

2017 ARPEL Annual Report

March 2018

ARPEL PUBLICATION N° IN01-2018



INSTITUTIONAL

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Governance

Board of Directors

Chairman:

Carlos Colo (YPF)

Vice Chairmen:

Benito Piñeiro (ANCAP)

Roberto Díaz (PLUSPETROL)

Members

João Araújo Figueira (PETROBRAS)

Luis Suárez Carlo (PETROPERU)

Sara Salazar (RECOPE)

María Isabel de Luis (REPSOL)

Humberto Ribera (SPECTRUM)

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

BAKER HUGHES (GE)
HONEYWELL-UOP
IHS-MARKIT
KBR TECHNOLOGY
SCHLUMBERGER
SPECTRUM
TEMA

Alliances

ALADI
CAF
CEPAL
OEA
OLADE

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

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



Letter of the Executive Secretary

I would like first to express my gratitude to the representatives and delegates of member companies and institutions, as well as the Secretariat staff for their work during 2017, which has allowed us to continue moving forward in all lines of action envisaged in the Strategic Plan and fulfill ARPEL's mission of promoting integration, growth, operational and management excellence, and the effective socio-environmental performance.

Last year was the third of the Strategic Plan for 2015-2019 which focused our efforts on improving performance standards, climate change, energy integration, regulation, transparency and the generation of spaces for dialogue.

We would like to highlight new instances of technical assistance to our members in which we have addressed emerging issues of particular interest to the industry, promoting the development of benchmarking studies on process safety, human talent, pipelines and terminals, and sustainability reports that allow us to identify gaps, transfer knowledge and accelerate learning curves.

At the end of 2017, the virtual platform for innovation and technology, Innov@arpel, was launched. It was created with the objective of promoting interaction among technology suppliers, R&D centers, universities and operating companies to facilitate the development of technological solutions to improve efficiency and competitiveness.

On the other hand, with the aim of strengthening corporate governance in the new energy paradigm, the Training Program for Senior Management was developed. It is designed for the new leaders of the industry, and its first edition will be delivered in 2018.

With our continued commitment to being a vehicle for relationships in the regional industry and representing the sector before different stakeholders, last year we signed three new cooperation agreements with the International Gas Union (IGU), the Ibero-American Program of Science and Technology for Development (CYTED), and the Hydrocarbon Exploration and Production Companies Association of Uruguay (ACEPH).

ARPEL has been confirmed as special guest in the Energy Transitions Working Group of the G20, Argentina's Presidency 2018, and as a member of the Energy, Resource Efficiency and Sustainability Task Force of the B20.

We close a fruitful year, and we feel even more committed to fulfilling our role to support our members in their growth, with emphasis on technical assistance and innovation.

Mr. Jorge Ciacciarelli
Executive Secretary

Executive Summary

Membership

Affiliations:

- OLDELVAL
- HONEYWELL-UOP
- BAKER HUGHES (GE)

Disaffiliations:

- PSRG

New Cooperation Agreements

- IGU (International Gas Union)
- ACEPH (Hydrocarbon Exploration and Production Companies Association of Uruguay)
- CYTED (Ibero-American Program of Science and Technology for Development)

Publications

Sixteen new publications were issued, including three executive reports on issues relevant to the sector, six reports on conclusions of exchange of experience events, one manual on best practices, one white paper, four benchmarking studies, and one institutional document on the progress made in terms of sustainability.

Events

- **Workshop “Assessment of Psychosocial Risk Factors”** (March 21-23, Bogotá, Colombia)
- **Oil and Gas Regional Conference ARPEL 2017** (April 25-27, Punta del Este, Uruguay)
- **Workshop “Assessment of the Maturity of the Cybersecurity Process in Industrial Organizations”** (May 31, Buenos Aires, Argentina)
- **Workshop “Best Practices in the Operation and Maintenance of Coker Units”** (June 14-16, Cartagena, Colombia)
- **Workshop “Challenges in the Implementation of Process Safety in Oil and Gas Companies”** (July 13, Buenos Aires, Argentina)
- **International Pipeline Geotechnical Conference (IPG-ARPEL/ASME 2017)** - Third Edition (July 25-27, Lima, Peru)
- **Seminar “Strategic Route of Corporate Cybersecurity”** (August 2, Buenos Aires, Argentina)
- **Workshop “Climate Risks and Adaptation: Challenges and Opportunities in the Oil and Gas Sector”** (September 6-7, Buenos Aires, Argentina)
- **Seminar “Management of Consumption of Psychoactive Substances in Oil and Gas Companies”** (September 20-21, Buenos Aires, Argentina)
- **Workshop “Exchange of Best Practices in Plant Turnarounds”** (December 13-15, Viña del Mar, Chile)
- **Seminar “Natural Gas and LNG Markets”** (December 5, Buenos Aires, Argentina)

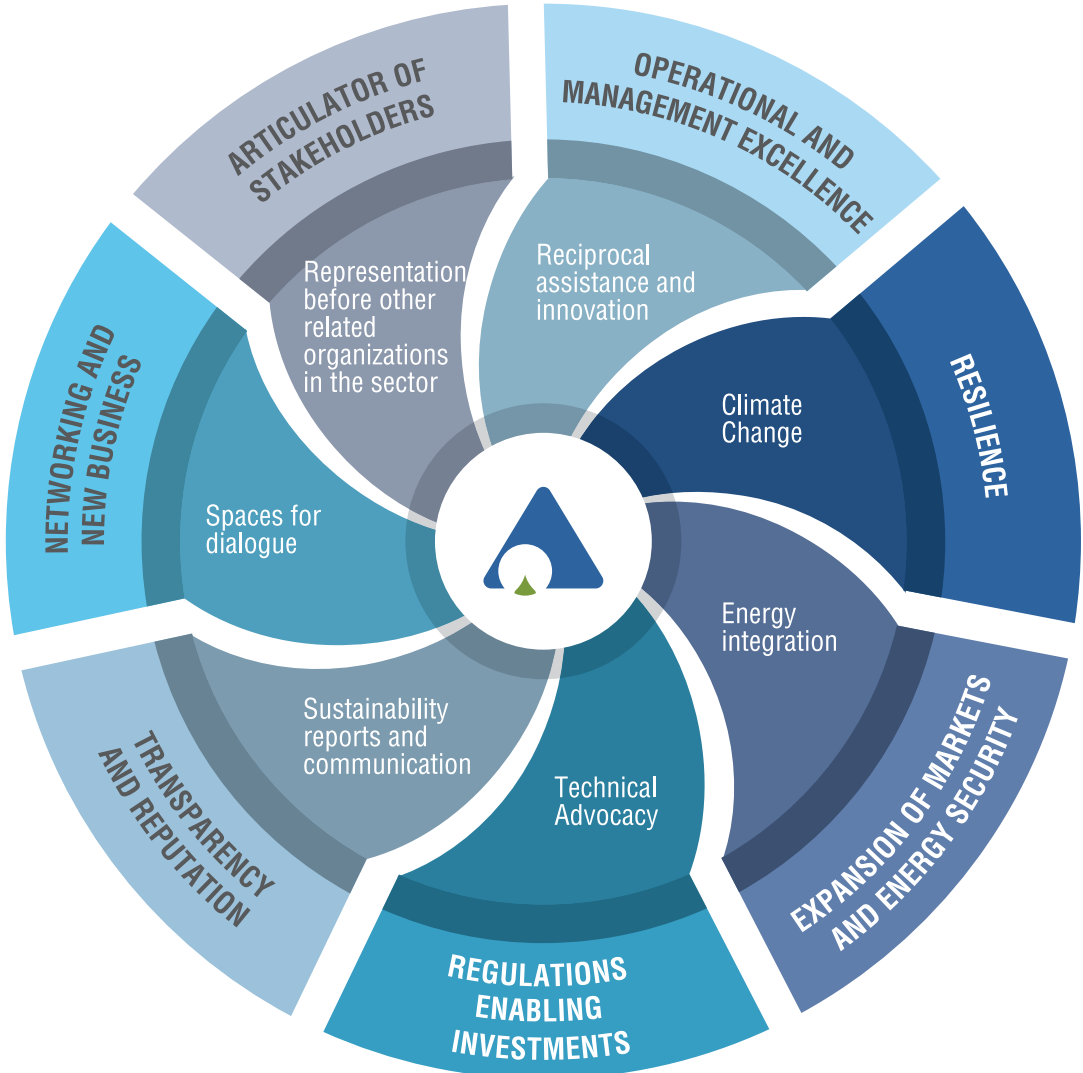
Courses

Eight in-person and virtual training courses were conducted to more than 180 professionals from all over the region. The issue of industrial cybersecurity was incorporated into the portfolio of courses, and new editions of the trainings in pipeline integrity management, evaluation of programs to address oil spills (RETOS™ tool) and relations with indigenous peoples were conducted.

Webinars

With the aim of intensifying the exchange of experiences and knowledge among member companies, several webinars were organized throughout the year on various subjects: corporate social responsibility and management of contractors; labor relations; development and verification of inventories of greenhouse gas emissions; experiences and projects on greenhouse gas emissions reduction; and funding opportunities in climate change (along with the World Bank and the Inter-American Development Bank).

