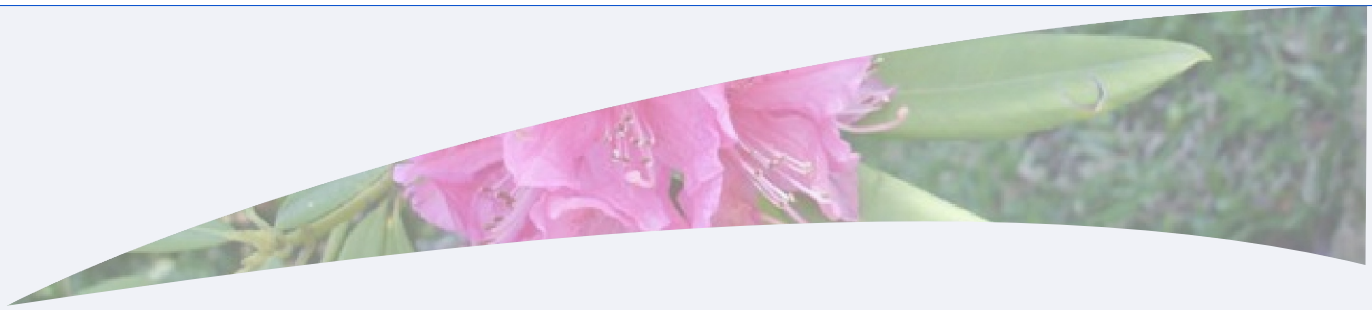
International Policy Approaches to Climate Change

The Copenhagen challenge - ARPEL contribution

REGIONAL ASSOCIATION OF OIL AND NATURAL GAS COMPANIES IN LATIN AMERICA AND THE CARIBBEAN

November, 2009



Introduction

This document, produced by the Regional Association of Oil and Gas Companies in Latin America and the Caribbean (ARPEL), has the objective to offer the perspective of the regional oil and gas industry specifically focusing on the main topics being discussed under the United Nations Framework Convention on Climate Change (UNFCCC) on the road to Copenhagen.

In 1999, ARPEL created the Climate Change Working Group with a view to reinforcing the capacity of the Region's industry and governments to develop projects and implement technologies for greenhouse gases (GHG) emissions reductions that could also get carbon credits under the Kyoto Protocol, thus taking advantage of the regional and international schemes existent for emissions trading. Since then, the goal has been to make projects attractive to investors while at the same time benefiting the countries of the Region providing financial benefits to the countries involved and fostering the sustainable development of the region.

In light of ARPEL's proactivity on GHG emissions reductions, the Association was accredited -as of December 2004- as an Official Observer to the UNFCCC. In this condition, ARPEL participates as Official Observer of the Conferences and Meetings of the Parties to the Kyoto Protocol and its Subsidiary Bodies.

In 2008, the ARPEL Climate Change Working Group turned into the ARPEL Climate Change and Energy Efficiency Committee (CCEEC). This way, not only the climate change issue increased in importance within ARPEL, but also became more aligned with energy efficiency issues. The CCEEC shares the same view as its predecessor, but also focuses on improving the energy efficiency management as part of the GHG emissions management. CCEEC has the following objectives:

- ✦ To strengthen the corporate management of ARPEL members with regards to climate change and energy efficiency through the exchange of technology, best practices, experiences and lessons learned; creating awareness of the associated opportunities and risks.
- ✦ To promote cost-effective actions to improve energy efficiency and provide expertise in the development of GHG emissions reduction projects, taking the advantage of the potential benefits from participating in carbon markets.

- To interact with organizations, scientific experts, regulators and other stakeholders, being ARPEL a valid interlocutor in climate change and energy efficiency topics.

ARPEL Members participating in the ARPEL Climate Change and Energy Efficiency Committee include: ANCAP, Chevron, IBP, ECOPETROL, ExxonMobil, ENAP, PCJ, PDVSA, PEMEX, PETROBRAS, PETROECUADOR, PETROPERU, PETROTRIN, RECOPE, REFIDOMSA, RepsolYPF, SHELL, StatoilHydro and TOTAL.

