

# Energy Integration in South America: Driving Force for Regional Integration Process?

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## I. Introduction

In the beginning of XXI<sup>st</sup> century, energy availability seems to be an important bottleneck that could not only restrict economic development processes of the nations, but also reduce the welfare of world population. Abnormal increase of oil prices, oil and natural gas price volatility, shortage risks associated to the supply of those goods and increasing energy demand have forced change in the approach of energy issues, with the return of the perception that oil and natural gas industries are strategic for the developing countries, a governments' point of view which seemed old-fashioned during the last decade of XX<sup>th</sup> century.

From 1984 to 2002, low oil prices and a right-wing political tendency observed in governments worldwide were effective in convince many specialists that oil had become a commodity in an *strictu sensu*. In other words, there was a competitive world market for oil that justified the liberal wave, the driving force for O&G industry reforms that took place in the nineties in South America countries.

According to a microeconomic perspective, market failures in the international oil market and transaction costs derived from its use were minimized or even eliminated. Privatization of state-owned companies, reduction of barriers to foreign investment on energy markets, prices deregulation and creation of regulation agencies pointed to the importance of an institutional arrange which allows for transparency and elimination of information asymmetries among the firms. For those analysts, supply crisis and producer's collusion were now in the past history.

Nowadays, eight years after the first signs of oil activity cycle reversion, nobody denies the relevance of the issue energy security. The geopolitical nature of energy commerce and, particularly, O&G trade is corroborated by religious, ideological and social antagonisms in Africa, Middle East and even in South America. The amount of military expenditure of allied forces in Iraq's invasion demonstrates the economic effort necessary to the maintenance of world oil market without supply crisis.

In Brazil's case, the new import prices of Bolivian natural gas, the massive anticipation of Petrobras investments in E&P which aim to reduce the external dependence on gas imports, the canceling of GASBOL duplication project and the installation of two GNL re-gasification plants in the next two years account for the transaction costs increase in natural gas business, which traditionally operated in a contract regimen.

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Energy policies worldwide are oriented towards flexibility and mobility for risk mitigation, which can be provided by diversifying supplying sources. Countries that do not possess O&G resources developed energy policies based on import strategy and energy matrix diversification. Japan, South Korea, Singapore, Taiwan, Austria, Germany and Switzerland were not limited by the absence of local supply sources.

On the other hand, South American countries possess huge O&G reserves. Concerning oil reserves, Venezuela is an OPEC's member, having huge reserves of heavy oil. Argentina is also a light oil producer, in a lesser extent. Last year Brazil accomplished an average production around 1,800,000 barrels/day, which represented country's self-sufficiency achievement on oil. Natural gas situation is different: Bolivia, Venezuela and Peru possess huge reserves, but their domestic market is too small. Brazilian domestic market is still under development, while Argentinean's market is mature with prices artificially low that inhibit investments on infrastructure. Chile is very dependent on imports. Those features indicate that energy integration could be the best solution to provide energy security for the region, and allow countries to get benefits from O&G revenues.

The present article aims to discuss if O&G integration is feasible in South America, as well as the institutional and legal barriers that need to be overcome to reach this aim, focused on regulation asymmetries, energy policy coordination and internalization processes of the agreements. Finally, considering the harmonization of regulation rules and the identification of common objectives, the article evaluates if O&G integration could enhance regional integration in South America, despite the structural asymmetries among the countries.

## II. Historical background on South America integration process

### **Political background explains latter integration**

In Southern of the American continent, during the sixties and seventies, the political scenery was dominated by cold war, where an strongly anticommunist ideology prevailed. The military dictatorships were installed in all countries, once any electoral victory of a left wing party was enough to justify the establishment of exception regimes by the Armed Forces. In many South American countries, the civil rights were severely restricted. Although they had happened in different years, each of them with its own characteristics, Brazilian, Argentinean, Uruguayan and Chilean coups possess some degree of connection. They revealed the American influence in South America, but also the reaction of the local elite to the political contestation and social fights context.

Concerning the object of the present analysis – regional integration – the most interesting feature of those military regimes with conservative tendency was the nationalism which gives very particular tones to the economical liberalism in South America. National economies were kept closed at that time. Sharpened by nationalist military regimes, historical rivalries and aspiration for regional hegemony fed the disputes among the three biggest countries: Brazil, Argentina and Chile. Furthermore, there were other divergences among those nations and the smaller countries: Bolivia and Chile, with respect to the territorial dispute which could provide Bolivia's way to the

sea, that could facilitate its exports; Brazil and Paraguay, concerning the utilization of the hydroelectric potential of Paraná river.

That environment was not favorable to any integration attempt, even though ideas and projects which pointed the advantages of the complementariness among the countries had risen from time to time. Moreover, for the dominant doctrine of national security, the dependence on the neighbor strategic resources (including energy) was totally unacceptable. National sovereignty assumed a perception of the international economic relations based on self-sufficiency instead of cooperation.

At that time, three bi-national hydro-electricity mega-projects were initiated: Itaipu, Rio Grande, Yaciretá. What could be the first integration seed was, in fact, the maximum that could be achieved in order to solve the dispute for Paraná, Uruguay and Plata basins' water, in which Brazil, Paraguay, Argentina and Uruguay were involved. In that sense, the building of those facilities was the exception that confirmed the general rule: isolationism.

Still talking about energy, the nuclear programs promoted by the Brazilian and Argentinean military forces during the sixties and the seventies could be placed in the same context of pursuing local hegemony.

In the western sub-continent, military regimes set fire to disputes between Argentina and Chile (Tierra del Fuego) and between Chile and Bolivia (Atacama region). Even with the sign of Andean Pact in 1969, there were huge remaining divergences among its signatories to be overcome, in order to allow a higher degree of regional integration. In that political context, natural resources were not a mean to integrate. On the contrary, it motivated more and more disagreement and dispute among South American countries. Economically, each nation had his back turned to the other, and the fact that Andean Pact (with the emerging of Mercosur) only become effective two decades later, in 1981, confirms that reality.

In 1971, the creation of OLADE, Latin –American Organization for Energy Development, seemed to contradict the above diagnosis. However, again is a exception that confirms the general rule. That organization came from the effort of specific government sectors who was influenced by CEPAL's ideas, which characterized the South America's economic thinking in the post war period. The importance of long term planning and the advantages derived from the regional use of the natural resources led to the creation of a multilateral organism which, for the first time, evidences the structuring power of energy trade. Since then, OLADE's actuation focused its work on technical cooperation, information exchange, studies production and training. That organization has been provided with no means nor any executive attributions, which limits the effect of its initiatives. Besides, political conditions did not allow to go any further.

The assumption that, despite being fair, integration ambitions would not survive in that model, served as a motivation to MERCOSUR's creation. It is worth to remember that, ten years before OLADE's launching, Region Energy Integration Commission was created, with specific objective of coordinating power energy generation and transport projects. The existence of only four international transmission lines and the same old

hydroelectric plants by the end of XX<sup>th</sup> century speaks for itself, revealing the ineffectiveness of the results of CIER's actuation.

### Redemocratization and the integration process

The awakening of the regional economic integration process coincides with the re-democratization of the South-American political regimes. Debt crisis, foreign capital flee, State bankruptcy and high inflation destroyed the economic growth basis, generating what is known by "the lost decade" for the majority of the region's countries. In that moment the economic performance of Argentina and Brazil started to follow a path of stagnation that differs from the one experienced by countries like China, Singapore, Korea and Taiwan, or even Spain, one of the new members of the European Union. The economic stagnation combined with high inflation taxes, as well as the rising of opposite political groups that gained population support weakened the military regimes. A slow re-democratization process took place, being extended until middle nineties in some countries.

By the end of the eighties, the first neo-liberal experiences observed under the military regime, which as Chile's case. However, only in the nineties, in an political environment dominated by the new democracies, the liberalization reforms took place in Argentina, and latter in Brazil and Uruguay. The same movement occurred in the Andean countries, with Colombia, firstly in Peru and Bolivia and later in Venezuela and Equator. The success of monetary policy in controlling the inflation, the external policy of opening the economy, the privatization process and the end of the market intervention created the conditions to attract new foreign investments.