Strategic guidelines for sustainable energy development



Technical Committees and Working Groups

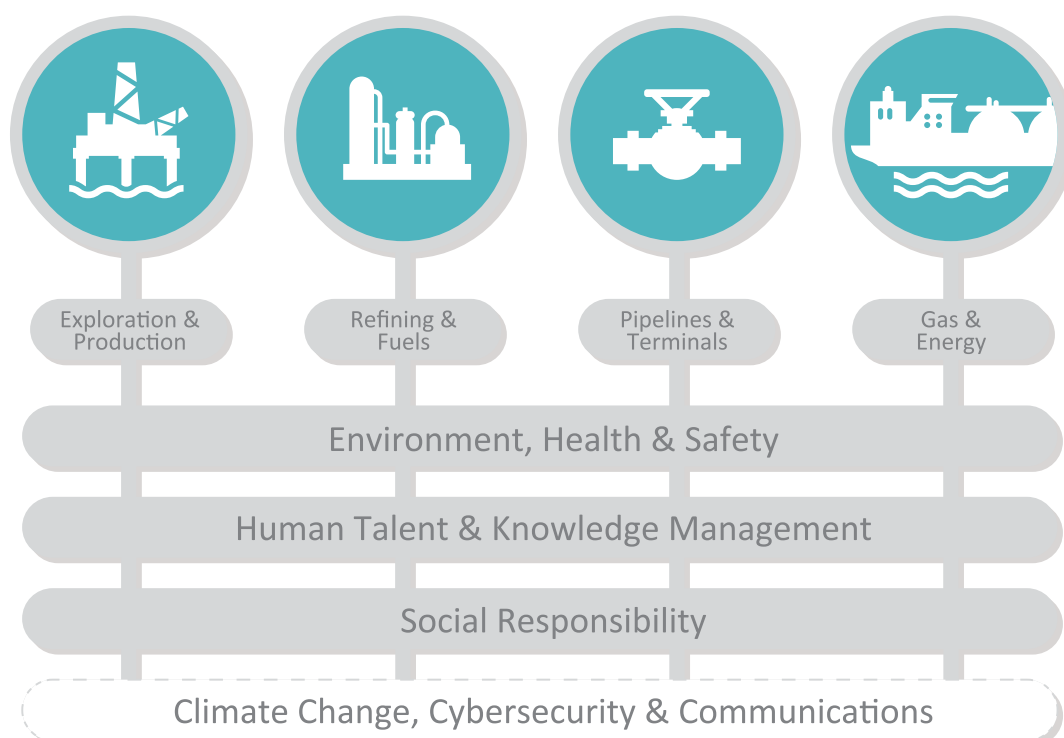
Expert delegates of member companies and partner institutions, and other executives of the region work in cooperation in Technical Committees and Working Groups, as the engine of the Association to take forward its strategic lines.

The Committees and Groups work on different subjects:

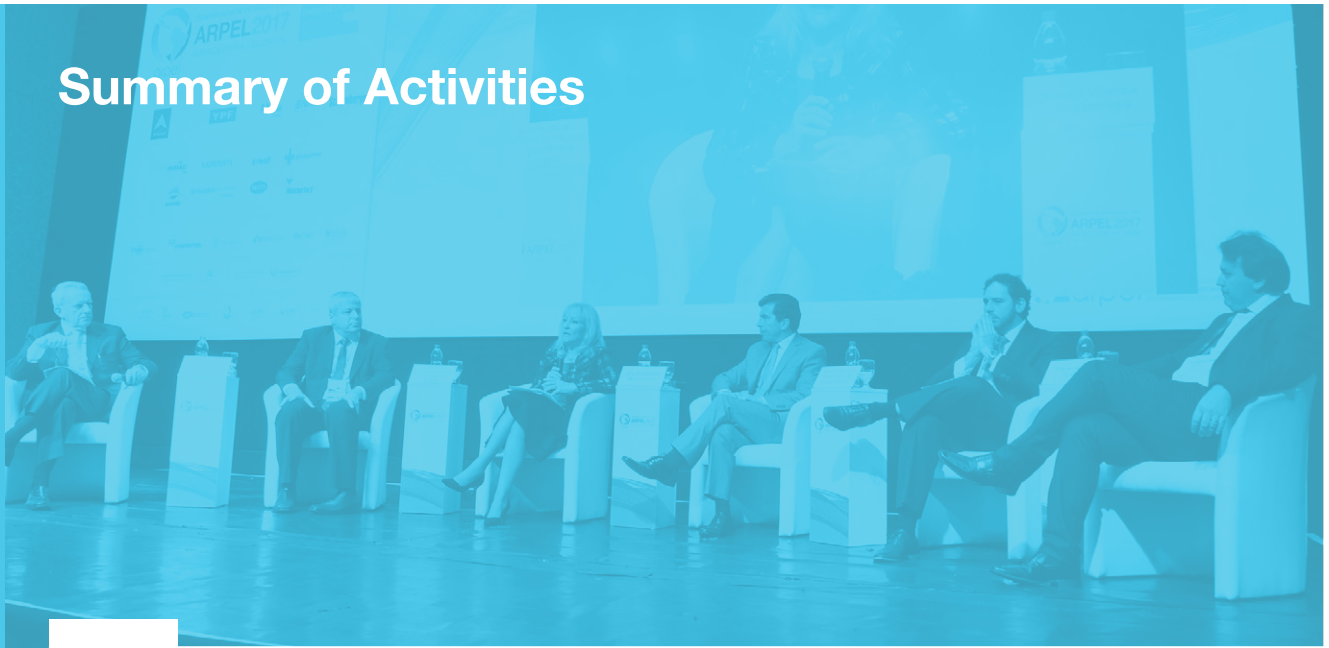
- **EXPLORATION AND PRODUCTION**
- **PIPELINES AND TERMINALS**
- **REFINING AND FUELS**
- **GAS AND ENERGY**
- **HEALTH, SAFETY AND ENVIRONMENT**
- **SOCIAL RESPONSIBILITY**
- **HUMAN TALENT AND KNOWLEDGE MANAGEMENT**
- **CYBERSECURITY**
- **COMMUNICATIONS**
- **CLIMATE CHANGE**

Their main assignments include:

- **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 of management and performance



Summary of Activities



Spaces for Dialogue

Networking and New Business

Oil and Gas Conference ARPEL 2017

The major event of the Association was held April 25-27 in Punta del Este, Uruguay, and brought together more than 300 senior executives and officials of the energy sector of the region. Under the motto **“New Energy Reality, Challenges and Opportunities,”** participants discussed during three days the new situation of the oil industry and the prospects for the coming years. Among the main conclusions, emphasis

was placed on the anticipation of a new scenario of relatively low prices compared with the last cycle, but now more stable, which opens great opportunities for the region. In a climate of renewed optimism, also highlighted was the need to focus on corporate and operational efficiency to gain in competitiveness, and the need for a long-term strategic vision in a scenario of energy transition and climate change.



In the framework of this event, a new **Forum of Hydrocarbons Agencies** was held. This is a key meeting for the dissemination of investment opportunities, bidding rounds and contract models available in each country in the region before a select group of executives of major operating companies. In addition, the **“Fifth 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” was held as a space for exchange to attract investments in a highly competitive international scenario. Also in the framework of the Conference, a new edition of the **Lunch of CEOs and Senior Executives** brought together more than 20 representatives of member companies, forming a valuable space for dialogue for decision-makers of the major oil companies operating in Latin America and the Caribbean.





Reciprocal Assistance and Innovation

Operational and
Management Excellence



INNOVATION

Strong impetus to innovation as an increasingly significant aspect for the competitiveness and resilience of the sector





www.innovarapel.org

The web corporate platform (**www.innovarapel.org**) was developed with the purpose of promoting interaction among technology suppliers such as R&D centers, universities, service providers, and end users seeking innovative technology solutions such as the companies of the oil and gas sector.

The platform, whose development was sponsored by Schlumberger and Spectrum, offers the possibility of carrying out joint innovation projects, technology partnerships to scale or to finance projects, exchanging experiences and knowledge, as well as obtaining references of innovative technologies already implemented by other users, thus accelerating the learning curve.

Innov@arpel brings together information on technological advances in one place, while creating a community of professionals in the energy sector focusing on innovation. The platform was launched November 24 for members in Montevideo and was attended by other three simultaneous connection points in Buenos Aires, Rio de Janeiro and Mexico City. The event was attended by authorities of ANCAP, Pluspetrol, Spectrum, Schlumberger, YPF, OAS (Organization of American States), CYTED (Ibero-American Program of Science and Technology for Development), the National Energy Authority of Uruguay, YPF, Y-TEC and IMP (Mexican Petroleum Institute). The official launch to the public will be in April 2018.



We connect professionals in the energy sector, researchers and entrepreneurs in order to boost growth of the industry through the development of new technologies.

Welcome, integration. Welcome, innovation.



PITECO

Pipelines and Terminals Committee

The Pipelines and Terminals Committee continued to develop its work in the strategic line of reciprocal assistance, with a focus on assets integrity, capacity building and benchmarking on operational indicators.

Third edition of the International Pipeline Geotechnical Conference (IPG) co-organized with ASME

The event held July 24-26 in Lima, Peru, was co-organized by ARPEL and the American Society of Mechanical Engineers (ASME) and brought together more than 100 professionals from 12 countries. The IPG is an international technical event to promote knowledge sharing, technological progress, and international cooperation for advancing the management of natural forces impacting pipelines with the intent of protecting the public, environment and infrastructure assets in view of a very specific problem in the region. The agenda included the presentation of 23 technical papers and a panel that discussed the evolution in the field of geotechnics of pipelines in the region during the past five years. On July 24, courses were conducted on soil mechanics for stress analysis and design of pipelines; forces of nature in Pipeline Integrity Management; and applications of LiDAR for geohazard inventory and characterization. The next IPG Conference where ARPEL and ASME will again work together will be held in Buenos Aires, Argentina, in 2019.



