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Pereira, Joana Castro

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Economic and social development is inseparable from energy, therefore, since the second half of the twentieth century, some of the major South-American regional actors have been seeking to implement and strengthen projects regarding energy production and energy integration. Thus, energy is a common interest in the region. Furthermore, South America reveals a significant potential to move towards a low carbon economy and Brazil, as an important green pole in the region and the central figure in t...

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**GREEN ENERGY INTEGRATION  
IN SOUTH AMERICA:  
A WINDING PATH**

**Joana Castro Pereira**

Professora Auxiliar da Universidade Lusíada - Norte (Porto)

mail@joanacastropereira.com

**Abstract:** Economic and social development is inseparable from energy, therefore, since the second half of the twentieth century, some of the major South-American regional actors have been seeking to implement and strengthen projects regarding energy production and energy integration. Thus, energy is a common interest in the region. Furthermore, South America reveals a significant potential to move towards a low carbon economy and Brazil, as an important green pole in the region and the central figure in the process of energy integration, seemed to be in the position to foster cooperation around green energy integration. However, there are a number of challenges to the achievement of such an ambitious goal, especially those associated with the Pacific Alliance, which has been increasing Mexico's influence over South America, and the Brazilian political, economic and social situations' deterioration from 2013 until today.

**Key-words:** South-America; Brazil; regional integration; energy; low carbon economy; Pacific Alliance

**Resumo:** O desenvolvimento económico e social é indissociável da questão energética, de modo que, desde a segunda metade do século XX, alguns dos principais atores regionais sul-americanos têm vindo a procurar implementar e fortalecer projetos no âmbito da produção e integração energéticas. A energia é, portanto, um interesse comum entre os países sul-americanos. Ademais, a região revela um potencial significativo para avançar rumo a uma economia de baixo carbono e o Brasil, enquanto importante polo verde na região e principal ator do processo de integração energética, poderia promover a cooperação em torno da integração regional verde. No entanto, existem vários obstáculos à concretização de um objetivo tão ambicioso, sobretudo os que se encontram relacionados com a criação da Aliança do Pacífico, que tem vindo a aumentar a influência do México na América do Sul, e a deterioração da situação política, económica e social brasileira desde 2013.

**Palavras-chave:** América do Sul; Brasil; integração regional; energia; economia de baixo carbono; Aliança do Pacífico

## INTRODUCTION

South America is one of the most vulnerable regions to climate change. The direct and indirect effects of this threat may dramatically influence the regional patterns of demand, supply and investment, as well as business operations (IPCC, 2014). However, the regional carbon emissions profile is quite unique, as it focuses on deforestation, agriculture and cattle raising, which points to a significant potential to move towards a low carbon economy (Viola & Frachini, 2014). Unlike many emerging countries, whose electric energy comes mostly from fossil fuels, South America's electricity is mainly hydroelectric and the continent is extremely rich in natural resources, thus revealing the possibility of a strong focus on renewable energy. Besides, the definition of a strong strategy for biofuels could boost regional integration and elevate the bloc to a global leadership position in the production and supply of such fuels. The generation and supply of clean, renewable energy at such a scale could set the foundation for a global biofuels market architecture, diversified in terms of producers and consumers, which could open the door for developing countries to take their comparative advantages and bet on a large scale in this area. These aspects reflect an important regional advantage and seem to open the way to a low carbon economy in the continent (Pereira, 2013a; Silva, Pereira, & Costa, 2014).

Nevertheless, oil and gas are the major focus of the projects of energy cooperation in South America (Ernst&Young, 2014). Furthermore, the issue of the increased energy demand is a challenge of enormous proportions for the region, although recent developments point to 'the end of an extraordinary cycle of growth that has transformed much of the continent' (Talvi, 2013) – after a decade of fast economic growth, rising incomes, wealth redistribution, foreign investment, easier access to low-cost capital and high commodity prices – something that can undermine the longer-term economic prospects, social stability and fight against poverty in the region. The last decade's scenario resulted in a growing impact on the industrial and residential demand for electricity and consequently to a larger amount of CO<sub>2</sub> emissions, as the middle class increased. Still,

after growing by an average of 4.3% in 2004-11, the region's economies managed just 2.6% last year [and] hopes of acceleration this year are being dashed (...) [specially because] the region's traditional economic frailty will now be exposed as commodity prices fall (The Economist, 2014, p. 35).