The liberalism wave that swaps the sub-continent may be understood as a local elite's movement to keep the power. To do so, one has only to consider the old tradition of buying votes with false promises or a few bucks, a common practice of political parties with no ideological identity, which have sustained themselves at the expenses of people's exploitation and public and private interest promiscuity, features that characterized Latin-American politics in the XX<sup>th</sup> century. Some aspects like clientelism, demagogy and corruption in all levels of public administration are ancient heritages which has been blurred by censorship of military dictatorship. With the civil right re-conquered, those addictions re-poisoned the economic environment and the results of the reforms implemented in the last decade of the last century.

The modernity embedded in the democratization process was not only related to the structural and liberal reforms. Trade and economic liberalization had an important regional bias. At that time, gains derived from the existing complementariness among the neighbors, specifically with respect to natural resources, began to be valued and pursued. Not by hazard, after, Raúl Alfonsín (Argentina) and José Sarney (Brazil), the first civil Presidents after the end of the bloody dictatorships, proposed the creation of Mercosur.

The transformation that took place in the Sub-continent was only a part of the huge changes in the world context occurred in the eighties and the nineties. For one thing, the fall of Berlin's Wall and the end of the former Soviet Union launched a new age of the North-American hegemony. Under that new paradigm South Cone countries did not receive the same attention as in the time of the fight against communism. For another

thing, the success of the European Unification experience gained many enthusiasts, in view of the pressure on the smaller economies imposed by the globalization process.

The formation of blocks was a means of compensating the asymmetry in global negotiations, besides allowing fast scale gains for local producers. That new context helps to explain the new behavior of Latin-American countries, which were so refractory to relationship with the neighbors, towards regional integration. The creation of Mercosur, in 1991, must be viewed in the light of the slow Latin-American integration process. That was a decisive moment, in which the Mercosur's creation document (Assunción Treaty) the democratic regime is a necessary condition to participate in the economic integration process. It represented the definitive rupture with the military past initiated in the sixties. The former experiences, in energy area or in a wider scope, like ALALC and ALADI had failed. In this sense, Mercosur is the starting point of the integration process.

### **The exhaustion of the first integration outbreak**

In the new global context, the adequate insertion of Mercosur countries depended on the degree of local economies' opening. That opening referred to the increase of the foreign trade exchanges, as well as the improvement of business environment in order to attract new investments. Infrastructure reforms, the end of many public services monopolies and the sell of state companies were common features of the neo-liberal reforms that gradually reached all the region countries, and demonstrated the free-trade orientation of that movement. The elimination of capital flow control and, after controlling inflation, currencies appreciation (Real and Argentinean Peso), indicated some degree of harmony with respect to economy policies of the South American countries and the simultaneous building of a stable macroeconomic environment indispensable for the foreign investor. Finally, the perspective of acting in a common economic space, built around São Paulo-Buenos Aires axis, to which Santiago could be aggregated, would increase the region's attractiveness for foreign investor's eyes.

From the political view, in a moment where South America was losing geopolitics importance, and European East reconstruction started to attract big investors and the acceleration of the Asian Southeast growing was confirmed, effective integration would provide more strength to the region's claims, by increasing the bargain power in the negotiation with USA and a even more united Europe. The efforts of the Presidents Alfonsín and Sarney", which reveal the rising of "presidential diplomacy" in both countries, was fundamental for the signing of Asunción Treaty. With extremely ambitious objectives, the institutional framework was based on few intergovernmental organisms. It seemed that the governments of the four countries involved chose for the creation of integration mechanisms that did not transfer sovereignty to a supranational instance, as occurred in European Union.

Mercosur's aim is the formation of a common market and, to do so, it assumes the free mobility of goods, services and production factors, the establishment of a common external policy, industrial and macroeconomic policies coordination and legal harmonization. Compared to the failures of the former integration attempts, and considering the progress achieved during part of the nineties, the initial success of

Mercosur was substantial. Between 1991 and 1997, the intra-block trade was multiplied by a factor of five, reaching US\$ 21 billion in the last year. Foreign direct investment in Mercosur, jumped from around US\$ 5 billion in 1994, to US\$ 52 billion, in 1999<sup>[1]</sup>.

The regional economies had accomplished the increase of the trade with third parties, with the trade flow more than doubling, between 1990 and 1990, from around US\$ 80 billion to US\$ 180 billion<sup>[1]</sup>. Therefore, although aiming audacious objectives, which were not expected to come true immediately, the commercial success of the initiative was unquestionable.

The new environment dominated by economic liberalism and the perspective of a wider and bigger) unified regional market demonstrated to be strong arguments for foreign investor's attraction strategy. The end of state monopoly in public services (water, transportation, telecom, electricity), as well as in O&G sector was one of the main factor for massive external capital. Some productive sectors were particularly affected by the opening policy: banks, vehicles, petrochemical, milk products, retailing and energy. Energy sector play a main role in this first integration outbreak.

The emerging energy companies from Europe and US, which was not installed in the region, found an unique opportunity for implementing their globalization strategies in the South Cone. The new coming players were numerous: the Texan Enron, the English BG and the Catalonian Gas Natural, in natural gas market; the Spanish Repsol, the Texan El Paso and the French TotalfinaElf in oil market; the French EDF, the Belgian Tractabel, the Portuguese EdP and the Spanish Iberdrola, in electricity markets. The big incumbent companies like Shell, Petrobras and Exxon incorporated rapidly the new geopolitical dimension of the South American energy business. Those enterprises gave the first step for the creation of an integrated economic space derived from energy trade.

The relevance in energy investments is related not only to its magnitude but also to its structuring character. Besides reducing production costs and being the driving force for new businesses, there was the aim of coordinating strategies of the actors involved and materializing heavy investments in transportation and commercialization never made before. The assets specificity, the huge amount of the investment and the long time required for its maturation enhances the unrecoverable nature of the part of costs associated with energy industry.

The irreversibility of the built commercial relationships is an structuring element of those investments. The inter-dependency of the created relations can be hardly broken, or, in other terms, impose high exit costs. That's why those investments can determine commercial paths and establish new levels for the economic relations among the countries.

The execution of de big international projects in the region were made by the private companies who wish to enter in that new trade block and by the incumbents. In oil sector, the most immediate effect of the signing of Asuncion Treaty was the increase of oil imports from Argentina to Brazil. Between 1991 and 1997, the share of Argentinean light oil in the total load processed in Brazilian refineries, which was lesser than 1%, jumped to around 20%. Another feature derived from Mercosur's creation, was the massive asset acquisition by the local majors like Petrobras, Shell and Repsol, aiming not only Mercosur countries, but also other South American nations.

Concerning natural gas sector, the big pipelines of the region were constructed during the nineties. After being suggested for three decades, the complementariness of energy reserves and demand was gaining real boundaries. The construction of a international pipeline network would allow, finally, that the bow formed by São Paulo, Buenos Aires and Santiago be supplied by Argentinean and Bolivian natural gas reserves. The challenges were not small and among all obstacles, two deserved doubled attention: the length of Bolivia-Brazil gas pipeline and the Andes mountain range, in order to supply Chile. The complexity of political, entrepreneurial and financial negotiations involved was proportional to the time spent for its materialization. For Gas-Andes pipeline, which has supplied gas to Santiago since 1997, the starting point was the sign of the Gas Interconnection Protocol, between Argentina and Chile governments, in 1991. That Protocol defined the conditions that allow private sector to implement the project, such as financing seeking, construction and operation of the pipeline, which permitted the supply of the central Chile by the Neuquen Argentinean reserves. In the case of Bolivia-Brazil pipeline, the negotiations were extended to all the nineties, with the pipeline starting its operation in 1999<sup>3</sup>.