New Guidelines on Best Practices

During the year, progress was made in the development of four new guidelines on best practices to be published in 2018. They address aspects of pipeline integrity that require a high level of complexity in its management, and on which there are great comparative advantages for the collaborative approach among the pipeline companies in the region.

- **Illegal Taps:** This is a growing threat in all countries in the region without exception, and this practice has affected the operation of companies and income, jeopardizing infrastructures, and consequently, human lives and the environment.
- **Execution of Civil and Geotechnical Works in Pipelines:** Continuing with the work being consistently developed in the management of geohazards, progress was made in the compilation of best practices on the subject in the second guidelines.

- **Stress Corrosion Cracking (SCC):** This is another growing threat in the region due to the difficulty involved in its detection, diagnosis and mitigation. The guidelines will consolidate the knowledge and experience of the leading companies in the region.
- **In-Line Inspection Process (ILI):** As one of the main ways to monitor pipeline integrity, the guidelines will provide support for a correct selection of the technologies to be used, evaluating the different threats, risks, technical proposals and existing regulations which allow making an optimal contract and execution of the service.

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

The first guidelines of best practices on the subject developed by the working group were published in 2016, becoming a global document of reference for the sector in the region. During 2017, several activities of dissemination and implementation were carried out, with emphasis on the presentations made during the IPG and Rio Pipeline in order to maximize the use of the document and to position ARPEL as the leader on this subject at the global level.

Terminal Integrity

Cross-checks

In October and November two new editions of the classic cross-checks of terminals were performed. The main objective of this activity is to identify best practices and opportunities for improvement of oil terminals through cross-visits between high-level experts of companies and the implementation of checklists established in **ARPEL Manual for Terminal Operation Management**.

The ninth cross-check of terminals was performed October 9-13 at the YPF San Lorenzo Complex. In addition to the host team of YPF, experts of Transpetro participated in the evaluation team, while professionals of Pluspetrol and Honeywell participated as observers.



Likewise, the tenth cross-check was carried out at the Transpetro Terminal of the Guanabara Bay. It was performed November 27-December 1. This time, technicians of YPF were the evaluators of the Transpetro complex, while Pluspetrol participated as observer.

Cross-checks have been carried out continuously since 2013 in terminals in Colombia, Peru, Ecuador, Bolivia, Chile, Paraguay, Brazil and Argentina, creating spaces for high-quality technical exchange, highly valued by participating professionals, which have resulted in tangible improvements to the facilities.



Joint Work with OCIMF

Oil Companies International Marine Forum

The Oil Companies International Marine Forum (OCIMF) is a voluntary association of oil companies that provides experience in the shipment and safe and environmentally sound operation of oil tankers and marine terminals. The current membership of OCIMF comprises 111 companies around the world, thus being the most representative forum of the sector on this topic at the international level.

Continuing with the cooperation between both organizations within the framework of the OCIMF Marine Terminal Information System (MTIS), the information of 13 new terminals corresponding to member companies was entered during the year. This project seeks to harmonize and make available technical-operational information of oil marine terminals around the world, facilitating and making the operation of vessels safer. Work will continue in 2018. In addition, other activities with this organization are planned.

Training

Training on Pipeline Integrity Management - Forces of nature, operational errors and third party actions.

Professionals of COGA, ENAP, Oldelval, Petroperú, Pluspetrol, YPF and YPFB Transporte participated in a new edition of the course on Pipeline Integrity Management devoted to “Forces of nature, operational errors and third party actions” (Module III), which was developed in the facilities of YPFB Transporte in Santa Cruz de la Sierra.

This training was focused on the identification, diagnosis and application of prevention, control and mitigation systems to any failure produced by external geodynamics processes (landslides, erosion, subsidence of the bottom of river channels, and margins in water currents, etc.) or internal geodynamics processes (volcanic activity, seismicity). In addition, case studies of operating errors, their failure modes, effects, immediate causes, and control and mitigation actions were studied. As regards third party actions, cases of perforation, ruptures, scratches and dents in pipelines as well as the respective control and mitigation tasks were analyzed.



The accreditation program on Pipeline Integrity Management given by ARPEL consists of a series of four modules covering the major threats to integrity and its purpose is to facilitate the identification and implementation of relevant prevention and mitigation actions to minimize their effects.

Benchmarking

With the aim of sharing the conditions, causes and lessons learned from incidents that are recorded in pipelines, a statistical database of failures was developed. In the 2017 edition, five companies shared their information on failures. This number is expected to increase every year, making useful information available for their management in order to avoid the recurrence of incidents.

In turn, the Pipelines and Terminals Committee made the decision to start working on an operational benchmarking to identify gaps, opportunities for improvement and potential gains in efficiency in the operation of pipelines. To this end, the methodology and indicators that will be used during 2018 started to be developed.



REFCOM

Refining and Fuels Committee

The Refining and Fuels Committee continued to promote workshops for the exchange of best practices in different refineries.

Workshop “Best Practices in the Operation and Maintenance of Coker Units”

The REFICAR industrial complex hosted the workshop which was held June 14-16 in Cartagena de Indias, Colombia. More than Seventy professionals from the operation and maintenance areas of nine coker units of Axion Energy, Ecopetrol, ENAP, REFICAR, Shell and YPF participated in the workshop.

The main objectives of the event were the exchange of experiences, best practices and lessons learned from the operation, inspection, maintenance and safety of

coker units; the application of new technologies; the best practices to minimize the impact on the environment and people; and the training of staff involved in operation, maintenance and services for these units.

This activity allowed creating a consultation group or community of practice which has kept in close contact since then, exchanging information in a timely manner and developing a network of support to the operation of coker units.



Workshop “Exchange of Best Practices in Plant Turnarounds”



The workshop was held December 13-15 in Viña del Mar, Chile, under the sponsorship of ENAP, and included two days of lectures and a visit to the Aconcagua Refinery.

The main objective of this event was the exchange of lessons learned as a result of the implementation of large plant turnarounds. The exchange included new management tools, experiences with new technologies and machinery that minimize turnaround time and

make field tasks safer, knowledge on contract models and staff training systems, and the impact of plant turnarounds on the economy of refineries.

The meeting was attended by close to 200 professionals from 27 companies, including operating companies, contractors and providers of technology from Argentina, Bolivia, Brazil, Chile, Colombia, the United States and Uruguay, and the Ministry of Energy of Chile.





CASYSIA

Health, Safety and Environment Committee

The Health, Safety and Environment Committee highlighted the development of tools and exchange of knowledge on process safety; the management of consumption of psychoactive substances and the evaluation of psychosocial risks; the reduction of greenhouse gas emissions; the dissemination of oil spills preparedness and response tools; and the development of performance benchmarking reports.

Process Safety

Under ARPEL Process Safety Program (APSP), a workshop of exchange was conducted, progress was made in the development of the self-assessment methodology and the identification of gaps in process safety management and in the comparative evaluation of process safety incident indicators.

Workshop “Challenges in the Implementation of Process Safety in Oil and Gas Companies”

A group of 60 professionals representing 20 companies in the sector participated in the workshop held July 13, which was hosted by YPF with the support of the Argentine Institute of Oil and Gas (IAPG) and the Center for Chemical Process Safety (CCPS).

Various themes, such as change management, safety culture and mechanical integrity, were addressed. The workshop was marked by the participation of Louisa Nara, Global Technical Director of CCPS. During the event, incidents related to change management and how to include safety at the strategic level of companies and in the development of new business were discussed. The use of mobile technology to streamline and make inspection and monitoring processes more efficient was highlighted, placing emphasis on the importance of safety culture to achieve a successful performance in this aspect.



During the workshop, the Committee held a meeting and announced the 8th Latin American Conference on Process Safety, co-organized with CCPS, to take place September 11-12-13, 2018 in Buenos Aires.

Development of a Self-Assessment Methodology of Process Safety Management Systems

The Process Safety Project Team (EPSP), led by Pluspetrol, worked intensively in the development of a Self-Assessment Methodology for Process Safety Management Systems. This methodology will make it easier for companies to assess the implementation of process safety elements through a simple tool based on checklists, also allowing the comparison between companies and their facilities.

The Self-Assessment Methodology will be launched in March 2018 and will be a very important milestone in process safety management in oil and gas companies.



Process Safety in Upstream

In the framework of the meeting of the Exploration and Production Committee, representatives of the Health, Safety and Environment Committee offered a talk on leading process safety indicators in order to search for joint actions to enable the implementation of

proactive measures to safeguard the safety of people, the environment and infrastructures in exploration and production operations. The meeting was the kick-off of a series of actions to be carried out during 2018 by both Committees, some of them jointly.

Occupational Health

Workshop “Assessment of Psychosocial Risk Factors”

The workshop was held March 21-23 at Club Ecopetrol in Bogotá, with the participation of professionals of seven companies from Mexico, Costa Rica, Argentina and Colombia.

The quality of life of workers and the comprehensive approach to health are becoming increasingly important at the workplace, which shows significant progress in the region, both from the point of view of corporate governance and of regulation.

The focus of the workshop was to share the experience of Ecopetrol, a company that has achieved great development in the subject, and to present the Psychosocial Risk Factor Assessment Guidelines developed by the Ministry of Social Protection in Colombia, which has been adopted by ARPEL as the methodological reference.



