face Geohazards", published in 2016 (https://arpel. org/library/publication/464/), represent the first documentary approach with the objective of consolidating best management practices regarding one of the elements related to this threat. Given the importance of this issue for companies in the region, the Committee decided to continue to make progress on this, developing the second guidelines on best practices with a focus on geotechnical and civil works, such as drainage, river crossings, stabilization works, etc., required to manage geohazards.



Management of In Line Inspection Process

In Line Inspection (ILI) is one of the most effective and direct techniques to determine the actual status of the pipeline in all its extension, and it is the most demanded technique at present. Its management involves making complex decisions from a technical point of view (choice of tool, procurement, inspection, interpretation of results, etc.) as well as major investments.

The guidelines consolidate the experiences and lessons learned from operating companies throughout Latin America and the Caribbean, which allows adapting the existing international bibliography to the regional context. They are a tool to manage internal inspection processes, improve strategic decisionmaking and, consequently, generate significant savings for companies.

Management of Stress Corrosion Cracking in Pipelines

These guidelines contain the best practices and lessons learned from the operators of pipelines in the region for the detection, prevention and mitigation of stress cracking of hydrocarbon pipelines. This phenomenon is a serious problem that is difficult to detect in pipelines.

Proper identification and maintenance management allows avoiding breakage, spills and other incidents, extending the useful life of assets.

Cross-Checks of Terminals

There were two new editions of the traditional cross-checks of terminals. Cross-checks have been implemented since 2013 with the purpose of promoting the exchange among professionals of member companies, sharing knowledge and identifying opportunities for improvement in the operation of terminals.

They consist in the verification of the degree of implementation of the best practices recommended by the Reference Manual for Terminal Operation Management in the facilities of one company by professionals from another company in a biunivocal manner. Other companies also participate as observers in all instances, which are an important opportunity for exchange between professionals of the sector.

11th Cross-Check of Terminals

Date: August 20-24 Site: **Pisco Terminal, Peru**

Host company: **Pluspetrol** Cross-check leader: **Empresa Nacional de Petróleo de Chile (ENAP)** Observers: **YPFB Transporte**

12th Cross-Check of Terminals

Date: November 12-16 Site: **Quintero Terminal, Valparaíso, Chile**

Host company: Empresa Nacional de Petróleo de Chile (ENAP) Cross-check leader: Pluspetrol Observers: Pan American Energy, Transpetro and YPFB Transporte





Technical Visits in Control Rooms

In addition to the cross-checks of terminals, there were two technical visits in control rooms of member companies.

Both visits not only served to exchange best practices, but also to advance the development of the guidelines on this issue.

1st technical visit

Control Rooms TGN and TGS June 8. Participants: **Transpetro, Pluspetrol, YPFB.**

2nd technical visit

Control Room Transpetro November 26-27. Participants: COGA, OLDELVAL, TGN, YPF, YPFB.





CODYTE Week (Pipelines and Terminals Committee Week)

Approximately 50 professionals from pipeline and terminal operating companies (COGA, Oldelval, PAE, Pluspetrol, Transpetro, YPFB, TGN, TGS, ENAP, Recope and YPF) from various countries in the region gathered during the CODYTE Week held in Buenos Aires June 4-8 and sponsored by YPF.

In the framework of this event, the annual meeting of the Pipelines and Terminals Committee, the working meetings of the Project Teams that are working on guidelines on best practices (geotechnics, in line inspection) and two workshops on illegal taps and control rooms were held. In addition, there was a technical visit to the terminal in the La Plata refinery of YPF.







Accreditation Program on Pipeline Integrity Management

A new edition of Module I - External Corrosion of the Accreditation Program on Pipeline Integrity Management was held February 19-24. The course was given at the facilities of COGA in Lurín, Peru, 30 kilometers away from Lima. This was the third module carried out using the facilities and testing laboratories of this member company, and was attended by professionals from Chile, Costa Rica, Mexico and Peru on behalf of Enap, Recope, Morelos O&M, Petroperú, Pluspetrol and COGA.



Support and Participation in the XIV Conference of the Latin American Society of Oil Marine Terminal and Monobuoy Operators

ARPEL participated in the XIV Conference of the Latin American Society of Oil Marine Terminal and Monobuoy Operators (SLOM) held October 3-5 in Quito, Ecuador. This event has been held annually since 2005 and its main objective is to share experiences and knowledge on the operation and maintenance of marine terminals to promote safe, efficient and competitive port operations. ARPEL is the institutional sponsor of the event in the framework of the cooperation agreement between both institutions. The Downstream Director of ARPEL, Ms. Irene Alfaro, who leads the Pipelines and Terminals Committee of the Association, participated in the opening ceremony with a short speech on the importance of the organization of the event, and of working hard to improve the operation and management standards of the industry in the region.



In the framework of this prestigious activity, the Vice President of the organization, Mr. Francisco Barreto, presented a diploma of recognition for the support of the Association to the organization of the XIV SLOM Conference. The event was attended by more than 200 participants from 22 countries.





RefCom

Refining and Fuels Committee

The Refining and Fuels Committee focuses on the best operational practices of refining units in order to transfer specific knowledge, accelerate learning curves and face the challenge of operating production units more efficiently to ensure the competitiveness and profitability of refineries in Latin America. In pursuit of these objectives, two in-person activities and a series of virtual mutual assistance instances between companies were organized in 2018.



This workshop was held September 5-7 in Montevideo, Uruguay, with ANCAP as host company.

It brought together about 100 professionals from various countries of Latin America and consisted of two days of talks to exchange experiences and a visit to the La Teja refinery, which supplies fuels to Uruguay and has an atmospheric distillation capacity of 50 thousand barrels per day.