The degree of interdependence generated by such projects can be measured considering the volume of imports, which reached historical records in only one decade of operation. Chilean imports achieved 20 million m<sup>3</sup>/day in 2003, while Brazilian imports reached 30 million m<sup>3</sup>/day in 2007. In both countries, the relative importance of that new commercial influx is somewhat bigger that the numbers can tell. A few years ago, Argentinean gas supplied one quarter of the electricity demand in Chile. Nowadays, Bolivian gas imports correspond to half the gas volume sold in Brazil. Therefore, for counting on private sector participation, for being a result of the structural reforms, those assets proved the possible achievements derived from the free market culture, in respect to the access of new sources of energy and to the regional integration process.

However, the success of the regional integration process would be interrupted in 1998. For one thing, the initial stage of integration had met its natural limits. The first divergences on economical, political, and industrial policies had risen. Furthermore, it became evident that the initial option for a modest institutional design, although justified by the former experience and the by the elite's fear of a supranational bureaucratic institution was limiting the consolidation of the economic union of the countries<sup>[2]</sup>. For another thing, Russia's bonds speculative bubble exploded, followed by the Asian crisis, in 1999. With the change in the international scenery, Brazil and Argentina lost the grip on economy performance. Exchange crisis determined the end of neo-liberal experiences in those countries.

The weak performance on the two greatest economies of the region together with the natural exhaustion of the process marked a backwards movement in economic integration, which was extended to 2003. Intra-block influx fell to half its former value: US\$ 10 million, between 1997 and 2002<sup>[1]</sup>. Another revealing number shows Mercosur trade influx stagnation with third parties. It was kept below US\$ 180 million during the

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<sup>3</sup> Considering the international context, the installation of natural gas infrastructure took place with the consytruction of some other pipelines. Connecting Argentina and Chile, two more pipelines were built: in 1996, Bandurria pipeline, located in the extreme South, began to supply a petrochemical plant which produces methanol. In 1999, Atacama (Salta-Mellijone) started its operation in the North.

period between 1998 and 2002. Finally, the reducing of foreign investments portrayed appropriately the high degree of risk aversion of the international market and the almost bankruptcy of the block. In 2003, the foreign investments totaled US\$ 10 billion, five times less than in 1999<sup>[1]</sup>.

The economic conjuncture became a little worse in 2001, with the Argentinean's economy default and the end of the convertibility regime. Brazilian's electric energy crisis, known as "apagão"<sup>4</sup> caused the abortion of economy recuperation which the analysts were expected for.

### **The economic restart**

Only in 2003 the regional integration process recovered its impetus. The economical situation of those two countries started to re-equilibrate gradually which, added to the international trade expansion end up helping them. The favorable combination of national and international environments allowed the retaking of the integration process.

Between 2002 and 2006, world economy experienced five years of intense prosperity. The continuous growing of international trade and the increase of liquidity in the financial markets did not have any parallel in the last two decades of the last century. The increase of the prices commodities reflected the pressures of a growing demand and inflated the exports of Latin-American countries. That highly positive international context coincided with a re-equilibrium period of the national economies. Higher degrees of fiscal and monetary responsibility defeated inflation which contaminated the Latin American economic environment during part of the second half of the XX<sup>th</sup> century. The most remarkable result was the rapid reversion of the external accounts of South Cone countries: from net debtors to net savers in less than half a decade.

The restart of the economic growth was clear after the years of crisis between 1998 and 2002. Argentinean GDP, which had displayed a negative growth rate of - 3,1% , experienced a 9% a.a. average growing rate in the 2003-2005 period<sup>[1]</sup>. Similarly, the same tendency reversion occurred with Uruguayan economy. From a average GDP growth rate of -3,1% a.a., that economy experienced an expansion of 6,9% a.a., in 2003-2005 period. Brazilian economy's recovery is slower: from an average growth rate of 1,7% a.a. in the first period, the GDP expansion reached 3,6% a.a. in 2003-2005 period. Paraguay's economy also experienced a negative growth rate of - 0,4% in the first period, which increased to 3,3% a.a. in the second one<sup>[1]</sup>. For Brazil and Argentina, the increase of the investment rate, the continuous growth of domestic demand and credit expansion observed during 2006 and the first months of 2007 suggest that the current growth should be sustainable for more time.

Considering the low capacity of internal saving and therefore, the contribution of the foreign investments to the regions wealth, a remarkable aspect of the success of recent economy recovery was the rapid reduction of the external vulnerability. Currently the accumulated reserves of Brazil and Argentina reached US\$ 165 billion and US\$ 35 billion, respectively. In the past, both had to borrow IMF's money in an attempt to attenuate the effects of the financial crisis in 1999 and 2001 and the capital flee that followed them. In Latin America, the need of IMF's money which implied the surrender

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<sup>4</sup> Blackout



of the economic policy to World Bank has been always considered an assault to national sovereignty.

In 2006, the early debts payment made by both countries with IMF demonstrated the recovery of the external accounts of those countries. The investors rapidly recovered their thrust in those countries economies, which caused the fall of the sovereign risk premiums to the lowest levels ever observed for Brazil and Uruguay, and the Argentinean risk is now less than 15% above its minimum level. Those features showed how Mercosur countries knew how to take advantage of that favorable international conjuncture.

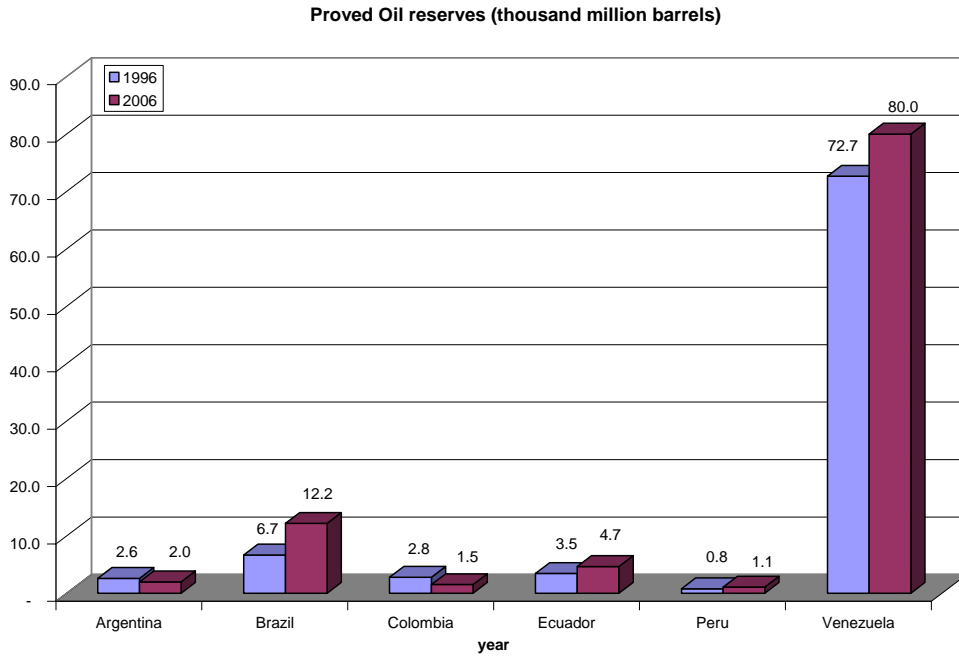
That recent growth explained the restart of the integration process, which was as intense as the economic recovery of the countries. Between 2002 and 2005, the intra-block trade influx almost doubled, reaching US\$ 21 billion in 2005, higher than the one observed in 1997 (US\$ 20,4 billion). The strength of the new commercial opening phase could be measured by the expressive increase of the third parties trade influx, which jumped from US\$160 billion in 2002 to US\$ 280 billion in 2005. Thus, in commercial terms, the latest growth phase allowed the recovery of the influx trade peak level reached in 1997<sup>[1]</sup>.

It cannot be disregarded that the numbers of the recovery and the reversion speed says nothing about the political changes or the new challenges. From 2003 until now, unbalancing among Mercosur members had risen and grown. The contract which consisted of a common external policy at the expenses of guaranteed access to the Brazilian market was no longer satisfactory to the minor partners. For one thing, the share of the partners in the total imports have fallen during the stagnation period, and never recovered its former level. For another, the minor partners feel harmed and tempted by bilateral agreements with the US. Industrial policies even more conflicting are added to growing unbalances. Mercosur project become more and more contested.