Seminar “Management of Consumption of Psychoactive Substances in Oil and Gas Companies”

The seminar was held September 20-21 at Torre YPF in Buenos Aires, with the support of the International Labor Organization (ILO), the Department of Comprehensive Drug Policies of Argentina (Sedronar), the Argentine Society of Occupational Medicine (SAMT), the Society of Occupational Medicine of the Province of Buenos Aires (SMTBA), the Argentine Center for the Prevention



of Addictions at the Workplace (CAPLA), the Argentine Institute of Oil and Gas (IAPG) and the Argentine Association of Private Security (AASPRI). The event was attended by 130 professionals from Argentina, Brazil, Chile, Colombia, Costa Rica, Italy, Portugal, Peru and Uruguay, with a high representation of companies in the industry. The seminar made it possible to present the new global and regional context of consumption of psychoactive substances at the social

and work level, the risks for companies, new threats such as designer drugs, and different approaches to management. Some of the main conclusions reached are that the problem has a psycho-social origin, that it is a treatable disease, that a multidisciplinary approach is necessary to address it, that it is important that the policies to be implemented be consistent, and that it is necessary to build trust within employees for policies to be successful.



Prevention and Response to Oil Spills - Update, Translation and Dissemination of the RETOS™ Tool

RETOS™ (Readiness Evaluation/Excel Tool for Oil Spills) is a unique assessment tool created by ARPEL that provides guidance for operators in the oil and gas sector and in governments to verify their own oil spill preparedness and response management. RETOS™ has become an international reference on the subject that is currently used by companies and governments in the five

continents. It may be downloaded free of charge. In order to facilitate the international scope of the tool and its use in different regions of the globe, its translation into Portuguese and French was completed in April. The French translation was funded by the International Oil Spill Conference (IOSC). Spanish and English versions of the tool were already available.



Manual and Tool to Evaluate Oil Spill Management Capabilities (RETOS™)
Used by companies and governments in the five continents

Now available in

English, Spanish, French and Portuguese

As regards dissemination, a presentation was made and a short course on the tool was given during the International Oil Spill Conference (May 15-18, Long Beach, California, United States). In addition, we continued with the annual training program with two new editions of the course, which was held for the first time in Chile (June 21-22, Santiago de Chile) and for the third consecutive year in Buenos Aires (September 28-29), co-organized by IAPG.

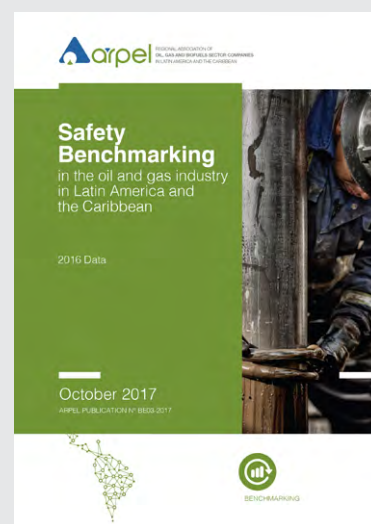


Benchmarking Reports

With the purpose of identifying gaps and continuing to support the improvement in the management and performance of oil and gas companies, new health, safety and environment benchmarking reports were issued. It is pertinent to highlight the publication of the first process safety incident benchmarking report, based on the reporting criteria of API Standard 754, this being another milestone in the pursuit of operational excellence.

Safety Benchmarking (2016 data)

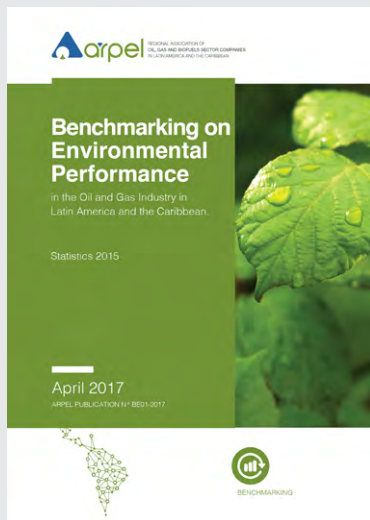
A new edition of the safety benchmarking report compiling safety statistics and incidents of more than 20 member companies was issued. This report analyzes four reactive indicators (total incidents, severity, frequency of incidents with lost days and fatalities) and two proactive indicators (safety training and planned task observations), data are broken down by line of business (E&P, refining, pipelines, distribution and others) and by category (companies and contractors), also including historical information.



Process Safety Indicator Benchmarking (2016 data)

The first report on “Benchmarking of Process Safety Incidents in the Oil and Gas Industry of Latin America and the Caribbean” with 2016 statistics was published in November. The document presents statistics from 15 member companies and the data refer to three lines of business: production, refining and pipeline transportation.

In addition to the benchmarking, the purpose of the report is to promote the proper recording and reporting of such incidents, providing a simple and consistent framework, as a way of supporting the implementation of the concept of process safety management in oil and gas companies.



Environmental Performance Benchmarking (2015 data)

A new edition of the environmental performance benchmarking study was also published. It compiles statistics of oil spills, management of produced water and process effluents, waste generation, freshwater use and GHG emissions. Fifteen member companies operating in eleven countries of the region participated in this edition.



HTKMC

Human Talent and Knowledge Management Committee

The Human Talent and Knowledge Management Committee works on the exchange and development of best practices and experiences to promote the development of human, intellectual and organizational capital of the industry in the region, currently one of the most important topics for the sector.

Human Talent Benchmarking Report

The Human Talent Benchmarking Project is in line with the mission of the Human Talent and Knowledge Management Committee of developing, sharing and promoting best practices and solutions in terms of attraction, retention, training and development of human talent.

The first edition of the report was published in 2012 with the purpose of diagnosing the main challenges and future needs, identifying trends and practices, analyzing the level of alignment or dispersion among the companies in the sector, and sharing points of attention.

A new edition was published in 2017 to give continuity to the initiative and reflect the progress made. The main issues covered were attraction and recruitment of talent; communication and participation; training and knowledge management; background, retention and long-term commitment; diversity management; working conditions; and compensation plans and award programs.



Workshop / Webinar on Labor Relations

The Webinar/Workshop “Models of Labor Relations Management - Experiences and Lessons Learned” was held July 27 with the purpose of exchanging experiences between member companies. Three companies presented their management models, challenges and lessons learned. After that, there was a debate to address the great challenges of the industry for the management

of labor relations in view of the new energy reality, technological advances and their impact on employment, working conditions, trade unions and contractual relations.



Network of Universities

A database of universities that offer careers and activities related to the industry in the region was developed in 2017 in order to facilitate their participation in the Innova@arpel Technology Platform.

With this purpose, an agreement was signed with the Ibero-American Program of Science and Technology (CYTED), which includes a network of Ibero-American universities that develop different research programs.

Training Program for Senior Management

Throughout the year, work was done on the contents of the three modules of the Training Program for Senior Management to be offered as of 2018.

The program includes modules on state-of-the-art corporate and technical issues that provide a view of

the industry at the global and regional level in order to train new leaders with a broad vision of the future that guide the actions of companies in view of the new paradigm of change faced by the industry.



SRC

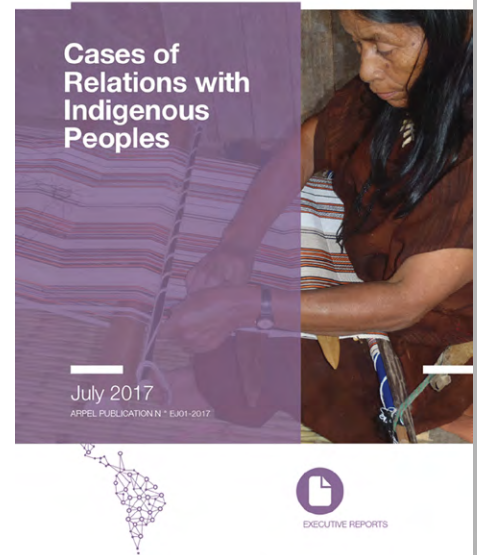
Social Responsibility Committee

The Social Responsibility Committee addresses highly sensitive topics for the development of the hydrocarbons industry, among which are highlighted Human Rights, relations with communities and indigenous peoples, social risks management, gender and cultural diversity and labor practices.

Cases of Relations with Indigenous Peoples

A new Report on Cases of Relations with Indigenous Peoples was launched in 2017 in order to present cases of relations with indigenous peoples as a way of conveying experiences, lessons learned and best practices that may be useful for companies operating in the region. It embraces the vision of experts who have been managing this issue in their companies for many years.

One of the main conclusions is that the involvement of the population in early stages of projects is a key aspect to establish relations of trust and transparency with these stakeholders. The participation of the government is also important, not only to ensure the prior consultation process, but also to legitimize it in front of the communities and the society in general.



Webinar/Workshop on Corporate Social Responsibility Management with Contractors

The activity was held October 24 with the purpose of presenting experiences on management models, challenges, lessons learned and development of contractors. The webinar highlighted the importance of ensuring transparent and ethical practices, generating shared value in the supply chain, and developing sustainable suppliers by promoting productivity, competitiveness and good corporate governance.



Report on Prior Consultation in the Countries of the Amazon Basin

This report was published in 2017 and its main objective is to be a tool of consultation for the indigenous communities, companies and State institutions related to hydrocarbon activities in indigenous territories within a democratic framework; in which the right to the participation of indigenous peoples at the different stages of the Prior Consultation is guaranteed, respecting and ensuring the free and full exercise of their rights. The need to analyze and describe the characteristics of the prior consultation lies in the fact that this right has become essential to protect and guarantee the fundamental rights of the indigenous peoples and their territory.

White Paper “Tripartite Dialogue: Industry-Government-Indigenous Peoples (EAP Program)”

The Energy, Environment and Population Program (EAP) is a space for dialogue between governments, industry and indigenous peoples that began at the end of the 1990s. ARPEL participates on behalf of the industry since its inception, in cooperation with the Latin American Energy Organization (OLADE) acting on behalf of governments, and the Coordinator of Indigenous Organizations in the Amazon Basin (COICA) acting on behalf of indigenous peoples.