During the workshop, reference was made to the importance of auxiliary plants, not only in the operation of refineries, but also as key to comply with increasingly more stringent environmental regulations.

The legal responsibility of plant operators, the allocation of resources for management, the process of managing community relations, best practices in operation of the biological system and measures for mitigation



and adaptation to climate change were some of the issues addressed during the event, which focused on minimizing impacts on the community.

Workshop "Best Practices in the Operation and Maintenance for Hydrocracker and Diesel Hydrotreating Units"

The event took place December 12-14 in Cartagena de Indias, Colombia, with REFICAR as host company and the support of Haldor Topsoe. It included a visit to the Cartagena Refinery, which has recently opened these units after the last expansion completed in 2015 and increased its atmospheric distillation capacity to 150 thousand barrels per day, with a conversion capacity of 97.5 %.

Over 80 professionals and specialists of refineries, service companies and engineering companies throughout Latin America participated in the event. The agenda for the event included 16 presentations which addressed various themes, from training and knowledge assurance to technical issues covering the entire cycle of operation of this type of units, from the quality of the load to the special tasks of maintenance, inspection and safety of facilities and people. The presentations were made by experts from Crystaphase, Ecopetrol, Eurecat, Haldor Topsoe, Honeywell UOP, Inerco, Petroval and YPF.



Mutual Assistance

The above-mentioned events are also useful to mobilize the community of specialists who are working on these issues and strengthen networks for the exchange of knowledge, which the Committee has been successfully furthering. In this regard, an example worth highlighting is the community of coking unit operators who, during the year, exchanged recommendations and best operational practices that originated in a workshop held in 2017.

In 2018, the Refining and Fuels Committee has been more active again with regard to coordination of mutual assistance instances, with 15 such instances organized with the participation of six companies and six countries.







SRC

Social Responsibility Committee

The Social Responsibility Committee addresses issues of high sensitivity and importance for the development of the hydrocarbon industry in order to improve the relations of the industry with its stakeholders. During 2018, the focus was on community relations, human rights and social investment.

Course "Community Relations Management and Resolution of Conflicts in the Extractive and Energy Industry"

A new edition of this course on community relations was held April 17-19 in Santiago de Chile. The event was attended by professionals of ANCAP, ENAP, Geopark and Metrogas.

This training addresses one of the main problems of extractive industries, particularly the relations with stakeholders and local communities for the effective development of investment projects. It is based on ARPEL Community Relations Management System (https://arpel.org/library/publication/342/), which provides for a conceptual and methodological framework for addressing these issues and maintaining a good relationship with the communities that enables the implementation of projects.

The understanding of the socio-environmental context in which investments are made is a fundamental aspect for achieving a sustainable industry.





Courses "Business and Human Rights in the Hydrocarbon Sector"

ARPEL organized two editions of the virtual course "Business and Human Rights in the Hydrocarbon Sector."

This course aims to train and provide practical tools to professionals in the oil and gas industry to properly manage the negative impacts that the operations of the industry may have on the rights of communities in the areas of operation, through the analysis of cases from Latin America and other regions of the world. The first edition of the course was held from May 7 to June 8, while the second was conducted from November 15 to December 15. Professionals from 12 companies and 5 different countries attended the training sessions.

Webinar "Social Investment in the Oil and Gas Industry in Latin America and the Caribbean"



WEBINAR

Inversión Social en la industria de petróleo y gas en América Latina y el Caribe

This virtual seminar was held August 6. Its purpose was to present the current concept of social investment, how it is included in the broader context of social responsibility and sustainability, what the challenges for its management are, how to measure it, how to analyze its impact and its connection with social risks. Studies and opinion polls at the global level reveal the existence of high expectations of the society with respect to the active role of companies in solving social problems.

The introduction was presented by Ms. Maia Seeger, Executive Director of SustentaRSE, and experiences were presented by Mr. Diego Mendoza, Leader of Strategy and Social Investment of Equión, and Mr. Juan Martín Angulo, Deputy Manager of Social Development of Petroperú.





HTKMC

Human Talent and Knowledge Management Committee



Webinar "Labor Flexibility - Telecommuting"

The virtual seminar presented the vision and experience of ARPEL member companies in regard to the concepts of labor flexibility, the application of new technologies, new workspaces and remote working. The current changes in talent management in companies with the use of new technologies, greater efficiency and productivity, and the need to attract and recruit the best talent of the new generations and retain talent already available make flexibility in the organization of work become a key element for which companies should be prepared and adapt. The presenters were Ms. Carolina Parrella, Change Management and Communication of YPF; Ms. Cecilia Boschiazzo, Manager of Culture and Talent Management of REPSOL and Ms. Daniela Vilella, Leader of Human Talent of PETROBRAS.



38





Industrial Cybersecurity Working Group

The Industrial Cybersecurity Working Group was created in 2015 in order to address the management of emerging risks as a result of digitalization and the advance of information technologies in industrial infrastructures. Its main activities include the organization of exchange seminars, training courses and documents for raising awareness at the level of senior management.

Seminar "Cybersecurity in Critical Infrastructures, Risks, Opportunities and Priorities"

The event, held October 9-10 at the Catholic University of Argentina in Buenos Aires, was supported by the Organization of American States (OAS), the Ministry of Modernization of the Presidency of the Nation and the Ministry of Foreign Affairs and Worship of Argentina, and YPF, an ARPEL member company that leads the Industrial Cybersecurity Working Group- .