### III. Benefits of energy integration

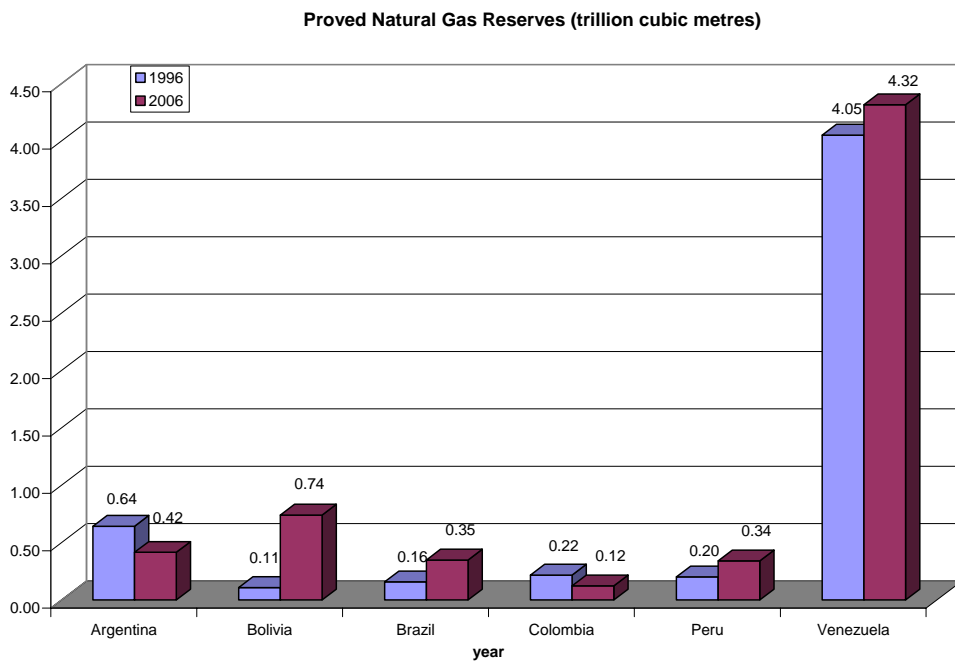
South America continent possess huge oil and gas reserves, as shown in Figures 1 and 2. The liberalization wave of the nineties, which allowed the entrance of foreign companies in E&P industry, not always provided a successful history, as can be seen in Argentina's case. Without an effective regulation, this country experienced a reduction in its O&G reserves, due to a lack of investment in new discoveries (Figures 1 and 2). O&G sector in Brazil, by its turn, has succeeded in its liberalization process, although the new entrants are almost always associated to PETROBRAS in E&P activities. The massive upstream investments provided the so dreamed self-sufficiency in crude oil. Similarly, very important natural gas reserves were discovered in Espirito Santo basin and Santos basin in the last few years.

The biggest O&G reserves are located in Venezuela, the only South American country which is an OPEC's member. Concerning gas reserves, Bolivia and Peru, especially after the finding of Camisea, are important suppliers of the region.



Data source: BP Statistical Review of World Energy 2006

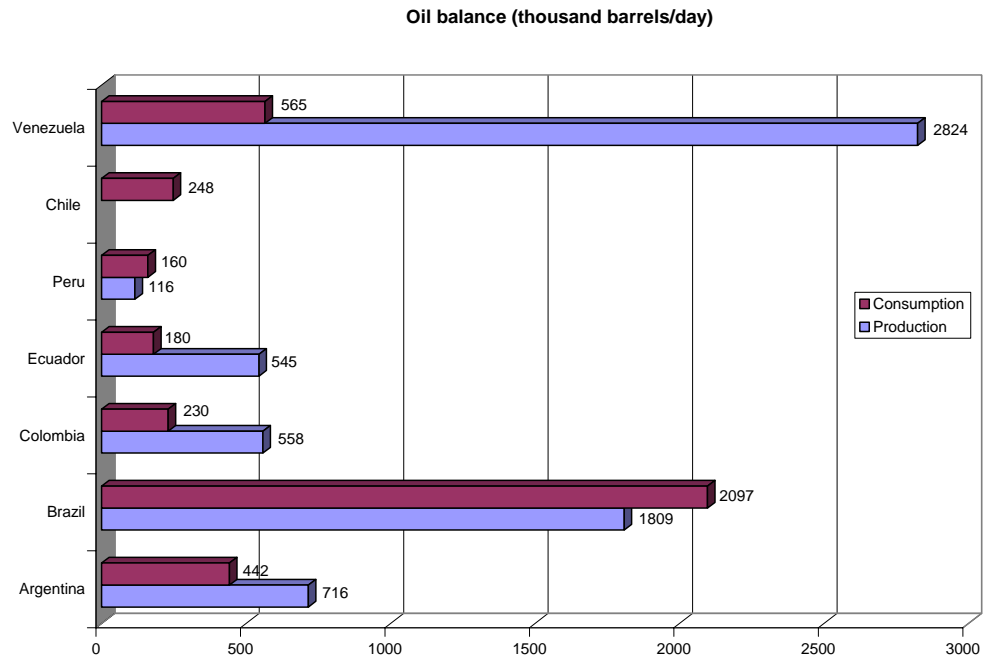
Figure 1 – Evolution of oil reserves in selected countries



Data source: BP Statistical Review of World Energy 2006

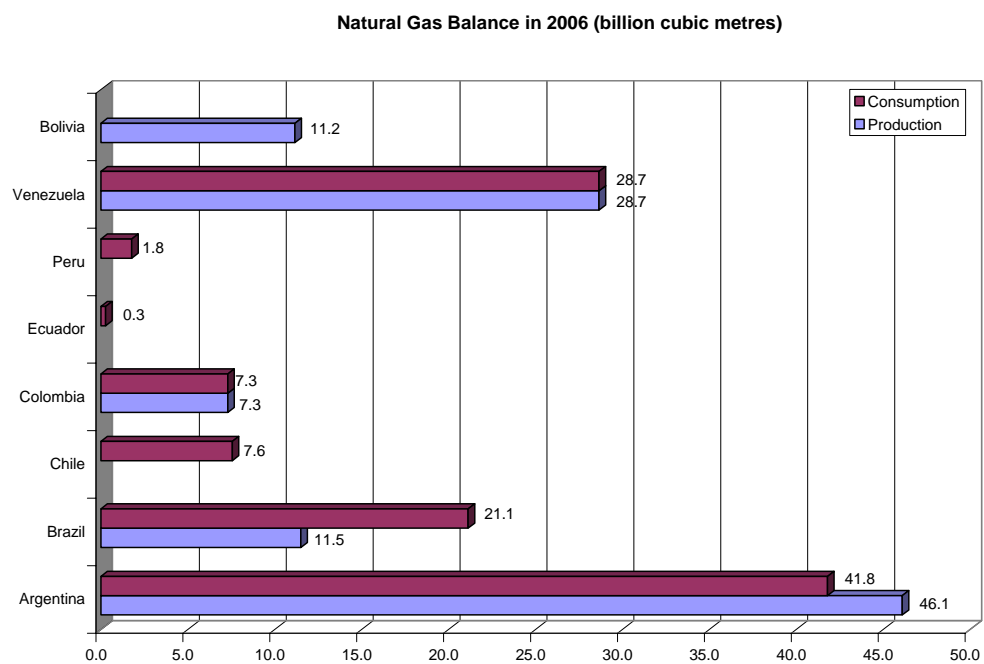
Figure 2 – Evolution of natural gas reserves in selected countries

Figures 3 and 4 present the balance between production and consumption in the region.