The purpose of the program is to contribute, through constructive dialogue between the three groups,

to create a climate conducive to the sustainable development of the hydrocarbon activity in the Amazon basin, taking into account the interests of each of the parties, with a focus on sustainability and gender equity.

Within the framework of the program, a White Paper on Tripartite Dialogue was drafted in order to have a reference document that will reflect the experiences and lessons learned from the dialogues in the Amazon Basin and to promote their continuity. The document was completed in 2017 and will be published in 2018.



Specialized Courses on Indigenous Peoples and the Hydrocarbons Industry

In October and December there were two editions of the course “Indigenous Peoples and the Hydrocarbons Industry,” with a focus on Argentina.

The objectives of these courses were to guide and provide general tools about this issue in Argentina, and specifically, its relation with the hydrocarbon industry, as well as to foster debate and reflection on the relations between the oil and gas sector and the indigenous peoples in Argentina. The main topics addressed during the training were: the definition and the socio-demographic and cultural characterization of indigenous peoples; the historical approach; the identity processes; the legal and administrative framework related to indigenous peoples at the international and local level; the relations between the State, the hydrocarbon industry and indigenous peoples; and the management of relations with indigenous peoples.

The courses, which were co-organized with the Argentine Institute of Oil and Gas (IAPG), brought together professionals from 21 companies with activities in Argentina.





CYBERSECURITY

The Cybersecurity Working Group works on raising awareness and facilitating tools to face the new risks brought in by the revolution of information technologies.

Information and communication technologies have set new ways of working and business models, while bringing new risks for business management. With the purpose of supporting companies in the preparation and response to cyberthreats, the Working Group on Cybersecurity was established at the end of 2015, and has been working since then in the exchange of good practices and in the development and dissemination of useful knowledge through trainings and workshops.

First Edition of Virtual Course on Industrial Cybersecurity

In order to continue building capacities in companies to prevent and respond effectively to cyberattacks, an emerging and growing threat for companies that manage critical infrastructure, the course “Introduction to Industrial Cybersecurity and Critical Infrastructure” was developed and delivered by WisePlant.

Professionals of ENAP, Oldelval, Petroperú, Pluspetrol, Tenaris and YPF participated in this course, which was useful for presenting the existing standards, the current situation of the problem and the risks involved, as well as the stages in the implementation of a cybersecurity program.

White Paper “The Strategic Route of Corporate Cybersecurity: A Guiding Framework”

This document was published in March in order to compile the bases required to understand the uncertainty and risks associated with cybersecurity, as well as the possible ways to minimize the risk. It is a brief report that offers a guiding framework for decision-makers in organizations.



Workshop “Assessment of the Maturity of the Cybersecurity Process in Industrial Organizations”

The Workshop was co-organized with the Industrial Cyber Security Center (CCI) at the end of May, in the framework of the agreement signed in 2016. The training was attended by 35 professionals from Argentina and Uruguay throughout the oil and gas value chain and was in charge of the Director of CCI, José Valiente, the Vice President of CCI, Miguel García-Menéndez, and Claudio Caracciolo, General Coordinator for Latin America of CCI. Its main objective was to provide attendees with the knowledge required to determine the degree of maturity of an industrial organization in the field of cybersecurity



with regard to the requirements of the company, identifying the main security breaches and making comparisons between different organizations in terms of the maturity of their cybersecurity capabilities in order to achieve a level of excellence in risk management.

Seminar “Foundations of Industrial Cybersecurity”

The event was held August 2 at the headquarters of YPF in Buenos Aires and was attended by more than 100 professionals from the sector and local government authorities. The seminar was marked by the participation of Jeimy Cano, associate professor of the School of Administration of Universidad del Rosario, Bogotá, Colombia, who gave the talk entitled

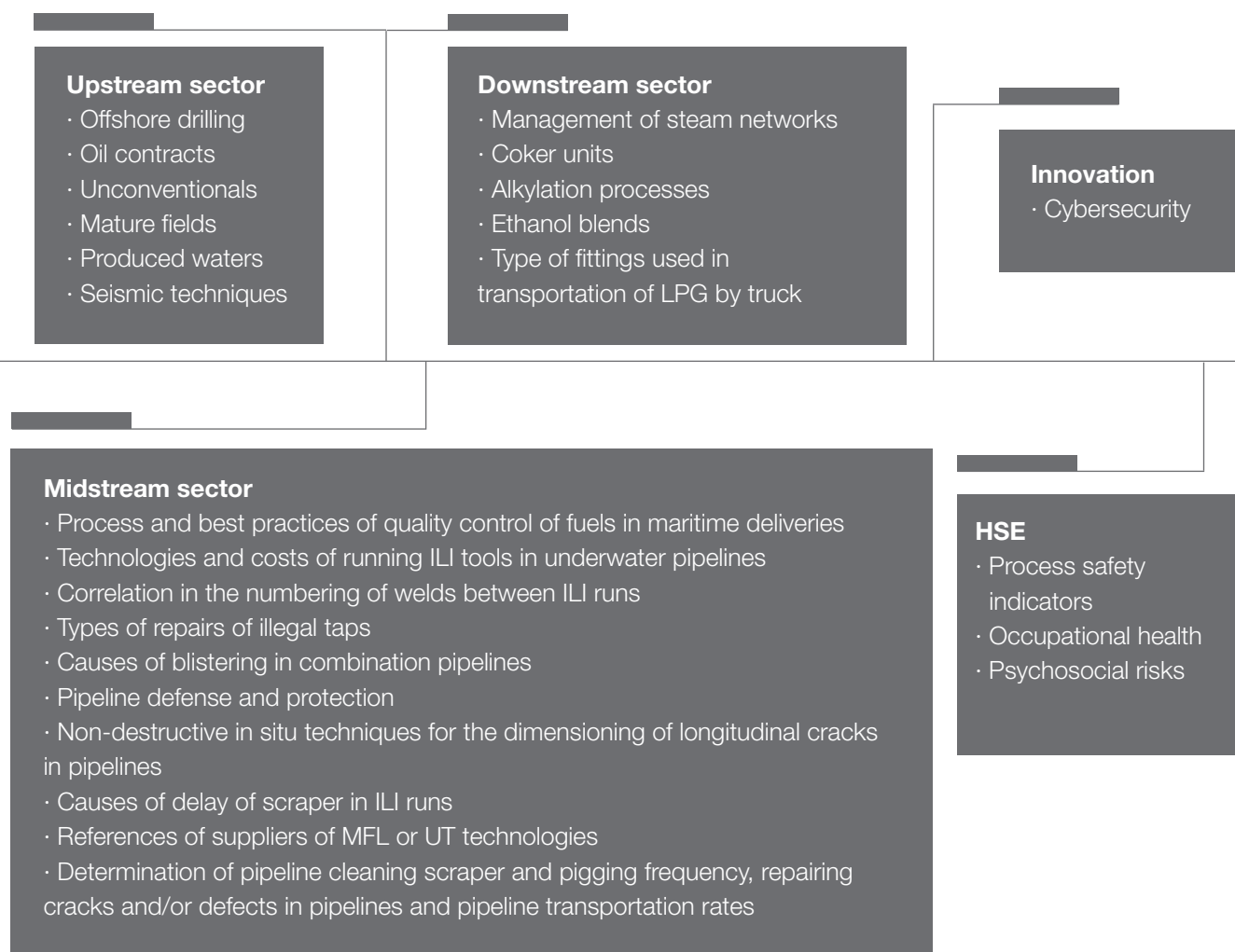
“Emerging practices in corporate cybersecurity and its importance in the agenda of senior management.” The event provided a space for high-quality reflection and set the conceptual bases to understand the risks and carry out proper management, addressing the resilience challenge, the reputation and the continuity of the business of companies in a scenario of high uncertainty.



INSTANCES OF RECIPROCAL TECHNICAL ASSISTANCE (ATRs) AND DIRECT TECHNICAL ASSISTANCE (ATDs)

The instances of reciprocal technical assistance are opportunities to exchange best practices among companies on specific topics of business management or operations. Through different methods, such as internships, meetings, workshops, exchange of documents, the professionals of our member companies work cooperatively to assist each other and share their knowledge and experience.

During the year several instances of reciprocal technical assistance were carried out on the following topics:



In addition, as a way to facilitate technical assistance among the companies and intensify the activity, a tab in ARPEL web page (exclusive for members) was created to file the application on-line, facilitating the process and its management for greater efficiency and effectiveness. Besides, one of the services of the Innov@arpel platform will be the possibility of establishing technology partnership opportunities between companies and/or other relevant stakeholders, this being another channel to provide technical support to member companies.

Moreover, two direct technical assistance projects were carried out for member companies with a focus on HSE management. This line of work will be increased in the coming years in order to implement existing knowledge and channel the best practices of the industry, seeking to improve the performance standards of member companies.



Climate Change Resilience

Climate change poses a global challenging scenario for the energy sector, and for oil and gas companies in particular, which plays a strategic role in nurturing development and providing safe and affordable energy in a sustainable way. Given this scenario, ARPEL has devoted to improving the energy efficiency of its members and the reduction of emissions of greenhouse gases, which translates into a more sustainable and resilient industry.