This second edition attracted more than 250 participants representing 48 companies and 16 state agencies and institutions.

The main conclusions include the existence of increasingly higher risks, the need to work together to raise standards, establish regulations and create culture, the fact that cybersecurity is a continuous process of learning and maturity and that all countries and companies show that progress is being made in the right direction to protect critical infrastructure and assets of the oil and gas industry.



I³ Model. Attracting the Interest of the Board of Directors in Cybersecurity

This document was published in December and aims to establish a series of tips and tools to understand and raise awareness of senior management of companies as to how to deal with the risks and vulnerabilities arising from the new digital environment.

It was developed for ARPEL by Jeimy J. Cano, PhD, with more than 20 years of experience as an academician, executive and professional in information security, privacy, cybersecurity, information systems, government and IT audit, who is actively collaborating with ARPEL Industrial Cybersecurity Working Group.

<image><section-header>

Training Courses

Within the framework of the agreement with Wiseplant, two new training courses were conducted during the year. The first one was "Introduction to Cybersecurity," and was given April 24-27, and the second "Vulnerability Analysis and Cyber Risk Assessment in New and Existing Industrial Systems" was given July 10-12. Both courses were conducted online.

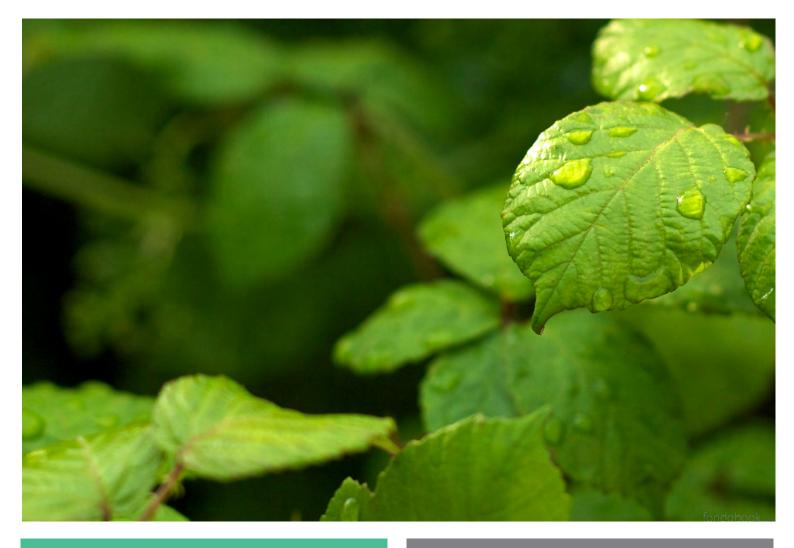


Presentation on Cybersecurity in Pipelines during the Pipeline Technology Conference

The 13th Pipeline Technology Conference was held March 12-14 in Berlin. This event brings together more than 600 operators of pipelines, technology and service providers, researchers and regulators from various countries, thus constituting the most important event of this segment in Europe.

Since 2017, ARPEL is an official sponsor of this event. In the 2018 edition, Mr. Ernesto Landa of COGA made a presentation on behalf of ARPEL Industrial Cybersecurity Working Group on "Good Practices for the Diagnosis of Cybersecurity in Industrial Environments."





Climate Change Working Group

Climate change is one of the major global challenges that society is facing today. Committed to this challenge, ARPEL has been developing activities and projects on climate change and energy efficiency since 1999. Currently, the Climate Change Working Group aims to improve the capacity of understanding about the vulnerability, risks and opportunities that climate change poses for the strategic management of energy companies.

Climate Week

The Latin America and Caribbean Climate Week, organized by the United Nations Framework Convention on Climate Change (UNFCCC), was held August 20-23 in Montevideo, Uruguay.

This event brought together the main players in government, business and civil society, who are working on climate issues in the region.

ARPEL had an active participation in this event through its Climate Change Working Group, which organized together with the Latin American Energy Organization (OLADE) the workshops "Climate Risks and Adaptation: Challenges and Opportunities in the Oil and Gas Sector" and "Innovation and Greenhouse Gas Emissions Mitigation Technologies in the Oil and Gas Sector." In both workshops, discussions focused on the role of the oil and gas sector in the energy transition scenario toward low-carbon technologies and the ability to generate cost-effective and efficient solutions to reduce emissions and meet the growing demand for energy. In addition, the tool Innov@arpel was presented, and success stories presented by member companies were studied.



Meeting with United Nations

A private meeting between the Executive Secretariat of the United Nations Framework Convention on Climate Change, Ms. Patricia Espinosa, and representatives from the private sector was held during the event. ARPEL was represented at that meeting by several delegates of the Working Group (YPF, PETROAMAZONAS EP and ANCAP), the Executive Secretary, Mr. Izeusse Braga, and the Downstream Director, Ms. Irene Alfaro. The meeting served to bring both institutions together, explore synergies and collaborative activities in the region.





Report to Senior Management on Climate Change - 2018 Summary

The climate change topic is becoming increasingly important for the oil and gas industry. That is why there were a number of activities related to this subject throughout the year.

In the city of Katowice, Poland, the 24th Conference of Parties (COP) to the United Nations Framework Convention on Climate Change (UNFCCC) was held December 3-14. The Conference is the annual meeting of governments at the global level in which the policies and actions to mitigate and adapt to climate change are defined and agreed.

In this edition, progress was achieved for the implementation of the Paris Agreement. Mr. Eric Tolcach, Head of Environmental Technical Management of YPF and leader of the Climate Change Working Group, represented ARPEL during COP24 in Poland. In order to summarize the conclusions of these instances and their impacts for the strategy of companies in the oil and gas sector in Latin America and the Caribbean, the Report to Senior Management on Climate Change -2018 Summary was developed.