Data source: BP Statistical Review of World Energy 2006

Figure 3 – Oil balance in South American countries



Data source: BP Statistical Review of World Energy 2006

Figure 4 – Natural gas balance in South American countries

One can clearly notice that the main consumption is not located in the producer countries. In this sense, Bolivia and Peru will need huge investments in order to

monetize their gas reserves, which would allow the increase of their revenue derived from exports, once the consumer market of those countries is negligible. Venezuela and Colombia display an increasing domestic market, but gas production is limited by dependence on oil production, once their main gas reserves are of associated gas. As said before, Brazil is practically self-sufficient in oil, importing an small amount in order to compound the suitable basket to be refined by local facilities. Brazil's gas domestic market started its growing with the construction of Bolivia-Brazil pipeline, with constituted part of the energy matrix diversification strategy. Brazilian gas market is still under development and is very promising. This source corresponded to 9,4% of energy supply in 2005, with 46,8% of this amount for industries and 18% for power generation<sup>[3]</sup>. Chile is very dependent on O&G imports. Argentina's O&G markets are already mature, but natural gas prices artificially low had prevented new investments on infrastructure<sup>[4]</sup>.

Therefore, this frame points out to a very high degree of energy complementariness among South American countries. Furthermore, with the appropriate investment in physical integration (especially gas pipelines), the region not only would guarantee its energy security but also could supply other markets.

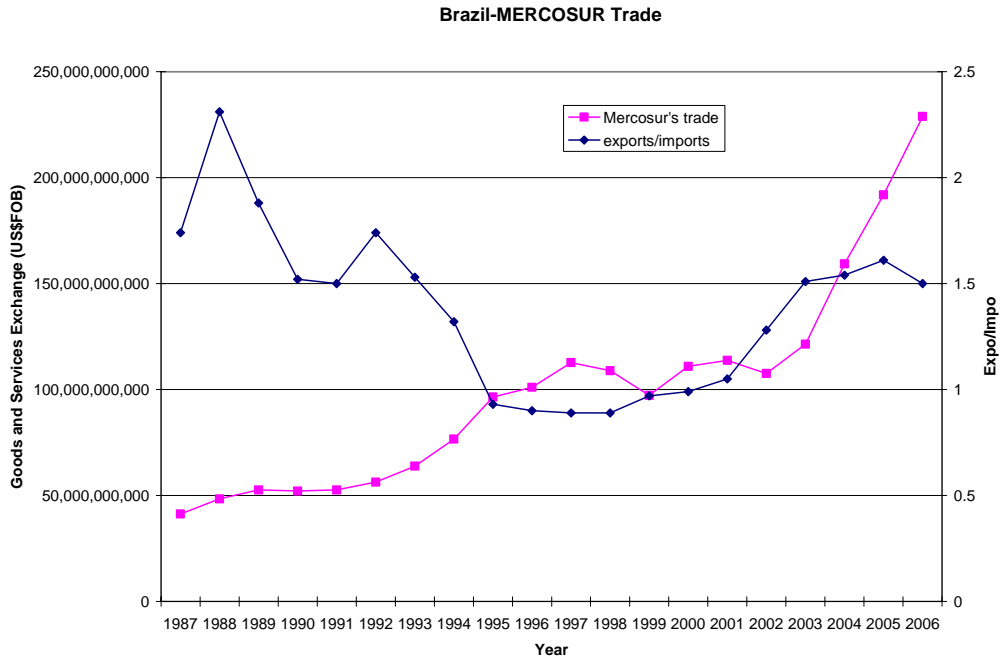
Concerning gas pipelines, recent work by OLADE has estimated the economic gain provided by gas integration in OLADE countries, from 2003 to 2018<sup>[5]</sup>. This work considered scenarios with two different levels of integration (low and high). Taking into account only economics gains related to gas natural transport costs and the volume of natural gas transported, the net gain of the high integration scenario would be of US\$ 90 bi until 2018, compared to the low integration one. Other benefits derived from energy integration are the scale economies, improved energy efficiency and system reliability and hydro-thermal complementariness. The formation of bigger markets increases the attractiveness of the region for investors<sup>[6]</sup>. Finally, the exchange of energy surplus helps to optimize production costs and reduce price volatility. Even the Argentinean market, the most developed in the region, has a consumption per capita much lower than the ones in U.S. and European Union, which suggests the existence of a potential market much bigger to be reached in the near future.

### III. Energy integration x Regional integration

Regional integration processes in South America has experienced a stagnation period in the last few years. Brazilian crisis in 1999, with the devaluation of the national currency (Real) and Argentina's economy default, in 2001, contributed to sharpen the difficulties and problems of MERCOSUR. The initial motivation of MERCOSUR, the enhancing of the trade among its subscribers, has reached a point in which the smaller countries seems to be unsatisfied, once the current trade reality does not fulfill their needs.

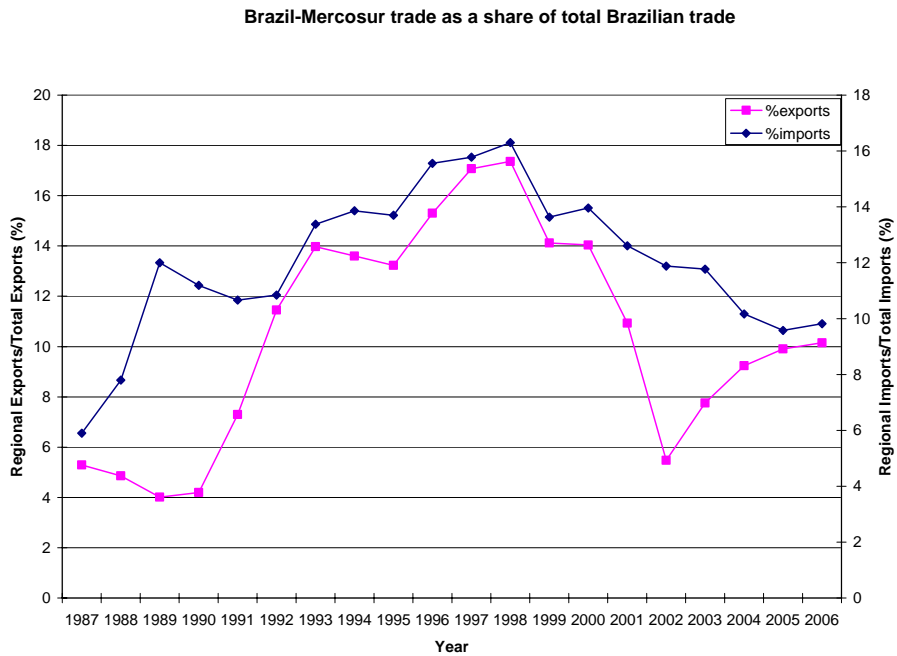
Although the volume of Brazil's trade with MERCOSUR continues to grow (Figure 5), the relative importance of MERCOSUR exchanges to this country has diminished in recent years (Figure 6).

The diversification of Brazilian exports, which the sell of huge amounts to China, a brand new partner, took an important part in this process. From this context, it can be concluded that a merely commercial aim was not enough to provide the deepening of MERCOSUR. Venezuela has recently abandoned CAN and waits for its acceptance as a new member of MERCOSUR.



Data source: Ministry of Development, Industry and Trade

Figure 5 – Brazil-Mercosur trade



Data source: Ministry of Development, Industry and Trade

Figure 6- Mercosur's share in total Brazilian trade

In 2000, the IIRSA (Initiative for South America Infrastructure Regional Integration) was created in order to enhance physical integration (transportation, energy and telecommunication sectors) within South American countries. For instance, an effective transportation system would cause a positive impact on trade. Once the countries finally recognized the importance of the physical integration for the developing of the region, and taking into account the energy complementariness discussed above, integration can be the new driving force for regional integration. Argentina is now under a big pressure with the threat of running out of natural gas, with accounts for around 50% of primary energy consumption. Brazil, by its turn, would keep on depending on imported gas, at least in short term. For one thing, the building of pipelines connecting energy markets of different countries is a link that would not be destroyed in the future. For another, building an energy network requires huge amounts of investments, with the corresponding sunk costs associated with this kind of business.