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

The workshop was held September 6-7 at Torre YPF in Buenos Aires, with the participation of ten members from six countries, in addition to representatives of the Ministry of the Environment and Sustainable Development of Argentina, the Argentine Business Council for Sustainable Development and IPIECA. The purpose of the event was to share information and tools to support adaptation to climate change and management of climate risks in the oil and gas industry. During the workshop, the view was expressed that companies in the sector are incorporating climate risks in their evaluation matrices, although there are still many challenges in this field. Climate change risk maps and areas of vulnerability, scientific advances on emissions and scenarios for the future and two climate vulnerability tools were also discussed.



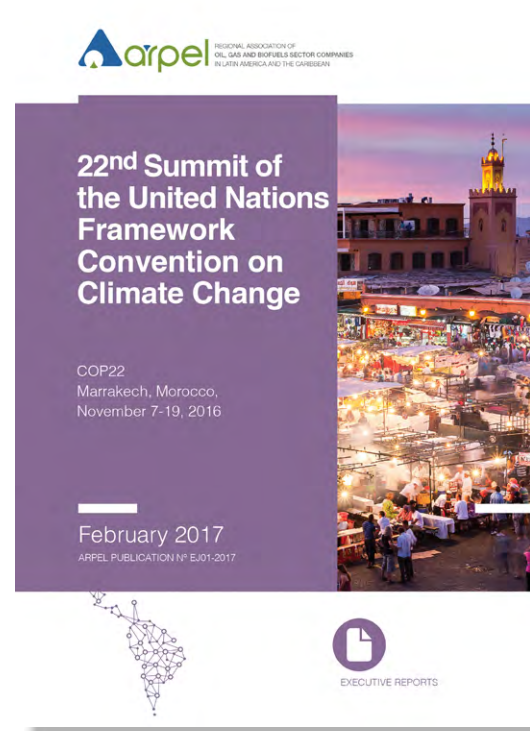
Contest “What is being done with the associated gas in Latin America and the Caribbean?”

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 by ARPEL and the Latin American Energy Organization (OLADE) entitled “What is being done with the gas associated with oil in Latin America and the Caribbean?” This activity brought together researchers and experts of the hydrocarbon sector to develop a scientific article on “venting and flaring of gas associated with oil in Latin America and the Caribbean.” The winner of the contest was María Elena Ayuso, with the paper entitled “Analysis of associated natural gas flaring and venting practices. Obstacles and progress made in Latin America.” The contest winner was invited to participate in the Oil and Gas Conference ARPEL 2017 and received a monetary award for research and a free admission to an ARPEL course of her choice.



Reports to Senior Management on the Conference of the Parties on Climate Change

In order to convey key messages and potential impact on the oil and gas industry in the region of the negotiations conducted during the Conferences of the Parties to the United Nations Framework Convention on Climate Change (COPs), ARPEL has been developing annual executive reports on those instances. Reports were published in 2017 on the 22nd meeting (COP22 - Marrakech, Morocco - December 2016) and on the 23rd meeting (COP23 - Bonn, Germany - November 2017). Both conferences focused on the preparation for the implementation of the Paris Agreement subscribed in 2015, which will enter into force as of 2018. The main challenge faced by the sector in this field is to respond adequately to the demands arising from the implementation of the commitments made by nations in the framework of the Paris Agreement.



Webinar “Financing Options for Climate Change and Energy Efficiency Projects”

This webinar was held July 14 together with the Inter-American Development Bank (IDB) and the World Bank (WB), with the aim of presenting the options that the multilateral lending agencies have available to the private sector. One of the goals of this line of work is to channel resources to the implementation of energy efficiency and greenhouse gases emissions reduction projects by member companies.





Energy Integration

Expansion of Markets and
Energy Security

Seminar “Natural Gas and LNG Markets”

In the framework of the Energy Week organized by OLADE December 4-7, ARPEL held the seminar on Natural Gas and LNG Markets, which was sponsored by Compañía Mega and supported by the Association of Industrial Consumers of Natural Gas of Argentina (ACIGRA) and the Argentine Institute of Oil and Gas (IAPG). This event brought together 100 business executives and professionals from the energy sector who addressed the situation of the natural gas markets at the global level and mainly in the Southern Cone. Some of the main conclusions were the tendency of the gas market to be more flexible and

liquid, the challenges to balance supply and demand in the Southern Cone, the opportunities it offers to restore the balance of market integration, energy efficiency and the development of petrochemical industries, and the opportunities for economic development for the region.



Identification of Strategic Projects for Regional Energy Security

During the last fiscal year, work was also done on a plan on “Identification of Strategic Projects for Regional Energy Security,” which was co-sponsored by CAF (Development Bank of Latin America) and in coordination with the Latin American Energy Organization (OLADE), the Economic Commission for Latin America and the Caribbean (ECLAC), the Regional Energy Integration Commission (CIER), the Organization of American States (OAS) and the World

Energy Council (WEC).

The summary document of that project was developed during the year and describes the international economic and energy context of South America; the results of scenario building; the strategic projects identified and the elements to be considered for the development of projects in key areas.

This document will be used by ARPEL during its participation in the G20/B20.



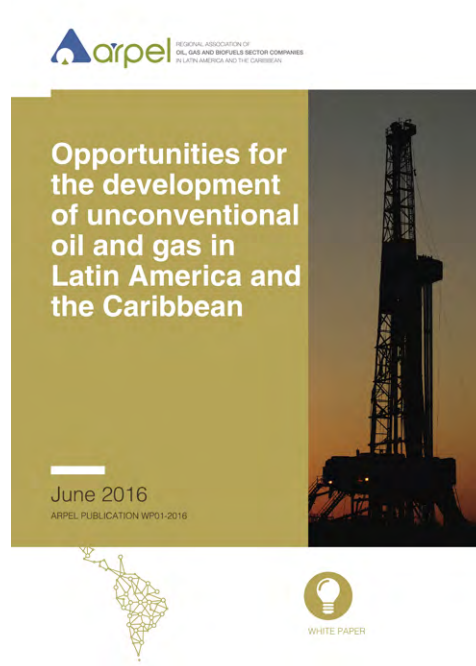
Technical Advocacy

Regulations Enabling Investments

Presentation of the White Paper on Unconventionals in Brazil

The Seminar on Hydrocarbon Resources in Low-Permeability Reservoirs organized by the Brazilian government took place in Brasilia November 28-29. During the event, Miguel Moyano, Upstream Director, made a presentation of the ARPEL White Paper published in 2016 relating to the exploration and exploitation of unconventional hydrocarbons, and copies were distributed to the delegates of the Government of Brazil.

The purpose of the presentation was to share science-based information on the impacts of the development of unconventionals and generate new instances of exchange and support in order to enable the rational development and sustainable management of these resources. As a result of the presentation, the governmental authorities of Brazil and Colombia who were present expressed interest in ARPEL assisting them in coordinating a visit with provincial authorities and operators of unconventional reservoirs of Argentina. To facilitate this regional collaboration process between government and industry, this activity is being coordinated through OLADE and will take place in 2018.



Sulphur in Marine Fuel

The International Maritime Organization (IMO) is a specialized agency of the United Nations that promotes cooperation between States and the transportation industry to improve maritime safety and to prevent marine pollution. A recent proposal of the IMO included the implementation in 2020 of a 0.5% limit to the sulphur content of marine fuels, which will undoubtedly have a major impact on the global energy system.

After this proposal, a number of meetings were held in 2017 between different refineries and maritime authorities, and a note to the IMO subsequently drafted, which was presented by the Maritime Authority of Peru and backed by several countries in the region, requesting postponement of the entry in force of such a provision to 2025.

ARPEL adhered to the note, on the understanding that the refineries in the region will not be in a position to produce marine fuel with 0.5% sulphur content by 2020. The Association believes that the agreement will have a negative economic impact on the refineries in the area, as the industry will require implementing new units, which would take at least 7 years in the case of State companies, which are the majority in the region. In addition, after the crisis of the oil price in 2014, which continues to the present day, the projects of new refineries, the expansion and increase of deep conversion have been postponed in Latin America due to economic problems.



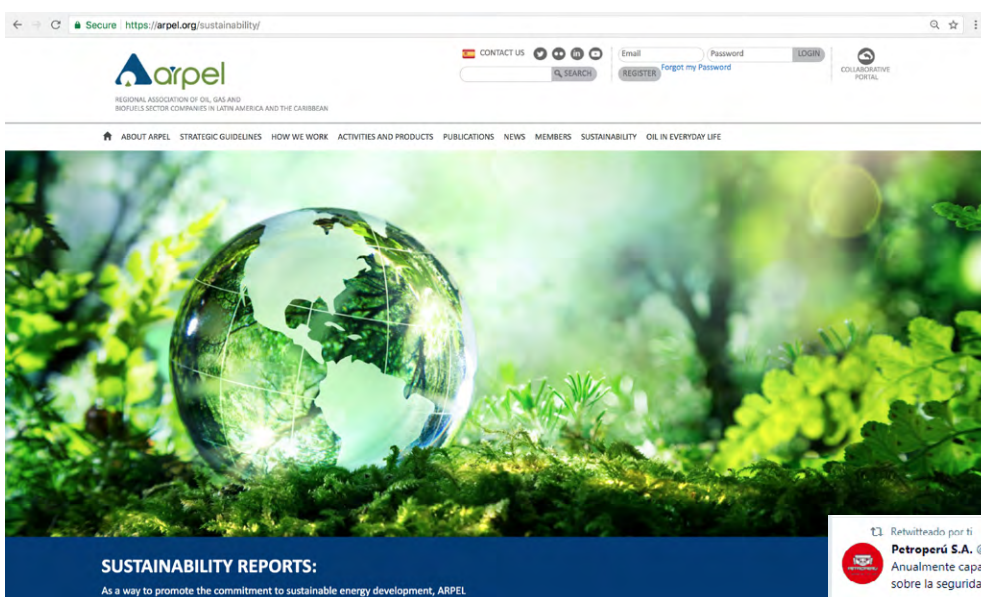
Communication and Sustainability Reports

Transparency and Reputation

The development of sustainability reports involves the systematic review and the measurement of progress and initiatives of companies to achieve management that is aligned with sustainable development in the operation areas. In this regard, several actions have been taken to disseminate reports and support companies to improve their reporting practices.