Climate Alerts

"Climate Alerts" were created in order to intensify the exchange of experiences, raise awareness about the impacts that climate change is having on facilities and operations of the oil and gas industry, and share lessons learned.

These are executive reports that briefly describe incidents affecting some facilities of the industry that are probably attributable to climate change. They are available in the online library (https://arpel.org/library/publications/search/). These reports share lessons learned and recommendations to avoid similar incidents in the future in other facilities and companies.

Climate Alerts



Webinars on GHG Emissions Reduction and Energy Efficiency

The Association continued the initiative to organize webinars for member companies with the purpose of sharing experiences and best practices in emissions reduction as well as financing options for investments in energy efficiency, climate change mitigation and adaptation.

In 2018, the following webinars were organized:



Green Bond Market and the Oil & Gas Industry

Date: August 8 Speaker: **Alejandra Cámara** (Consultora Génesis)



Energy Efficiency through Low-Temperature Heat Recovery

Date: November 22 Speaker: Juan Gómez Prado (KBR Technology)





Transparency and Reputation

Sustainability Reports

ARPEL REPORT ON SUSTAINABILITY REPORTING BY MEMBER COMPANIES

Sustainability reporting is a good management practice to identify and properly manage the impacts of an organization on society and the environment, and a way to strengthen the dialogue and collaboration with the various stakeholders in terms of the growing expectations of people toward the industry.

In order to encourage the development and dissemination of sustainability reports, a series of actions has been taken in the last two years, which include the creation of a web space on the subject, the endorsement and participation in the "Oil and gas industry guidance on voluntary sustainability reporting" of IPIECA-API-IOGP and the establishment of a baseline on the status of sustainability reporting by member companies.

Executive Report "Analysis of Sustainability Reporting of ARPEL Member Companies"

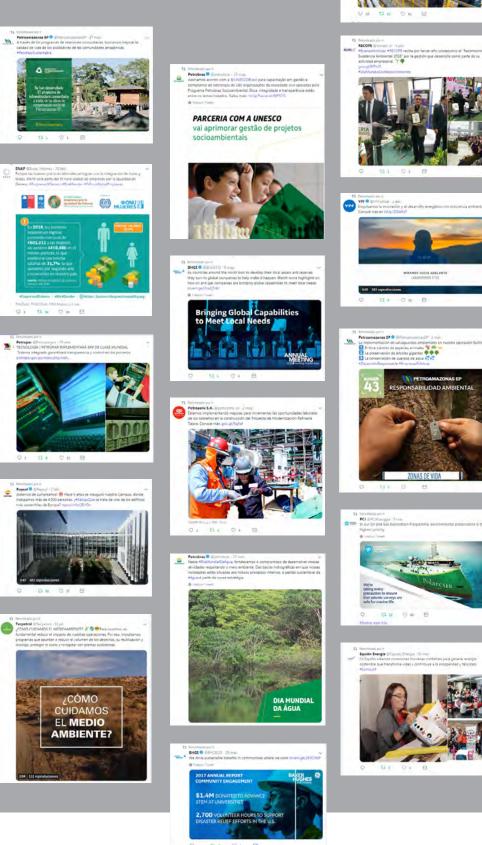
The document is available for download in the web library (https://arpel.org/library/publication/501/) and constitutes a baseline on the reporting practices of member companies in order to identify champions, gaps and ways of collaboration to improve performance in this aspect.

The research is based on information on sustainability made public by member companies on their web sites and on the analysis of the contents of these reports. Using four different criteria (coverage, methodology used in the preparation of documents, updating and external validation), a ranking is established, identifying companies with the best quality reporting and the gaps in this area.

The results of the study show that sustainability reporting and communication of initiatives in terms of sustainability are widespread practices in the industry. The conclusions of the report were presented to the Reporting Working Group of IPIECA, and the Association is working with this group in the 2020 update of this guidance.



Also, through the official Twitter account, news related to sustainability, such as programs for the preservation of the environment, promotion of socioenvironmental projects, plans for cooperation with communities, suppliers and government authorities, employment opportunities for local people, and implementation of new technologies, among other topics, are shared on a daily basis.



Chevros Chevro





Communications



Three editions of the Newsletter were published during 2018. They included the latest news on the activities developed in the different countries in the region, the launch of publications, courses, the signing of agreements, and the start-up of the first edition of the Training Program for Senior Management of ARPEL that took place in three countries: Argentina, Colombia and Mexico, among other topics.





AZONAS VISITED OUR TION Scipated in the first regional re "Climate Week," which took



In addition, the Association worked jointly with the International Oil and Gas Producers Association (IOGP) on the drafting of the second edition of the "Global Production Report" of IOGP, which was published in November with contributions from the Association in the chapter on South and Central America. The document was distributed both from IOGP and from ARPEL to main specialized media, national media and news agencies. It was also shared in social networks and on the websites of both organizations.

ECONO

1 * * *



Petru

.....

Gas: Definen licitación para capacidad de

Perspectivas para la producción de petróleo y gas en América Central y América del Sur

nda y la producción de petróleo y gas e Central y América del Sur son estables

106%

10

....

103%



Highlights of the year were also updated on the website and social networks for massive dissemination of all ARPEL activities, including events, training courses, manuals and reports executives, technical assistance instances, among others.



energia

Ĥ

٨

106%

103%

Mutual Technical Assistance

The purpose of Mutual Technical Assistance instances (ATRs) is to exchange knowledge and best practices among companies on specific topics of business management or operations.