Latin America and the Caribbean (LAC)

There are important regional differences in contributions to global emissions around the world. Latin America emitted 1454 $MtCO_2$ from fuel combustion in 2007, 62% more than in 1990[1]. This number might sound very large; however, it only represents 5% of the world´s total.

There are also important regional differences in the emissions intensity in terms of economic output (CO_2/GDP) and in terms of population, remarking wide divergences in the way different regions use energy. Latin America has the lowest ratio worldwide in terms of GPD, and one of the lowest per capita intensity.

Furthermore, the contribution of oil and gas industry operations in LAC can be estimated in ca. 0.4% of the world's total CO_2 emissions derived from fossil fuels' production and consumption.

Notwithstanding all the above mentioned, the oil and gas industry in LAC has been making important contributions to reduce GHG emissions in its operations. Besides, ARPEL has developed several guidelines and reports on energy efficiency and atmospheric emissions management. Some databases have been developed to foster the exchange of information and regional workshops have been and will continue to be developed by ARPEL. These workshops present a forum for interaction among industry, governments, intergovernmental organizations, brokers, academia, the civil society and other stakeholders.

[1] *Source: International Energy Agency*

Background

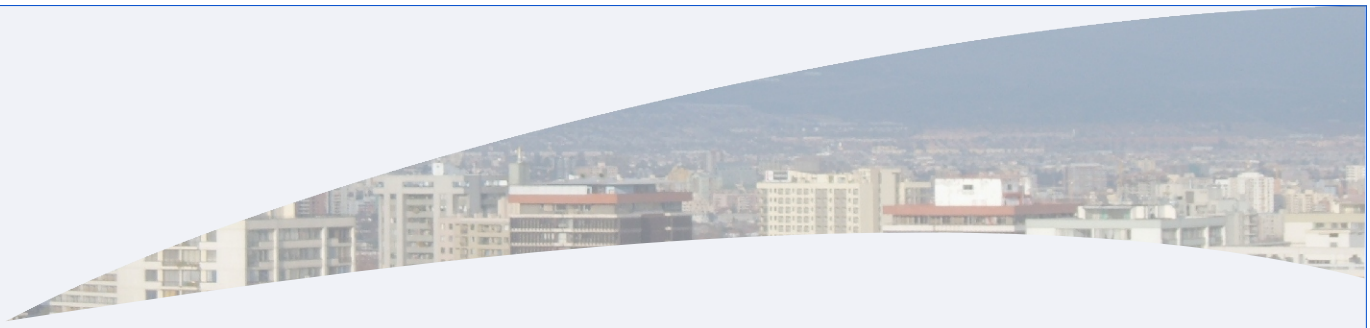
During the 2009 G8 Summit at L'Aquila, Italy, parties gathered to discuss how industrialized economies will lead the way to reduce GHG emissions, while fostering an active participation of the developing world. During the Summit, parties agreed to limit temperature rise to less than 2°C above pre-industrial levels.

On the other hand, the Intergovernmental Panel on Climate Change (IPCC) has warned that even a temperature increase of this magnitude could have significant impacts on people and the environment.

Potential climatic changes present a great challenge to humanity. According to IPCC, an increase in temperature of 2°C over pre-industrial levels could negatively impact people's welfare and decrease countries' GDP. Furthermore, a temperature raise would impact health, food safety, current urban conditions, and biodiversity.

A global effort will be needed to stabilize atmospheric CO_2 emissions, but it is uncertain how the burden will be shared among nations. Defining "common but differentiated" responsibilities among parties, and committing to establishing regional GHG policies and regulations, will be the main focus of the negotiations during the 15th Conference of the Parties (COP15), on December 7-18, 2009, in Copenhagen, Denmark. To stabilize the atmospheric temperature in such level an additional effort of all countries considering the differentiated responsibilities is necessary.

At COP15, representatives of UNFCCC signatory parties will meet to negotiate the terms of an agreement "to stabilize the amount of GHG in the atmosphere at a level that prevents dangerous man-made climate changes". This stabilization must occur in such a way as to give the ecosystems the opportunity to naturally adapt. Apart from country representatives, it is expected that an additional 10,000 people will be present to attend parallel meetings and report on the outcomes of the negotiations. The parties are tasked to negotiate post-2012 GHG reduction targets through "common but differentiated" responsibilities and agree on technology and financing flows to support emission reductions in developing countries.