Therefore, considering the high level of risk involved in providing gas and electricity networks, it is very likely that those investments would only come true once institutional, regulatory and legal arrangements that are liable. On the other hand, the economical conditions of the main partners had never been so favorable: Argentina's economy is recovering, despite some inflation threat; Brazil has succeed in diminishing its chronic vulnerability in current transactions, by improving its primary *superavit*. In other words, the region is experiencing a period of economical stability. Therefore, if governments are truly interested in physical integration, the time to discuss a deeper integration process has arrived.

By the end of 2005, Argentina, Brazil and Venezuela signed a Memorandum about Gas Interconnection, for future signing of agreements and the beginning of technical studies to allow physical gas integration among those countries. Basically, that Memo marked the government's intention of performing or, at least, discussing gas integration, although GASVEN project has been surrounded by controversy, such as: environmental issues, the competition with the LNG alternative (for Brazil), not-certificate Venezuelan gas reserves, tariff discussions, wellhead gas price and so on.

There is some concern about Venezuela's gas reserves for this project. For one thing, a big share of Venezuela's gas is associated and, therefore depends on oil production, which is, by its turn, restricted by OPEC. For another thing, newspapers published specialists opinion who state that there would be necessary an investment of US\$ 15 billion to provide 150 million m<sup>3</sup>/day of production for supply GASVEN, which increases the pipeline costs to around US\$ 38 million. Although there are serious doubts about the feasibility of this project, it should be mentioned that, for the first time, trade was not the center of the regional integration debate.

Recently, Argentina announced the construction of the Bolivia-Argentina pipeline, a joint project with Bolivian government. By the end of last October, YPFB and ENARSA signed a bi-national supply contract for delivering of 7,7 M m<sup>3</sup>/day in 2007, between 7,7 and 16 Mm<sup>3</sup>/day in 2008-2009, and until 27,7 Mm<sup>3</sup>/day in 2010-2026.

Other important project, launched in 2005, is the so-called energy ring, involving Chile, Peru, Argentina, Brazil, Paraguay y Uruguay, with Bolivia taking part as an observer only. It is important to note that the bigger part of the ring is already built. The missing part is 1200 km pipeline which would connect Peru with the pipeline network of

Northern Argentina and Chile. The main obstacles to the project are the Bolivian offer to export natural gas from Peruvian ports, with advantages for the latter, and the refusal of the Bolivian government in taking part of the project, while its problem of access to the Pacific Ocean is not solved (KOZULJ, 2006). Another issue is related to the gas volume that would reach South Cone countries. Camisea and Pagoreni reserves are estimated to be of 300 million m<sup>3</sup>. In the next 20 years, the domestic market would consume around 112 million, and 140 million would be exported to Mexico. Unless new discoveries are made, there would not be much gas left to be consumed by South Cone countries. Nevertheless, the construction of the branch Pisco-Tocopilla would provide the entrance of natural gas in Chile and, in that case, Bolivian gas would supply the other countries.

#### IV. Issues on O&G integration

Concerning the O&G institution/regulation framework of the region, Venezuela and Bolivia, who recently has decided to nationalize their reserves, represent the reversal of the sector liberalization of the nineties.

Venezuela is the only South American country which has restrictions to foreign companies' E&P activity. The activities that take part of the O&G chain must be performed by the State, with the exception of transportation. Furthermore, Venezuelan Constitution obliges the State to possess the totality of PDVSA shares. The Hydrocarbons Organic Law (2002) has established that E&P activity should be performed exclusively by state-owned companies, or other controlled by the state. Such restrictions do not apply to non-associate gas fields, once their regulation is under the Gas Hydrocarbons Organic Law (2001) <sup>[7]</sup>. The Ministry of Mining and Hydrocarbons is responsible for the regulation of the gas transportation sector. The Resolution n. 194 of that Ministry delegates the attribution of investigate anticompetitive practices to ENARGAS (Ente Nacional del Gas), although the sanction application continues to be in charge of the Ministry.

In Bolivia, the upstream segments of the O&G chain are regulated by the Ministry of Hydrocarbons and Energy. Bolivian Hydrocarbon Law (17-05-05) represented a 180° change in Bolivia's O&G policy. The former Hydrocarbon Law (30-04-96) was market-oriented, and in accordance with the new economy policy established by Supreme Decree n.º 2160, which preached market liberalization and minimization of State role in economical activity. This decree increased the government take derived from E&P activities and caused a commotion among the foreign investors, like Repsol, Totalfina Elf and others. The Ministry, together with the state company YPF, is responsible for energy policy. YPF operates and/ or participates (through partnership with foreign companies) in all the activities of O&G chain. The Superintendence of Hydrocarbons is responsible for granting concessions, licenses and authorizations for regulated activities<sup>[8]</sup>.

Brazil has accomplished the liberalization of O&G sector with relative success. One can say that there is an equilibrium between State and market. Nowadays, there is no rule that prevents foreign companies to be players in the Brazilian market. The energy policy is made by the Ministry of Mining and Energy, advised by the National Energy Policy Council (CNPE). Petroleum, Natural Gas and Bio-fuels National Agency (ANP), which is in charge of the sector regulation, is a state organ provided with administrative

autonomy. ANP has a director board whose members have non-coincident mandates, which makes the decision process relatively protected from political influences. In E&P, a bidding process grants the winner the right to explore and produce O&G. The public offer of blocks acted as an incentive that made the Brazilian oil reserves almost duplicate in the last ten years. Very promising gas reserves were discovered in Espírito Santo and Santos basins. Nevertheless, the actual monopoly of Petrobras in transportation sector cannot be disregarded, as well as the fact that the majority of blocks has been explored by partnership between incumbents and Petrobras or by the Brazilian state company itself.

Argentina has completed its disastrous liberalization process, which has caused the depletion of its O&G reserves, mainly due to the lack of E&P investment. The creation of ENARSA represented the return of the State to O&G activities, as a reaction to lack of private investments that caused the reduction of R/P relationship. The economy default, in 2001, made the government establish price control in 2002, which has not only prevented new transport infrastructure investments but also induced a huge increase in domestic demand. This country was also unable to honor the supply contract with Chile due to gas scarcity. Those two features strongly contributed to current energy crisis experienced by Argentina, an undesirable event in a year of presidential elections. Currently, the energy policy of this country is made by the Secretary of Energy, together with the regulation organ ENARGAS, with are subordinated to the Ministry of Federal Planning Public Investment and Services. ENARGAS is responsible for gas transportation and distribution regulation, including tariffs. Nevertheless, as mentioned before, after the Government had fixed gas tariffs, they remain at the same level.

In Chile, there are many organs which account for O&G sector, the most important being the National Commission of Energy (CNE), presided by the Minister of Economy. Its Director Board is composed by Ministers of other areas, like Mining and National Defense and Planning. Its role is to regulate the activities of the energy industries <sup>[8]</sup>.

Concerning the gas transport activity, there are much more asymmetries, besides the nature of the regulator organism and its degree of subordination to the Government, such as tariff regimen, granting regimen, access and capacity resale, as reported in [8] and summarized here.

In Argentina, for instance, natural gas tariffs were determined using the price cap methodology, with contemplates the following principles: isonomic treatment to all companies, the tariff represents the companies' costs, inexistence of cross-subsidies among the users, tariff must enhance infrastructure investments and efficiency.

Tariff subsidies are allowed, although cross subsidies are forbidden by law. For domestic transport, maximum tariffs are establish, while for exportation, the legislation permits free negotiation between the parts. The granting regime is determined by the State, under three possibilities: concession, authorization or permission, for a period of 35 years, that can be extended by 10 years. The legislation regulates non-discriminate open access, through transparent and fair processes, with the reasonable tariff guaranteed by the regulator. Capacity resale is also allowed through public bidding.



Brazilian gas network regulation has three main characteristics: transportation activity vertical unbundling, negotiated open access and indirect tariff regulation. The Regulation Agency should establish criteria for determining tariff and should mediate the cases of disagreement between the parts. In this case, the Agency can determinate the transportation tariff. The exceptions to the rule of free negotiation are related to the cases which involve the Power Priority Program. Those cases are under an specific regulation. This country adopts the authorization regime to building and operating gas pipelines. That authorization can be granted since the petitioner had met the requirements defined by ANP Resolutions.