Through different methods, such as internships, meetings, workshops or the exchange of documents, the professionals of member companies work in cooperation to assist and share their knowledge and experience, thus establishing networks of ongoing collaboration. It is the most traditional and distinctive line of work of the Association, and reflects its founding values of cooperation and integration among companies in the sector. These activities allow the transfer of operational knowledge that is only acquired through experience, thereby accelerating the learning curves and generating large financial savings for member companies. During 2018, cooperation and mutual assistance instances focused on HSE management, and operation and maintenance of refining units. Approximately 17 member companies participated in this exchange of knowledge and there was a total of 25 formal instances of cooperation.

ARPEL MEMBER COMPANIES MAY REQUEST MUTUAL ASSISTANCE THROUGH THIS LINK: https://arpel.org/mutual-technical-assistance/

TOPICS

OPERATION OF REFINING UNITS

Crossed internships:

- Alkylation units
- Engineering and works in refining units
- Coking units

Virtual instances:

- Acquisition of operational planning software
- Reforming units
- Loading and unloading of fixed bed reactors
- Amine plants
- Hydrocracker plants
- Procurement and recruitment in construction of large works
- Dry-type transformers
- Polythionic acids in hydrocrackers
- Use of RPMS
- Energy management

HSE

In-person Instances:

• Management of process safety indicators

Virtual Instances:

- Classification of process safety incidents according to API 754
- Integrity operating windows and safety of equipment and facilities
- Management of hydrocarboncontaminated sites
- SIS/SIL bypass procedures
- Regulation of fixed-source emissions
- Management of emergency response brigades
- Use of hoses in refineries
- Medical evacuations in isolated areas

Spaces for Dialogue

Latin America Gas Conference and Exhibition

The first edition of the Latin America Gas Conference and Exhibition was held in October. The event took place in Mexico City and brought together approximately 150 professionals of the gas industry from the private sector and government and international agencies in order to discuss the reality of the gas sector in Latin America and the Caribbean and investment opportunities for its growth and development.



The Conference was co-organized with the International Gas Union (IGU), under the cooperation agreement signed in 2017, and delivered by EnergyNet, a global company based in the United Kingdom. The initiative is part of a series of regional conferences whose objective is the development of the sector by identifying investment opportunities and bringing the private and the public sector closer together. On the occasion of the event, the Advisory Board, consisting of major natural gas companies at the global and regional level, held a meeting where the strategy and the main lines of action for the coming years were set. BP, Engie, Naturgy, Petrobras, Repsol, Shell and Total, among others, are part of the group that is leading these actions.

On the other hand, the Meeting of Hydrocarbons Agencies was also held. It was sponsored by the CNH and served as a space for dialogue, exchange and understanding among state institutions responsible for the regulation, promotion, and bidding and contracts in the oil and gas sector.

The main issues discussed include the strengths of natural gas in the scenario of energy transition, the heterogeneity and investment opportunities offered by the different markets and sub-regions in Latin America and the Caribbean, the need to create a favorable investment climate and publicprivate solutions for the development of the necessary infrastructure, financing options and the role of multilateral credit agencies, the importance of rational discussions on fracking, based on the evidence and the transformation of companies to face the challenges that climate change and energy transition pose to the business.

The second edition of the event will take place in the second semester of 2019.





Institutional Representation at Industry Events



World Gas Conference (WGC 2018)

The World Gas Conference, organized by the International Gas Union (IGU), is the most important event of the natural gas industry at the international level, and is held every three years.

The Executive Secretary of the Association, Mr. Izeusse Braga, participated in this conference which took place June 25-29 in Washington, D.C., United States. As part of the event, the Advisory Board of the Latin America Gas Conference and Exhibition (LGC), the Latin American branch of the World Gas Conference, held its first meeting, whose first edition was held in October 2018.

In turn, it was an important forum to enhance the cooperation between ARPEL and IGU for the development of the gas sector in the region.



Within the framework of the III Energy Week, an event organized by OLADE (Latin American Energy Organization), held December 10-14 in Montevideo, Uruguay, ARPEL co-organized with the Ministry of Industry, Energy and Mining of Uruguay (MIEM), the Panel "Good Environmental and Social Practices in Hydrocarbon Exploration and Production." The activity, held on December 11, was attended by Ms. Arianna Spinelli, Director of Hydrocarbons, National Directorate of Energy of MIEM, Ms. Marta Jara, President of ANCAP, who spoke on "The Experience of Hydrocarbon Exploration in Uruguay," Mr. Martín Kaindl, Director of Institutional Relations and Administration of the Argentine Institute of Oil and Gas (IAPG), who spoke on "The Importance of Communication in the Development of Unconventional Resources," and Ms. Sandra Martínez of Pluspetrol, Chairperson of ARPEL Social Responsibility Committee, who addressed the "Social and Environmental Aspects for the Sustainable Exploitation of Hydrocarbons."



Ms. Rosario Lucas of the Ministry of Housing, Land Use Planning and Environment, and Mr. Miguel Moyano, Upstream Director of ARPEL, participated as commentators. In addition, Ms. Alicia Torres, Environmental Adviser of the National Directorate of Energy of MIEM, participated as moderator of the panel.

First Oil and Gas Summit of Colombia

The First Oil and Gas Summit of Colombia was held November 14-16. The event was organized by the Colombian Oil and Gas Association (ACP), the Colombian Chamber of Oil Goods and Services (CAMPETROL), the Colombian Association of Oil Engineers (ACIPET), the Colombian Association of Oil Geologists and Geophysicists (ACGGP) the Colombian Association of Engineers (ACIEM), chapter Cundinamarca. It was dedicated to the celebration of 100 years of the oil industry in Colombia and focused on the contribution of the oil and gas industry to the Colombian economy and its prospects for the future.