A long-term global emissions pathway - Which framework: 2012-2050, 2012-2030…?

As mentioned above, the parties are being asked to negotiate new emission reduction targets that will enter into force in 2013. The time-frame for these reductions will also be discussed. To achieve the 2°C target, all countries must commit to mid and long-term objectives. Interim checkpoints can help to adjust targets and evaluate achievements. Global long-term goals are defined in terms of the average raise in the crust temperature. This initial goal of 2°C should be updated in accordance with the progress of the scientific knowledge. To allow for such update to take place, one approach is to sub-divide the 2°C target into partial goals of 0.2°C per decade. Every ten years, the partial goals could be redefined based on technological and scientific advances, as well as an increased knowledge of associated risks. A long-term framework such as 2012-2050 would provide direction to guide research, development, and deployment of low -carbon technology. At the same time, interim targets will be paramount to remain within the safe level of global atmosphere temperature.

Annex I countries are expected to have different commitments from non-Annex I countries. Some developing countries believe that nations should set GHG reduction targets based on historical emissions, which would place a great burden on industrialized countries. On the other hand, industrialized countries suggest that mitigation actions be subjected only to reduction commitments.

Sectoral approach or sector level

Voluntary sectoral approaches are proposed as a means to broaden the global scope of GHG mitigation to developing countries. Market mechanisms are put forward in that context to create incentives for mitigation in developing countries beyond the existing Clean Development Mechanism (CDM), and to encourage mitigation at the least possible cost. The introduction of new, sector-based, market mechanisms is only one of many proposals discussed by UNFCCC Parties in the context of a post-2012 international climate policy framework, as a possible means to support mitigation actions in developing countries. The role of such sectoral mechanisms will eventually be determined by the emission goals that accompany them, and on how

the Parties decide to harness the carbon market and other mechanisms to support mitigation in developing countries. These aspects are also currently under negotiation.

Taking into account that ARPEL includes Annex 1 and No-Annex 1 Member Companies, before they incorporate themselves in the sectoral approach, which considers the trading of carbon credits or allowances, they must carefully analyze several factors involved in such mechanism. Those are, among others: the baseline of GHG emissions, financial and technological resources required for project implementation, the incremental costs involved and the impact in competitiveness of the local oil and gas companies and the whole LAC region, and the feasibility of avoiding penalties to the companies in the LAC region until they are in full capacity to participate in such a scheme.

It is uncertain whether the oil and gas sector in LAC will accept binding sectoral GHG reduction targets based on emission profiles. Sector-level commitments may not be the most effective approach to GHG mitigation policies for the oil and gas industry in the LAC region. Voluntary objectives could be more effective, but would need to be considered on a company-by-company basis, based on the organization's own policies.

Well designed sectoral approaches might help foster cooperative actions among developed and developing countries, mainly related to technology transfer. This policy would fit better as a tool for mutual cooperation. Countries have different productive structures and energy profiles; it is advisable to consider the establishment of adequate voluntary objectives based on country policies in line with their economic and social development needs.

Voluntary GHG reduction targets: emission reduction targets need to be comprehensive. It is necessary to establish a system of financial and technological cooperation among the developed and developing countries in simple, effective and less costly ways. Although current GHG reduction goals represent a step towards a largest global cooperation, these goals are insufficient to stabilize the planet's temperature at safe and tolerable levels.

The magnitude of the commitments of LAC countries will highly depend on the participation of developed countries. Some voluntary mitigation and adaptation actions are expected to be financed by Annex I countries. Financial sponsorship should be additional, sustainable and transparent, as well as free from governmental dependency.

Voluntary mitigation actions for developing countries should be backed up by incentives and fomentation actions. A form of voluntary contribution of the developing countries will be in the form of Nationally Appropriated Mitigation Actions (NAMAs), which could be developed as sectoral approaches. The implementation of NAMAs will be accelerated by commitment to early actions such as identifying available technologies and their emission reduction potentials, facilitating access to finance to meet technology needs, and giving advice on promoting technology transfer and diffusion. The regulation of NAMAs should establish a direct and proportional correspondence between mitigation efforts and financing resources and technical support to be offered by developed countries. In COP15, the signatory countries should look for the consensus on flexible and effective mechanisms for the transfer and diffusion of cleaner technologies. These mechanisms should make the transition of the emerging countries to less intensity emitting economies viable.