Brazilian legislation regulates open access. The Resolution n.27/2005 itemizes the aspects that should be covered by the natural gas transportation contracts, such as validity term, contracted delivery capacity by delivery point, tariffs and contracted capacities between reception and delivery zones. Capacity resale is allowed in Brazilian legislation.

At this point, it is important to remind that a Natural regime for gas pipelines, which can be granted by the Secretary of Hydrocarbons, through Gas Law is under discussion in the Brazilian Congress. The three proposals focused on open access, public bidding for new infrastructure, free negotiated tariffs and the kind of unbundling.

Bolivia adopts the concession public bidding as the granting regime, for a period of 30 years. The article 91 of the Hydrocarbons Law obliges the concessionaires to give 15% minimum of their transportation capacity to national industry users. Carriers are forbidden to be players in the commercialization market, and their participation in distribution and power generation markets is also restricted by local legislation.

Transportation tariff are calculated using two different methodologies: postal tariffs freely negotiated for internal and exportation contracts. Exception are made for projects considered to be of national interest. Bolivian-Brazil pipeline is an example of exemption to the tariff rule, for its strategic importance.

Open access is mandatory, unless the infrastructure owner is able to prove that there is no idle capacity in that particular pipeline. The legislation allows negotiated capacity resale.

In Venezuela, players are able to operate gas pipeline through permission, valid for 35 years maximum, renewable for more 30 years. The tariff are cost-based and the exchange rate between the American dollar and the bolívar is taken into account. Open access is freely negotiated, with the Ministry of Mining acting as a judge, in case of disagreement between the parts.

Uruguay natural gas transportation tariffs can be determined by contract (Cruz del Sur pipeline) or by the regulation organ (Litoral pipeline), considering postal calculation methodology. The granting regime considers both permission (Litoral pipeline) or concession (Cruz del Sur pipeline). All open access contracts must be approved by the regulation authority.

Concessions for transportation activity in Chile are granted by the Republic President, and can be temporary or definitive, the latter having unlimited validity over time. The

postal tariffs are established in contracts and the legislation accounts for negotiated open access. There is no rule concerning resale capacity.

From the above, it is easy to see why energy integration is so complicated. It could not be different, with the presence of such high degree of regulatory asymmetry.

Table 1 summarizes the differences among the South American countries, related to natural gas transportation.

	<b>Argentina</b>	<b>Bolivia</b>	<b>Brazil</b>	<b>Chile</b>	<b>Uruguay</b>	<b>Venezuela</b>
<b>Granting Regime</b>	Concession, Licensing or Permission, after public bidding	Concession after public bidding	Authorisation	Concession	Concession or Permission	Permission
<b>Tariff Regime</b>	Regulated distance-based tariffs, applied by zone	Freely negotiated postal tariffs	Indirectly regulated tariffs, based on service costs	Postal tariffs established by contracts	Postal tariffs established by contracts	distance-based tariff
<b>Capacity Resale</b>	Regulated	Regulated	Regulated	Unregulated	N/d	N/d
<b>Access</b>	Regulated open access	Regulated open access	Negotiated open access	Negotiated open access	Negotiated open access	Negotiated open access

Source: Trade and Transportation of Oil Products and Natural Gas Department (SCM)/ National Petroleum Agency

As show in Table 1, asymmetries in issues like open access and tariff regime could be crucial for the energy integration process. Considering, for instance, GASVEN project, it seems very unlikely that Brazilian consumers would accept to pay a postal tariff to subsidize gas for Argentina.

In terms of energy regional institutions, three organisms seem to be the most relevant: CIER, OLADE and ARPEL. The Regional Energy Integration Commission (CIER) was created in 1964, with the mission of promoting and supporting the integration among the regional electricity sectors through a group of actions<sup>[9]</sup>. Those actions included project development, professional formation, statistic data construction, technical specification harmonization, among others. A year later, ARPEL (Latin American Reciprocal State Oil Assistance Association) rose with the aim of promoting cooperation and assistance among its members<sup>[10]</sup>. Later ARPEL was converted in an association of 29 O&G state and private enterprises and institutions, with actuation in Latin American and Caribe which represent more than 90% of the regional O&G operations. ARPEL basically uses the same tools as CIER, such as organizing seminars, elaborating technical documents, and so on. OLADE was created in 1973 with 26 Latin American and Caribbean countries, in a context of international energy crisis. OLADE's mission is to promote agreements among Members and perform actions to satisfy their energy necessities<sup>[11]</sup>. The institution develops energy data systems, makes technical studies and organizes training courses and seminars. Those three institutions have apparently the same *modus operandi*, as well as similar attributions.

With the creation of Mercosur, energy matters of the signatory countries began to be discussed in the scope of the SGT-9 (Working Sub-group n.9). SGT-9 is a technical

group of discussion and negotiation composed by member of the four countries which is subordinated to the Common Market Group (GMC). GMC, an organism with executive character responsible for adopting the measures for the accomplishment of the decisions adopted by the Common Market Council (CMC). There are 14 STG, discussing and negotiating subjects like industry, environment, transports and so on. Those groups are composed by people from the state staff. As reported by Pena and Rozemberg <sup>[12]</sup>, the inexistence of an independent technical instance is, without any doubt, one of the most evident Mercosur's institutional deficits, once State staffs of each country were not able to get rid of their national political dependence, which made consensus reaching far more difficult. Besides the SGTs, there are *ad hoc* groups and Specialized Meetings. The complexity of that institutional frame generates slowness and inefficiency in the GMC production, since its members are unable to solve possible divergences arisen from the discussion in SGTs, once they do not have expertise in all the subjects submitted to their decision. At this point, it is very important to remember that all decisions in Mercosur are taken by consensus.

In 2000, IIRSA (Initiative for Regional Infrastructure South American integration) was created with objective of promoting the developing of infrastructure (energy, transportation and communications) under a regional point of view. To do so, the countries have defined ten Integration and Developing Axis (EID) which articulate the South American continent. After establishing EIDs, physical infrastructure requirements for each are determined, aiming to stimulate the regional developing and improving life standards of the local population. The investments portfolio of IIRSA for the period 2005-2010 includes only one energy project: the Northeast Argentinean pipeline. IIRSA is integrated by twelve countries and counts on the support of three multilateral banks, including BID (Inter-American Development Bank). IIRSA initiatives do not seem to have a strong connection with the aim of reducing poverty and improving life standards of the population. It simplistically assumes that physical integration will itself result in sustainable human development, which is fairly unlikely <sup>[13]</sup>.

Recently, the declaration emanated from 2007 South American Energy Summit, in Margaritas Islands, formally established the creation of the South American Energy Council, composed by the Energy Ministers of each country. Moreover, the Council was assigned with the task of present a proposal for the region's strategy in energy matters, to be discussed during the Third South American Nations Summit. Although the declaration seemed to be a good-will demonstration of the countries involved, it hardly provide a concrete contribution to the progress of energy integration process, once topics considered in the document have been extensively studied and discussed in the forums above (OLADE, CIER, and so on). Once more, energy integration, exactly as regional integration lacks operationalization procedures, and that involves strong institutions and an effective rules production and internalization systems.

In the same Summit, the former CASA (South American Nations Community) was re-launched with the name of UNASUR (South American Nations Union). By the time of CASA's creation, the formation of a South American free trade zone was agreed, but a deadline to do so was not established, as was Chile's desire <sup>[14]</sup>. This time, it is expected for the Third Heads of the State Meeting, in the next January, a proposal for the UNASUR Constitutive Agreement, following the idea of approximation between MERCOSUR and CAN (Andean Nations Community). Some analysts plead that

UNASUR's creation questioned the very existence of Mercosur as it was conceived in 1991<sup>[14]</sup>. Moreover, it can indicate Brazil's option of being powerful instead of being integrated, once UNASUR becomes its (strategic) long term goal to be achieved, with Mercosur being a tactic objective<sup>[14]</sup>. Anyway, the success of UNASUR will depend on the legal/institutional scheme. If its conception approaches the Mercosur's arrangement, the new initiative will be destined to fail, especially if the ineffectiveness of the institutional design, the rules internalization process and the controversies solution mechanisms was replicated in the new agreement.