The Executive Secretary of the Association, Mr. Izeusse Braga, participated in the academic agenda in the session "100 Years of the Industry, International Vision: Industry Presence in Other Countries," which he shared with Mr. Humberto Calderón, former Minister of Mines and Energy of Venezuela and former President of the Organization of Petroleum Exporting Countries (OPEC), and Mr. Gunnar Sjogren, Project Manager of the Norwegian Petroleum Directorate. The ninth edition of INGEPET 2018 was held October 1-4 in Lima, Peru, with the institutional support of ARPEL. The event, organized by Perupetro, is the meeting point for the industry in Peru.

As part of it, Ms. Irene Alfaro made a presentation on "The Contribution of ARPEL and the Oil and Gas Sector to Combat Climate Change," with the aim of disseminating the mitigation, adaptation and transformation actions that the industry is taking to face climate change.







1st International Forum on Gas, Petrochemicals and Green Fuels, Bolivia 2018

The 1st International Forum of Gas, Petrochemicals and Green Fuels was organized jointly by the Government of Bolivia, the national oil and gas company YPFB and the Bolivian Chamber of Hydrocarbons and Energy (CBHE). It was held August 28-31 in Santa Cruz de la Sierra and was an important forum for discussion of the industry trends in the country and the region.

The Executive Secretary of ARPEL, Mr. Izeusse Braga, participated as a speaker at the closing panel "Global Energy Market and its Challenges," presenting the outlook for natural gas in Latin America. The Minister of Energy of the Plurinational State of Bolivia, Mr. Luis Alberto Sánchez, acted as moderator of the panel.



Participation in events

During the year, ARPEL participated on behalf of the industry in different important events at the regional and international level:



2018 Courses

"Evaluation of Programs to Address Oil Spills" February 15-16 Bogotá, Colombia

"Accreditation Program on Pipeline Integrity Management - Module I: External Corrosion" February 19-24

Lurín, Peru

"Introduction to Cybersecurity"

April 24-27 Virtual course

"Relations with Communities Management" April 17-19 Santiago, Chile

"Business and Human Rights In the Hydrocarbon Sector" May 7-June 8 Virtual course

Senior Management Program "Module I: Global Factors and their Effects in the Upstream Sector in Latin America and the Caribbean" June 11-13

Buenos Aires and Neuquén, Argentina

"Vulnerability Analysis and Cyber Risk Assessment in New and Existing Industrial Systems" July 10-12 Virtual course

Senior Management Program "Module II: Downstream Sector, the New Role of Refining in a World of Changing Demand"

July 24-26 Cartagena de Indias, Colombia

Senior Management Program "Module III: The Role of Gas, Coal and Renewables as Source of Energy in an Increasingly Decarbonized World"

November 13-15 Monterrey, Mexico

"Business and Human Rights In the Hydrocarbon Sector"

November 15 to December 15 Virtual course

New Publications during 2018

Benchmarking

Benchmarking Report on Environmental Performance in the Oil and Gas Industry in Latin America and the Caribbean (2017 data) Mttps://arpel.org/library/publication/507/

Benchmarking Report on Environmental Performance in the Oil and Gas Industry in Latin America and the Caribbean (2016 data)

Nttps://arpel.org/library/publication/499/

Benchmarking Report on Safety in the Oil and Gas Industry in Latin America and the Caribbean (2017 data) https://arpel.org/library/publication/504/

Benchmarking Report on Process Safety Incidents in the Oil and Gas in Latin America and the Caribbean https://arpel.org/library/publication/502/

Best Practices

Process Safety Self-Assessment Tool and Methodology Methodology https://arpel.org/library/publication/503/

I³ Model. Attracting the Interest of the Board of Directors in Cybersecurity
 https://arpel.org/library/publication/505/

Executive Reports

Analysis of Sustainability Reporting of ARPEL Member Companies

Attps://arpel.org/library/publication/501/

Delegates to Technical Committees and Working Groups March, 2019

Health, Safety and Environment Committee (CASYSIA)

Contact person in ARPEL: Pablo Ferragut pferragut@arpel.org.uy Ph. (598) 2623-6993 ext. 133 **Delegates:** Mariela Fresia, Rosario Martino - ANCAP; Kinnesh Dalal - CHEVRON; Antonio Meza - COGA; Tania Pérez Delgado, Isis Dávila - CUPET; Leonardo Canales, Christian Urrea - ENAP; Walter Calle - EP PETROECUADOR; Juan Navarro -HONEYWELL; Carlos Henrique Abreu Mendes - IBP; Genebelin Valbuena - KBR TECHNOLOGY; Ivan Eberle, Diego Gómez - OLDELVAL; Paul Schuler - OSRL; Federico Caldora - PAN AMERICAN ENERGY; Che Stewart - PCJ; Luis Fernando Betancourt Sánchez - PEMEX; Blanca Vanessa Estrella - PETROAMAZONAS; Luiz Eduardo Valente - PETROBRAS; Cristian Cuandu - PETROPAR; Hugo Leguizamón Ruiz, Walter López -PETROPAR; Víctor Huarcaya Palomino, Laura Guevara Cordero - PETROPERU; Mary Stella Corsaro - PLUSPETROL; Jorge Pastor Masís, Álvaro Ramírez Alfaro - RECOPE; Alex Rivadeneira - REPSOL; Andre Naslausky - Schlumberger; Steve Mannes, Ivan Defares - STAATSOLIE; Stephen Wharton, Federico Sameghini, Carlos Videla - TECPETROL; Alfonso Tomás - TEMA; Gustavo Correa - YPF; Miguel Ángel Rojas Castro, Gamal Amonzabel - YPFB; Walter Nogales Vaca - YPFB Transporte