An improved offsetting mechanism: In a world with an array of carbon market systems, such as the CDM and the EU Emissions Trading Scheme, as more nations introduce their own carbon schemes there will be a need for a common currency for emissions reductions. To date, carbon emission reductions (CERs), which are granted by the CDM, have been the common currency, but it is uncertain whether there will be global alignment of carbon markets in the future. There are several lessons to be learned from established carbon markets:

- ✦ The lack of methodologies for tecnologies used by the oil and gas sector has precluded a significant number of potential opportunities for emissions reductions. A number of valuable projects have not been developed as CDM since the approved methodologies are overly stringent.
- ✦ The CDM process is lengthy and complex; it can take several years to get a CDM project approved and CER credits issued.

- ✦ Economies of scale: the cost of developing a CDM can be relatively high, compared to the small amount of reductions generated.
- ✦ It is necessary to improve the system so that we can reduce the cost of these reductions. Umbrella-type mechanisms are an option: Programs of Activities (PoA) cluster a group of similar projects under one programmatic CDM project.
- ✦ There is a need to streamline the process to avoid delays and reduce projects costs.

Mitigation and adaptation alternatives

Financial mechanisms: A financial mechanism should be established for mitigation, adaptation, technology, and capacity building. A sufficient flow of public funding to contribute to the efforts for climate change adaptation should be provided.

Technology transfer: In order to engage the private sector in this effort, rules should not refrain nor restrict the options for the development of new technology breakthroughs. At the same time, policy needs to be clear and in alignment with LAC priorities. Intellectual property (IP) issues must be considered as well.

Technology transfer and financing mechanisms need to become easier and faster to help encourage the development of mitigation policies in developing countries. The engagement of developing countries will be stimulated by the international capacity to generate creative and effective solutions to mitigate GHG emissions. Access to technology and financing are key factors for making these efforts compatible with satisfactory rates of economic growth in developing countries.

Carbon Capture and Storage (CCS) as a key technology

Hydrocarbons are expected to continue to play a key role in the generation of energy and power, particularly in developing countries. Mitigating emissions from the use of hydrocarbons will require a portfolio of solutions, including renewable energy generation, increased energy efficiency and conservation, and geological carbon sequestration. The oil and gas industry has many years of experience sequestering gases underground for enhanced oil and gas recovery. Leveraging this knowledge to ensure long-term storage of underground carbon will help accelerate the adoption

of CCS technologies.

According to the International Energy Agency's CCS roadmap, to achieve sustainable CO_2 stabilization levels, 100 large-scale CCS plants should be built in the next 10 years and 3,400 by 2050, worldwide. As emissions continue to rise, it is expected that approximately 65% of CCS facilities will need to be located in developing countries. IEA scenario analysis also suggests that "…without CCS, overall costs to reduce emissions to 2005 levels by 2050 increase by 70%."

On 21-22 September 2004, in Rio de Janeiro, Brazil, ARPEL held a Workshop on "Technology Options to Reduce Greenhouse Gas Emissions". At said event, it was concluded that the technology of CO_2 capture and storage is part of the solution to reduce GHG emissions and requires further understanding by governments and society for its wide implementation. It also requires its costs to be further reduced for wider implementation.

Potential geological formations that are suitable for safe CO_2 storage over long periods of time have been located throughout the world. Some of the highly prospective sedimentary basins are located proximal to major emissions sources in North America, northwest Europe (including the North Sea), the Middle East, Russia, China, and Australia[2]. There is a lack of information about geological storage capacity in LAC. If CCS is to be deployed in this region, additional investment in geological characterization will be required.

Further research, development and demonstration projects that evaluate a combination of different technology pathways are needed to provide the necessary data to construct operational and regulatory frameworks for CCS. Commercial deployment of CCS technology in LAC countries will occur as the technology becomes cost-competitive and when the legal and regulatory structures needed to support CCS are developed by the appropriate government authority. Appropriate technology transfer strategies will be needed to allow fast and widespread deployment.