Anyway, it becomes clear that energy integration and regional integration processes currently share some similar institutional/legal challenges. Moreover, the dichotomy between speech and practice must be solved.

#### IV. Final considerations

It is not possible to understand the current challenges of energy integration without considering the South American transformations in the beginning of the XXI<sup>st</sup> century. The financial crisis of 1999 and 2001 indicated the end of liberal age that characterized the slow transition from the military regimes to democracy. The effect of the structural reforms and of the opening of the economies came to exhaustion, in the same measurement that capital fled and the big economic projects were postponed. The two major countries were caught by recession and, for the first time after the dictatorships' fall, the population voted for and elected left-wing parties. The same happened in other South American countries, in such an extent people talked about a red wave reaching Brazil, Venezuela, Argentina, Uruguay and later, Bolivia, Ecuador and Chile. Even in Paraguay 60 years of Colorado's Party domain are jeopardized by the threat of the election of a left-wing leader.

The new speeches of the left-wing leaders do not regret their Latin American origins, with strong anti-North American and nationalist bias. The elector rapidly related the failure of the right-wing governments with respect to the aims of reducing poverty and improving income distribution to the ineffectiveness of the liberal reforms promoted by them. In all cases, the left-wing speech brings back the voluntarism to the trade and industrial policies, the state planning and the control of the natural resources. Despite of different tones, the recent favorable context allowed not only the implementation of specific programs to support the poorest population by those governments but also the achievement of a fair income distribution, which suggests the perspective of continuity of the left wave.

Concerning energy integration, it is difficult to evaluate the effects of the political transformations due to its ambiguity. In Latin American scenery, the liberal reforms did not achieved the expected results. The Brazilian blackout in 2001 and the problems faced by Argentina in the last four years related to gas supply and depletion of O&G reserves suggest what would be the main restriction to the sustainability of the high growth rates in the next few years.

In the international context, the huge increase of oil prices, from US\$ 12/barrel to US\$ 82/barrel in 2007, have placed energy on the top of the geo-politic international agenda. The refreshed nationalism met sustainability by defending new energy policies which generated conflicts between Argentina and Chile and between Brazil and Bolivia.

Ironically those disputes were related to the same projects that were the starting point to energy integration in the region.

Another important issue is related to the instability of rules. The unilateral rupture of the gas supply contract by Bolivia, together with refineries confiscation has caused severe losses to Petrobras. The immediate reaction was the canceling of GASBOL duplication. Some analysts believe that Bolivia's gas crisis will slow down the process of energy integration in the region <sup>[15]</sup>. This event, together with the fact that Argentina interrupted natural gas supply to Chile, in order to deal with the shortage caused by the price-controlled demand growth. This generated uncertainties and suspicions among the investors, which can inhibit future investments on these countries. Furthermore, the crisis motivated the importing countries to make an extra effort for increasing domestic supply. Following this tendency, PETROBRAS has announced its investment plan for 2007-2011. PETROBRAS and partners foreseen investments (2007-2011) in the Brazilian natural gas chain reach US\$ 22,1 billion, aiming the reduction of the external dependence on imported gas. PETROBRAS strategy is focused on three targets: developing production of non-associated gas, investments in LNG infrastructure to provide flexibility to mitigate risks of supply failure due to abnormal events and investments of general infrastructure to develop Brazilian market <sup>[16]</sup>. PLANGAS involves investments in two fluctuating gasification plants (in Pecem and Rio de Janeiro) which would allow LNG importation, probably from Nigeria. Furthermore, the Brazilian company intends to make a strong effort for developing natural gas fields located in Espírito Santo and Santos basins. Petrobras strategy aims to diminish the dependence of Brazil on Bolivian gas.

At least to the foreign public, the company does not mention investments in the GASVEN project as a priority. Other feature that may help Brazil to manage its gas supply problem is its investment in flex fuel thermo-power plants, which will be able to operate using LNG, diesel or ethanol.

In that disturbed environment, it seems very unlikely that GASVEN project would become a reality. In a regional environment frequently poisoned by xenophobic approaches, even the bio-fuels insertion in the energy matrix could be a potential source of conflicts. Central piece of the Brazilian trade policy, bio-fuels are seen with caution by Venezuela, big oil exporter, and as an imperialism tool by Bolivia and Paraguay, where the expansion of the agricultural Brazilian frontier (through soy agriculture) is seen as a threat of national sovereignty. Regional integration, the main subject in presidential diplomacy agendas, should overcome the exaggerated nationalism, and political rhetoric should give place to common coordinated actions.

As already seen, the governments must concentrate their efforts in order to minimize regulatory asymmetries. Concerning gas transportation, those asymmetries involve grant and tariff regimes, open access and capacity resale, as well as technical and quality natural gas specifications. Although being out of the scope of the present article, another regulatory issue that should not be disregarded is the environmental policy.

In terms of institutional issues, energy and regional integration are now in same crossroad. For one thing, the existing energy institutions do not possess any executive attributions. The topics negotiated in the scope of the energy subgroup must be evaluated by GMC, in order to make a decision. The lack of effectiveness of Mercosur institutions and the gap between the production of rules and their internalization by the

signatory country certainly affect the credibility of the integration scheme, which is quite critical in an political environment of uncertainty and suspicion.

At this point, it is important to notice that the state companies are in fact the main energy integration vectors. On the contrary, most of the energy investments during the nineties were made by private companies. For one thing, that change could be an advantage, since the state companies generally execute energy policies of their respective governments. For another, they follow distinct entrepreneurial strategies, depending on its share profile, expertise, and financial capacity. The rich PDVSA acts under a constitutional restriction of being a 100% state company. Petrobras, which has money and expertise, is controlled by Brazilian government, but its strategy reflects the fact that the company must present accountability reports to its investors, once it has bonds and shares being negotiated in the New York and São Paulo Stock Exchanges, respectively. The Argentinean ENARSA is a new company created two years ago and the Bolivian YPFB does not have expertise for even run a refinery by itself.

Therefore, local governments must make up their minds about their own strategies for their countries development and think in which way gas integration is important to achieve this goal. In other words, despite energy integration decision is political, one must consider that “the emphasis on ideological aspects not necessarily coincides with reality”<sup>[17]</sup>. This author reminds us that the huge pipeline network connecting the former Soviet Union to the rest of Europe was built during the peak of the Cold War. Therefore, when more important interests are present, political conflicts, real or created, can be overcome. Another useful thinking for the present discussion comes from the sociologist Raul Sohr<sup>[18]</sup>. He states that, if energy is treated as a simple raw material, without strategic importance, the integrating point of view makes no sense, because all the choices would be only ruled by the economic logic of profit maximization. If, in the other way around, the relevant features are energy security and a sustainable development with shared benefits for all society, the growing importance of the energy integration process is clear.

Still concerning energy integration, it seems that Brazil is looking for a solution on its own, which may turn the energy integration into a non-viable project, considering its market size. In other words, although the Brazilian governments disposition to negotiate, Petrobras behaviour suggests that this country do not expect to rely on gas imports from its neighbours. The same statement applies to Chile, with its investments on LNG plants. It seems that countries like Argentina and Brazil do not seek for integration, and their behaviour points out to a desire of complementariness of their energy matrix. It is important to remember that an energy integration process without Brazil and/or Bolivia makes no sense.

The success of the energy integration process will depend on its relationship with regional integration itself. Otherwise, it will be transformed into a physical interconnection with any political commitment and without any intention of driving the sustainable developing process in the region (Honty, 2006). To do so, as pointed by this author, extreme nationalism must be put aside. Furthermore, some loss of sovereignty must be allowed in Mercosur or any other regional integration scheme.

In that sense, energy may be a integration element or a desintegration factor.

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