Exploration and Production Committee (AE&PC)

Contact person in ARPEL: Miguel Moyano mmoyano@arpel.org.uy Ph. (598) 2623-6993 ext. 124 **Delegates:** Héctor De Santa Ana, Santiago Ferro - ANCAP; Mariano Gargiulo, Ángel L. López - BHGE; Sandra Coleman - BHP BILLITON PETROLEUM; Javier La Rosa -CHEVRON; Juan Cristóbal Hernández - CUPET; Francisco Díaz, Livio Gismondi - ENAP; Marcos Veiga - HONEYWELL; Ricardo Bedregal - IHS; Andre Berardi - KBR; Brian Richardson - PCJ; Faustino A. Fuentes Nucamendi, Edgar A. Meza Pérez - PEMEX; Lenin Pozo - PETROAMAZONAS EP; Marcos Vallerio Gonçalves Galvão - PETROBRAS; Andrés Peralta - PETROPAR; Rodolfo Escobar Cáceres - PETROPERU; Trey Meckel, Sebastian Leoni - PLUSPETROL; Evandro Correa, Carlos Saavedra - REPSOL; Gabriela Prete - SCHLUMBERGER; Humberto Ribera - SPECTRUM; Henk Chin A Lien, R. Bissumbhar, Amresh Mohan - STAATSOLIE; Raúl Tuvío - TECPETROL; Iván Rivas Gutiérrez, Manel Fernández - TEMA; Raul Belkenoff, Mario Grinberg - YPF

Pipelines and Terminals Committee (PITECO)

Contact person in ARPEL: Irene Alfaro ialfaro@arpel.org.uy Ph. (598) 2623-6993 ext. 139 **Delegates:** Raúl Sampedro Farías - ANCAP; Omar Pasquinelli - AXION ENERGY; Ruben Díaz Schotborgh - CHEVRON; Antonio Meza Solano, Edilberto Amaya - COGA; Riyaguel Capote Rodríguez - CUPET; Edmundo Piraino; Juan Pablo Rhodes - ENAP; Alfonso Jiménez López - EP PETROECUADOR; Carla Pereira Imbroisi - IBP; Gustavo Galambos - HONEYWELL; Raúl Guio - IHS MARKIT; Guillermo Rodríguez, Andre Berardi - KBR TECHNOLOGY; Adrián Merida, Gastón Gader - OLDELVAL; Kelvin Salmon - PCJ; Eduardo Gallegos Barcenas - PEMEX; Paulo Penchiná, Ricardo Dias De Souza, Luciano Maldonado García, Newton Camelo De Castro - PETROBRAS; Hugo Leguizamón Ruiz, Walter López - PETROPAR; Dino Valdiviezo Albán, Rómulo Silva Ángulo - PETROPERU; Felipe Henao Vargas - PLUSPETROL; Roy Vargas Carranza, Javier Soto Castro - RECOPE; Luis Vasquez Madueño - REPSOL; Albert Tasias Francí -TEMA; Arturo Heinke - YPF; Wilson Felipe Zelaya - YPFB

Refining and Fuels Committee (RefCom)

Contact person in ARPEL: Ricardo Buyatti rbuyatti@arpel.org.uy Ph. (598) 2623-6993 ext. 139 **Delegates:** Mauro De Camilli, Daniel Cebey, Rosario Martino, Nikolai Guchín - ANCAP; Luis Fredes - AXION ENERGY; Hanoi Rivero Go - CUPET; Patricio Estay, Patricio Farfán - ENAP; Sandra N. Bravo - EP PETROECUADOR; Giovanni Spinelli - HONEYWELL; Daniel M. Rellán - IAPG; Felipe Perez - IHS MARKIT; Artemis Kostareli - IPIECA; Darío Guzmán, Ignacio Bincaz - KBR TECHNOLOGY; Brian Case - PCJ; Gustavo Pérez Navarro - PETROPERU; Gerardo León Castillo - PETROPERU; Sergio Cavallín -PLUSPETROL; Henry Arias Jiménez, Oscar Acuña Céspedes - RECOPE; Arsedio Carbajal González - REPSOL; Manel Fernández - TEMA; Gabriel Grzona - YPF

Gas and Energy Committee (AGEC)

Contact person in ARPEL: Pablo Ferragut pferragut@arpel.org.uy Ph. (598) 2623-6993 ext. 133 **Delegates:** Rubén Schiavo - ANCAP; Daniel Trapani, Antonio Meza - COGA; Roberto Suárez - CUPET; Oscar Santibañez - ENAP; Ernesto Páez - EP PETROECUADOR; Jorge Delmonte - IBP; Marcelo Guedes - HONEYWELL; Roberto Ferreira da Cunha -IHS MARKIT; Ignacio Bincaz, Darío Guzmán - KBR TECHNOLOGY; Brian Richardson - PCJ; Álvaro Tupiassu, Rafael Resende Pertusier - PETROBRAS; Andrés Peralta, Raúl Silva - PETROPAR; José Hidalgo Quevedo, Ricardo Zúñiga Corso - PETROPERU; Adrián Vila, Pablo Campana - PLUSPETROL; Naresh Khanna, Oscar Acuña - RECOPE; Jorge Gómez de la Fuente, Andrés Sannazzaro - REPSOL; Juan Marcelo Antelo CBH; Albert Tasias Francí - TEMA; Alejandro Fernández, Patricio Da Re - YPF; Bernardo Urquidi, María Gabriela Guzmán, Virginia Isabel Rendón - YPFB