Incentives are needed for the development and deployment of the first CCS-ready petroleum operations in LAC by helping to raise the minimum level of investment to cover the additional expenses. To date, there are no market mechanisms that

[2] *Prospective areas include suitable saline formations, oil or gas fields or coal beds.*

incentivize the development of geological sequestration projects in LAC.

An international finance system would help to ensure wide-spread adoption of large pre-commercial CCS demonstration projects. Any solution on technology transfer and financing should be followed by initiatives to strengthen innovation capabilities in developing countries.

Barriers to Trade

Developing countries trade should not be negatively affected by neo-protectionist measures arising as presumed spillovers of mitigation policies. The industry is concerned about the introduction of new forms of trade barriers under the guise of climate change related initiatives. In addition to being potentially incompatible with WTO norms, such measures could introduce discrimination against LAC goods produced based on the regional affordable energy matrix. Trade barriers based on any climate change issue confront the principle "common but differentiated" responsibilities among parties. Some developed countries elaborate non-reciprocal national climatic laws which can punish the imports of products from countries that, because of the UNFCCC, don't have binding commitment with emissions reduction but just participate in the voluntary efforts of mitigation apart from the UNFCCC and the global agreements of trade. Those unilateral initiatives, besides generating negative incentives for the cooperation among the nations against global warming, worsen injustices and existent socioeconomic inequality among the developed and developing countries.

ARPEL contribution

ARPEL can contribute to mitigate climate change through the following actions:

- ✦ Supporting the global efforts to face the reduction of GHG emissions and adapt to potential extreme weather events.
- ✦ Coordinating the actions of the oil and gas industry in the LAC region to reduce GHG emissions intensity through energy efficiency.
- ✦ Helping to identify and eliminate institutional, technological, and financial barriers for implementing energy efficiency projects in the oil and gas industry.
- ✦ Building capacity in energy efficiency and the CDM process.
- ✦ Building synergy among technological organizations and promoting mechanisms to facilitate project implementation in ARPEL Member Companies.
- ✦ Fostering the exchange of experiences, knowledge transfer, and dissemination of the energy efficiency and climate change information and issues among customers, providers and main stakeholders of the oil and gas sector in the LAC region.

Regional Association of Oil and Natural Gas Companies in Latin America and the Caribbean

Established in 1965, ARPEL is an association of 26 oil and natural gas state owned and private companies and institutions with operations in Latin America and the Caribbean, which represent more than 90% of the Region's upstream and downstream operations. ARPEL works on three main areas defined in its Strategic Plan:

- *Economic area*: competitive and sustainable industry growth and regional energy integration.
- *Socio-environmental area*: Environmental protection, occupational health and safety, and relations with communities in the industry´s areas of influence. Said approach is facilitated through management systems such as the environment, health and safety one, which helps to prevent, remove, and manage risks from operations promoting the reduction of incidents with high impact on facilities and people. Another example is the relations with communities management system, which establishes guidelines for a sensitive and responsible socio-cultural interaction.
- *Eco-efficiency area*: the priority is focused on greenhouse gases emissions reduction and a more effective use of non-renewable resources.

To accomplish its objectives, ARPEL works together with its Members on issues of common interest to the industry through its 7 Committees. Three Operational Committees: Refining, Pipelines and Terminals and Exploration and Production. Four Corporate Committees: Environment, Health and Safety; Social Responsibility; Climate Change and Energy Efficiency and Energy Agenda.

ARPEL organizes regional workshops, seminars and symposia focused in promoting the sustainable development of the sector through the exchange of information and best practices, and develops technical documentation that contribute with its member companies to improve their management, operations, and products. ARPEL has an interactive Portal for its Members in which all documents developed by ARPEL Committees or through its Events, are available. The Portal facilitates the virtual interaction of the ARPEL community and with its stakeholders.

On 2005, on the occasion of the 40th Association anniversary, its members signed a binding Statement of Commitments in which they convey to actively contribute to the sustainable development of the sector by conducting their operations under a framework of environmental, occupational, and social responsibility, acting with respect for human rights and cultural diversity, searching for the continuous improvement of their management, operations, and products, conducting their businesses under a framework of ethics and respect for the applicable laws, and actively supporting the efforts for regional energy integration.

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These companies place their trust in ARPEL:

Design and layout: Susana Muñiz