Dissemination of Sustainability Reports of Member Companies

A tab was created in the web page where the latest editions of the sustainability reports of member companies can be found. This allows sharing the progress made on key topics such as human rights, environmental management, labor practices, community relations, among others, with different stakeholders. In addition, these reports as well as all related news are actively disseminated through social networks.



Baseline on Sustainability Reports

Based on the information obtained from the official communication channels of member companies, ARPEL conducted a study on the degree of maturity of companies in terms of the development of sustainability reports. This study analyzes, among other things, what methodology and indicators are used, taking as a basis IPIECA's document (2015) "Oil and Gas Industry Guidance on Voluntary Sustainability Reporting (3rd ed.)," endorsed by ARPEL in 2016. The study will be published in 2018 and will serve as the basis for taking action in support of companies in the improvement of the quality of their reports and in the enhancement of sustainable management practices in the sector.

United Nations Global Compact

In October 2017, a new Communication of Engagement to the Global Compact including the main actions taken in the period 2015-2017 to disseminate the ten principles of the Global Compact was published. ARPEL joined the Global Compact in 2006 and since then has worked to promote its principles, as well as to promote and facilitate the adoption of other voluntary reporting initiatives aligned with sustainability.



Communications

During 2017, new editions of ARPEL Newsletter were published, the institutional material, the web page and the social networks were updated, and a new institutional video was developed. All these activities are included in the Communications Plan of ARPEL for 2016-2018, with one of its main objectives being to communicate the achievements of the industry, thus working on its positioning and improvement of its reputation.



Newsletter ARPEL, N° 9 Monday, June 12, 2017

EDITORIAL
Opportunities expand for the region
 Jorge Ciacciarelli
 Executive Secretary of ARPEL

Latin America is a potential destination for investment in hydrocarbon exploration and production, as expressed in the 18th edition of the Oil and Gas Conference ARPEL 2017 held April 25-27, in Punta del Este, which brought together more than 300 senior representatives of the energy sector of the region, from 154 companies, national and international sectoral organizations, and government agencies from 24 countries.

Opportunities expand for the region in a context where energy demand will continue to rise and the leadership of hydrocarbons in the global energy mix will remain in force.

+ READ MORE



REPORT OF THE OIL AND GAS CONFERENCE ARPEL 2017 - SUMMARY AND MAIN CONCLUSIONS

New economic, political, social and technological paradigms are beginning to set up a different global scenario. The world is changing rapidly and is going through a period of adaptation to a new reality that also affects energy.

+ READ MORE



PRESENTATION OF RETOS IN THE INTERNATIONAL OIL SPILL CONFERENCE 2017

The presentation of the Oil Spill Response Planning and Readiness Assessment Manual and its assessment tool (RETOS) was part of the program of the International Oil Spill Conference 2017 held May 15-18 in Long Beach, California.

UPCOMING COURSES AND EVENTS

COURSE
 Evaluation of Programs to address oil spills using ARPEL Manual and the tool RETOS.
 June 21-22, 2017
 Santiago, Chile

WORKSHOP
 Process Safety Implementation Challenges in oil and gas companies.
 July 13-14, 2017
 Buenos Aires, Argentina

COURSE
 Accreditation Program on Pipeline Integrity Management. Module II: Forces of nature, operational errors and third party actions.
 August 21-26, 2017
 Santa Cruz, Bolivia

SEMINAR
 Management of Psychoactive Substance Use in oil and gas companies.
 September 20-21, 2017
 Buenos Aires, Argentina

CONGRESS
 VIII. Invasión de Operaciones de



Newsletter ARPEL, N° 10 Tuesday, September 12, 2017

EDITORIAL
INNOV@ARPEL: WEB PLATFORM FOR PROFESSIONALS, RESEARCHERS AND ENTREPRENEURS IN THE ENERGY SECTOR
 Jorge Ciacciarelli
 Executive Secretary of ARPEL

Taking into account that energy demand will continue to grow and the leadership of hydrocarbons in the global energy mix will remain, it is key to the oil and gas industry to strengthen the search for greater efficiency and competitiveness.

In this regard, technology and innovation are valued as determining factors to achieve efficiencies, and hence as elements that will give sustainability to cost reduction, in addition to collaborating with cleaner and more secure energy production.

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REQUEST FOR MUTUAL TECHNICAL ASSISTANCE THROUGH ARPEL WEBSITE

ARPEL members can now request mutual technical assistance through an online form available on the official site of the Association.

The new section was recently designed with the purpose of facilitating and promoting requests for assistance among professionals of member companies.

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INNOVATIVE TECHNOLOGICAL SOLUTIONS FOR THE OIL & GAS SECTOR IN CONFERENCE ORGANIZED BY ARPEL AND THE IMP
 Next October 16 & 17, will be held in Mexico

UPCOMING COURSES AND EVENTS

COURSE
 Evaluation of Programs to address oil spills using ARPEL Manual and the tool RETOS
 28 - 29 September 2017
 Buenos Aires, Argentina

CONFERENCE
 First Conference on Innovation and Technology in the oil and gas industry in Latin America and the Caribbean
 16 - 17 October 2017
 Mexico City, Mexico

COURSE
 Indigenous Peoples
 19 - 20 October 2017
 Buenos Aires, Argentina

COURSE
 Relations with Communities Management
 7 - 9 November 2017
 Santiago, Chile

COURSE
 Accreditation Program on



Newsletter ARPEL, N° 11 Thursday, December 14, 2017

EDITORIAL
INNOVATION: HOW PLATFORMS, DIGITAL AND ECOSYSTEMS ARE CHANGING BUSINESS AND COMPETITION
 For Fernando Gilbert, VP of Supply Chain at YPF

It was not that long ago I happened to discuss with ARPEL's leading executives how the prestigious organization could spark innovation among its members. The idea of creating a platform came across in that conversation; and in just few months, Innov@Arpel became a reality. Purposefully, Innov@Arpel is an opportunity to develop innovation and technology projects jointly among ARPEL's members, either by sharing and catalyzing knowledge, accessing finance or coating up an initial pilot project among other potentially countless forms of collaboration.

+ READ MORE



LAUNCH OF INNOV@ARPEL, THE VIRTUAL PLATFORM FOR INNOVATION AND TECHNOLOGY OF ARPEL FOR THE ENERGY SECTOR

Montevideo, November 24, 2017. The Regional Association of Oil, Gas and Biofuels Sector Companies in Latin America and the Caribbean (ARPEL) launched Innov@Arpel, a virtual platform for innovation and technology developers with the objective of promoting the interaction between technology solutions providers and the operating companies in the energy sector, particularly oil and gas companies.

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IGO AND ARPEL SIGN AGREEMENT AT TORRE YPF TO EXPAND THE SCOPE OF INNOV@ARPEL

Buenos Aires, December 6, 2017. The Regional Association of Oil, Gas and Biofuels Sector Companies in Latin America and the Caribbean (ARPEL) and the International Gas Union (IGU) signed today a new agreement of cooperation.

UPCOMING COURSES AND EVENTS

SEMINAR
 Cybersecurity in Critical Infrastructures
 October 9-10, 2018
 Buenos Aires, Argentina

Innov@Arpel
 Welcome, integration. Welcome, innovation.

Unlimited account
 For ARPEL members and their R&D centers.

Free account
 For universities of the region

1-month free trial
 For non-member companies of ARPEL

Register to be part of the community

ARPEL PUBLICATIONS
 Available for download in English and Spanish at

Joint Work with IOGP (International Association of Oil & Gas Producers)

The International Association of Oil & Gas Producers (IOGP) is a global forum where its members identify and share best practices on issues relating to health, safety and environment, social responsibility and engineering operations. The Association was created in London in 1974 and is currently positioned as one of the most important voices of the industry at the global level. Among other activities carried out on the basis of the cooperation agreement signed with this association, ARPEL worked in cooperation with its Communications Area on drafting the IOGP Production Report and the Global Energy Brief on "Oil & Gas Production in Central & South America".



Global energy brief

Oil & gas production in Central & South America: Investment needed to meet rising regional demand

In this first of a series of Global Energy Briefs, IOGP looks at Central & South America, one of the world's major oil and gas producing regions; rich in energy resources - particularly oil. As of the end of 2016, the region held one fifth of the world's proved oil reserves.

While exploration and production began in Central and South America almost a century ago, this Global Energy Brief has a more contemporary focus. It shows recent levels of supply and demand and provides a glimpse into the future as well - all set within an historic context that dates back to 1945.

Our figures come from the 2017 edition of the highly-respected BP Statistical Review (www.bp.com/statisticalreview), which includes data to 2016. Key elements for the narrative are based on information from ARPEL (www.arpel.org), the regional organization that represents 90% of upstream and downstream activities in the region, ARPEL and BP are both IOGP members.





Representative to Other Associations Related to the Sector

Coordinator of Stakeholders

In the permanent search for quality spaces to represent the industry at the highest international level, steps were taken to be part of the G20, which will take place in Argentina in 2018, and ARPEL participated in several international events of the sector. At the same time, striving to increase alliances to expand networks and provide knowledge and opportunities for its members, three new cooperation agreements were signed with leading international institutions.