Social Responsibility Committee (SRC)

Contact person in ARPEL: Rosario Trigo rtrigo@arpel.org.uy Ph. (598) 2623-6993 ext. 137

Delegates: Soledad Rodríguez - ANCAP; Alejandro Carreño García - CUPET; Gabriel Méndez - ENAP; Francisco Jaramillo; David Ioannucci - HONEYWELL; Martín L. Kaindl - IAPG; Carlos Victal - IBP; Sofía Carballo, Francisco Rol, Sergio Viñals - OLDELVAL; Ana Paula Grether - PETROBRAS; Norma Caballero - PETROPAR; Beatriz Alva Hart, Eleonora León, León, Juan Martín Angulo, Clara Indacochea, Carla Santa Cruz -PETROPERU; Sandra Martínez - PLUSPETROL; Shionny Porras Moya, Ileana Herrera Arias - RECOPE; Carlos Monjas Serrano, Diego Fernando Astudillo Paredes - REPSOL; Darwin Vega - TECPETROL; Anabel Perrone, Anabella Lopez Clapier - YPF; Katia Vega - YPFB Chaco

Human Talent and Knowledge Management Committee (HTKMC)

Contact person in ARPEL: Irene Alfaro

ialfaro@arpel.org.uy Ph. (598) 2623-6993 ext. 139 **Delegates:** Hubert Arbildi, Gustavo Della Nave - ANCAP; Tania Pérez Delgado -CUPET; José Simon - HONEYWELL; Oscar Javier Guerra Perdomo - ICP; Claudia Marin, Luz María Torm - ENAP; Julio César Moscoso - EP-PETROECUADOR; Patrícia Scott - IBP; Jaime Chamorro - PETROAMAZONAS EP; Beatriz Hallak - PETROBRAS; Norma Caballero - PETROPAR; Fernando Martín Cruz, Celso García Flores -PETROPERU; María Soledad Colomar - PLUSPETROL; Maribel Solano - RECOPE; Pablo López Romano - REPSOL; Fernando Bocchicchio - SCHLUMBERGER; Julieta Vieytes, Pablo Ledesma - TECPETROL; Florencia Tiscornia, Andrés Mosteiro - YPF

Communications Working Group

Contact person in ARPEL: María Eugenia Guzmán meguzman@arpel.org.uy Ph. (598) 2623-6993 ext. 135 **Delegates:** Mariela Fresia, Susana Pérez - ANCAP; Agustín Agraz - AXION ENERGY; Tania Pérez Delgado - CUPET; Gabriel Méndez, Lorena Rubio - ENAP; Marco Villamar -EP PETROECUADOR; Pedro Ruiz - HONEYWELL; Martín Kaindl - IAPG; Sofía Carballo - OLDELVAL; Alberto Padilla - PETROAMAZONAS EP; Juan Borrelli - PETROBRAS; Felipe Oddone - PETROPAR; Carla Santa Cruz - PETROPERU; Segundo Marenco -PLUSPETROL; Shionny Porras Moya - RECOPE; Mauricio Mariaca - REPSOL; Anabel Perrone - YPF

Climate Change Working Group

Contact person in ARPEL: Irene Alfaro ialfaro@arpel.org.uy Ph. (598) 2623-6993 ext. 139 **Delegates:** Rosario Martino - ANCAP; Arthur Lee - CHEVRON; Tania Pérez Delgado, Isis Dávila - CUPET; Cristian Núñez, Fabián Guerrero Leiva - ENAP; Henry Ojeda Hidalgo, Andrea M. Cordova - EP PETROECUADOR; Ana Cristina Sánchez Thorin; Fernando San Martín - HONEYWELL; Juan Gómez Prado, Dario Guzman - KBR TECHNOLOGY; Ivan Eberle, Maximiliano Biancucci - OLDELVAL; Paulina Serrano Trespalacios - PEMEX; David Neira, PETROAMAZONAS EP; Roberto Cabrera, PETROPAR; Juan Gallarday Pretto - PETROPERU; Stephen Wharton - TECPETROL; Eric Tolcach, Federico Paloma - YPF

Industrial Cybersecurity Working Group

Contact person in ARPEL: Hernán Vázquez hvazquez@arpel.org.uy Ph. (598) 2623-6993 ext. 130 **Delegates:** Andrea Parada, Ricardo Cardona - ANCAP; José Valiente Pérez - CCI; Neptalí Mayorga, Ernesto Landa - COGA; Luis Recalde - EP PETROECUADOR; Mariano Cuadrelli - HONEYWELL; Alejandro Méndez - OLDELVAL; Efrain Sanchez Cano - PETROBRAS; Javier Espinola - PETROPAR; María Victoria Morrone - PLUSPETROL; Fernando Zúñiga, Javier Pedro Buzzone, Rubén Varela - TECPETROL; Brian O'Durnin, Pablo Cattaneo, Gerardo González – YPF



2018 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 a high percentage of the upstream and downstream activities in Latin America and the Caribbean and includes national and international operating companies, providers of technology, goods and services for the value chain, and national and international sector institutions.



Regional Headquarters: Av. Luis A. de Herrera 1248. WTC. Tower 2. Floor 7. Of. 717. 11300 Montevideo, Uruguay Ph: (+598) 2623-6993 | info@arpel.org.uy

www.arpel.org