ARPEL as Representative of the Industry in the G20/B20

As a result of the efforts made during the year before official organizations, the Association was confirmed to represent the oil and gas sector in the Group of Twenty (G20), which is under the presidency of Argentina in 2018. The G20 is the main international forum for economic, financial and political cooperation, and brings together the leaders of 19 countries and the European Union, which together account for more than 85% of world GDP, in order to address the major global



challenges and establish policies for their resolution. In this context, the Executive Secretary of ARPEL will be a special guest of the Energy Transitions Working Group of the G20 and a member of the Energy, Resource Efficiency and Sustainability Task Force of the Business 20 (B20), the branch of the G20 that brings together the most influential stakeholders in the business sector.

Cooperation agreements

International Gas Union (IGU)

In the framework of the Oil and Gas Conference ARPEL 2017, ARPEL signed an agreement on technical and institutional cooperation with the International Gas Union (IGU) in order to join efforts for the sustainable development of the natural gas industry in the region. IGU is the international institution of reference for the gas industry, its membership covers 97 % of the value chain at the global level and, as stated in its mission, IGU is the key advocate of the political, technical and economic progress of the global gas industry, and of natural gas as the key to a sustainable energy mix.



Hydrocarbon Exploration and Production Companies Association of Uruguay (ACEPH)

During the ARPEL Conference, it was signed a memorandum of cooperation with the Hydrocarbon Exploration and Production Companies Association of Uruguay (ACEPH). The main purpose of this agreement is to exchange experiences linked to the industry and the pursuit of synergies in the technical activities developed by both organizations.

ACEPH is a non-profit association, with headquarters in Montevideo, Uruguay, which brings together national or foreign private companies whose object is the exploration and/or production of hydrocarbons in the Uruguayan territory or on its continental shelf.



Ibero-American Program of Science and Technology for Development (CYTED)

With the aim of promoting cooperation in innovation and the development of new technologies, ARPEL signed an agreement of cooperation with the Ibero-American Program of Science and Technology for Development (CYTED). Under this agreement, the members of the Energy Committee of the CYTED and the Coordinators and Researchers related to thematic networks and existing strategic projects in this area will be part of Innov@rpele. The CYTED was created by the

governments of Ibero-American countries to promote cooperation in science, technology and innovation, and aims to contribute to the harmonious development of the Ibero-American region through cooperation mechanisms that seek scientific and technological results transferable to production systems and social policies. The CYTED Program aims also to act as a bridge for interregional cooperation in science and technology between the European Union and Latin America.



Institutional representation at industry events

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



Cuba Oil & Gas 2017 Summit
IRN – La Habana, Cuba



AOG 2017
IAPG - Buenos Aires, Argentina



Training Program of Energy Leaders
World Energy Council (WEC)



JODI Gas 2017
Santa Cruz de la Sierra, Bolivia



First International Day for the Prevention of Consumption of Psychoactive Substances in the Workplace
Sedronar - Buenos Aires, Argentina



Sub-Regional Workshop on Critical Infrastructure Protection: Cybersecurity and Border Protection
OAS and the Government of Panama
Panama City, Panama



Energy Week
Latin American Energy Organization (OLADE), Ministry of Energy and Mining of the Republic of Argentina and the Inter-American Development Bank (IDB)
Buenos Aires, Argentina



International Oil Spill Conference (IOSC) 2017
Long Beach, United States



Ninth International Forum of Gas and Energy (FIGAS)
Tarija, Bolivia



XIII SLOM Meeting
Cartagena de Indias, Colombia
















22nd WPC
Istanbul, Turkey



Rio Pipeline 2017
IBP - Rio de Janeiro, Brazil



Sixth Regional Meeting of Chemical Engineering
Montevideo, Uruguay

-  **Cuba Oil & Gas 2017 Summit**
IRN - February / La Habana, Cuba
-  **First International Day for the Prevention of Consumption of Psychoactive Substances in the Workplace**
Department of Comprehensive Drug Policies of Argentina (Sedronar) - April / Buenos Aires, Argentina
Presentation on the view of the private sector on the subject
-  **International Oil Spill Conference (IOSC) 2017**
May / Long Beach, United States
Presentation of the work “RETOS™: Use of an international tool for assessing oil spill planning and preparedness”
-  **22nd WPC**
July / Istanbul, Turkey
ARPEL acted as a judge in two WPC Excellence Awards (CSR and Technological Development); was Chairman of the CEO Panel on the Future Workforce; Vice-Chair of the Forum on Energy Poverty; Speaker in the Round Table on Women and Energy; Speaker in the Forum on Unconventionals (presentation of ARPEL White Paper); Speaker in the Expert Workshop on Offshore (presentation of Report on ARPEL-WPC 2015 Workshop); and Panelist in the Round Table on the Resilience of the Industry (presentation of the Technological Platform Innov@arpe)
-  **AOG 2017**
IAPG - September / Buenos Aires, Argentina
-  **Sub-Regional Workshop on Critical Infrastructure Protection: Cybersecurity and Border Protection**
OAS and the Government of Panama - September / Panama City, Panama
Presentation on ARPEL, the context of technological convergence, the fourth industrial revolution, the internet of things and the growth of cyber-risks at the global level
-  **Ninth International Forum of Gas and Energy (FIGAS)**
October / Tarija, Bolivia
Presentation on the new energy scenario
-  **XIII SLOM Meeting**
October / Cartagena de Indias, Colombia
-  **Rio Pipeline 2017**
IBP - October / Rio de Janeiro, Brazil
Presentation of the guidelines on geotechnics developed by ARPEL and the statistical database of failures in pipelines; organization of a workshop on management of control rooms
-  **Sixth Regional Meeting of Chemical Engineering**
October / Montevideo, Uruguay
Presentation on opportunities for development of unconventional oil and gas in Latin America and the Caribbean
-  **Training Program of Energy Leaders**
World Energy Council (WEC)
Webinars on “Shale Gas in Latin America and the Caribbean” - March and September
-  **JODI Gas 2017** – November
Santa Cruz de la Sierra, Bolivia
-  **Energy Week**
Latin American Energy Organization (OLADE), Ministry of Energy and Mining of the Republic of Argentina and the Inter-American Development Bank (IDB) - December / Buenos Aires, Argentina
Presentation at the 12th Regional Energy Integration Forum (FIER) on the role of LNG and unconventionals in the energy integration in Latin America and the Caribbean

Courses

Eight training courses were conducted, involving more than 180 industry professionals with a high degree of satisfaction. In addition, the issue of cybersecurity was incorporated into the portfolio of courses that are offered on a regular basis.

Following are the courses conducted:

- **Assessment of Maturity of the Cybersecurity Process in Industrial Organizations**

May 31- Buenos Aires, ARGENTINA

- **Evaluation of Programs to Address Oil Spills using ARPEL Manual and the RETOS Tool**

June 21-22 - Santiago de Chile, CHILE

- **Pipeline Integrity Management (PIM) “Forces of Nature, Operational Errors and Third-Party Actions”**

ARPEL-ASME / July 24 - Lima, Peru (coordinated with ASME)

- **Accreditation Program on Pipeline Integrity Management - Module III -Forces of Nature, Operational Errors and Third-Party Actions**

August 21-26 - Santa Cruz, BOLIVIA

- **Evaluation of Programs to Address Oil Spills using ARPEL Manual and the RETOS Tool**

September 28-29, Buenos Aires, ARGENTINA

- **Indigenous Peoples and the Hydrocarbon Industry**

October 19-20 and December 4-5 - Buenos Aires, ARGENTINA

Executive Reports

- **“22nd COP of the United Nations Framework Convention on Climate Change (COP 22 - Marrakech)”** (Feb. 2017)
- **“23rd COP of the United Nations Framework Convention on Climate Change (COP 23 - Bonn)”** (Dec. 2017)
- **“Cases of Relations with Indigenous Peoples”** (July 2017)

Reports on Events

- **Report on Workshop “How to Remain Profitable in an Environment of Low Oil Prices?”** (Feb. 2017)
- **Report on “Regional Conference ARPEL 2017”** (May 2017)
- **Report on Seminar “Fundamentals of Industrial Cybersecurity”** (Ago. 2017)
- **Report on Workshop “Climate Risks and Adaptation: Challenges and Opportunities in the Oil and Gas Sector”** (Dec. 2017)
- **Report on ARPEL Seminar “Natural Gas and LNG Markets”** (Dec. 2017)
- **Report on Seminar “Management of Consumption of Psychoactive Substances in Oil and Gas Companies”** (Dec. 2017)

Best Practices

- **Manual RETOS V2.1 - Translated into Portuguese and French** (Abr. 2017)

White Paper

- **“The Strategic Route of Corporate Cybersecurity: A Guiding Framework”** (Mar. 2017)

Benchmarking

- **“Benchmarking on Industrial Safety in the Oil and Gas Industry in LAC (2016 data)”** (Oct. 2017)
- **“Benchmarking on Process Safety Indicators”** (Oct. 2017)
- **“Benchmarking on Environmental Performance in the Oil and Gas Industry in LAC”** (Apr. 2017)
- **“Benchmarking on Key Elements in Human Talent Management”** (Sept. 2017)

Institutional

- **“ARPEL and the Global Compact (COE 2017)”** (Oct. 2017)

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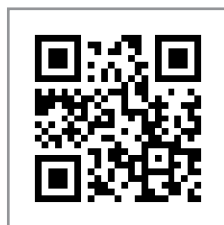


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2017 ARPEL Annual Report



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.



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