If South America wants to avoid a situation of economic upheaval, a long-

term view of economic growth is extremely important. Thus, keeping in mind the dangers associated with climate change and the importance of energy in any society, regional integration based on renewable energy sources seems to be fundamental (CEPAL, 2011). Additionally, regional leaders should not neglect the fact that their countries rely mostly on hydroelectricity, an extremely vulnerable source to climate change impacts, which can jeopardize the development of the South American bloc (SELA, 2012).

Regarding such threats, energy integration in the continent seems the best solution to meet some of the challenges that lie ahead, as there is a strong possibility of productive complementarity between countries, able to ensure energy self-sufficiency (Castro, Leite, & Rosental, 2012; Coviello, Gollán, & Pérez, 2012). Estimates about future electricity needs suggest hydroelectric integration, since only a small portion of the hydropower potential of the various countries is being used, so it would be possible to fulfil regional energy needs until 2030 (Agência Senado, 2013). Apart from hydroelectricity, regional characteristics such as land area, the abundance of water resources, the humid and semi-humid climate in most of the region, the huge amount of land yet to be cultivated and the predominance of sugar cane (very energy efficient) (Viola, Franchini, & Ribeiro, 2013; Souza, Victoria, Joly, & Verdade, 2015) could also be an asset for the region.

Based on national, economic and political interests, Brazil has used South America energy integration processes as vehicles for consolidating its regional leadership (Pereira, 2013a). As the largest economy, the largest market and the holder of the largest generating facilities, as well as of the best technology, experience and a bank (BNDES – National Bank for Economic and Social Development) capable of supplying the required funding, Brazil has emerged as the central figure in the process of energy integration (Oliveira, 2012). The country seemed to be in a privileged position to lead the transition to a low carbon economy in South America – as the great green pole of the region – and, in parallel, actively participate in a joint secure energy supply structure in the region with the other industrial economies, due to its vast potential in renewable resources with low opportunity costs (Pereira, 2013b). Moreover, the efficiency of Brazilian water reservoirs is lower than previously believed and 55% of its hydropower potential is under the same kind of climate vulnerabilities (Schaeffer et al., 2008), so the integration would also be extremely beneficial for the country, because in many South American countries the territorial dimension and internal energy markets would not be able to consume all the generating capacity of new hydroelectric plants, a surplus which Brazil could absorb. Furthermore, concerning biofuels, the size of the Brazilian market and the country's technology could function as important elements towards regional integration also based on these energy sources (Castro, Leite, & Rosental, 2012). The 2012 drop in ethanol production, a very important energy source for Brazil (Viola, Franchini, & Ribeiro, 2013), is, besides all environmental imperatives, another factor of interest for the country to foster the energy integration of the

South American region around renewable energy sources such as biofuels. Could Brazil lead the region towards a low carbon economy? In other words, could the country promote in South America

a system of economic activities related to the production, distribution and consumption of goods and services that result in improved human well-being over the long term, while not exposing future generations to significant environmental risks and ecological scarcities? (UNEP, 2012)

This article argues that, despite all the benefits associated with the implementation of a regional energy integration process, there are a number of challenges to the achievement of such an ambitious goal, especially those related with the Pacific Alliance – which seems to be reducing Brazil's influence over South-America – and the Brazilian domestic situation in recent months.

## **BRAZIL'S REGIONAL POLICY AND ENERGY INTEGRATION IN SOUTH AMERICA**

Since the 1990s South America has been the major reference for Brazil's international identity and the arena from which the country projects itself to the world (Saraiva & Valença, 2012; Lafer, 2013; Pecequillo & Carmo, 2015).

During Lula da Silva's presidency, Brazil envisaged South America as a vehicle for its independent and sovereign insertion in the continent, as well as in the international stage – the region should not be included in any of the new centers of power to be, in itself, an important international player, an alternative center of power. The country has tried to demonstrate that it may assist in the reduction of international tensions towards an international system guided by balance (Jesus, 2014; Pecequillo & Carmo, 2015). This strategy has largely benefited by the absence of strong government policies of Barack Obama for South America – Brazil was able to fill this gap with technical cooperation projects, essential in the Brazilian perspective to sow and germinate the seeds of confidence in other countries, although the country's primary objectives may not be the most altruistic.

Brazil's foreign policy towards South America involves the construction of a region of influence and is part of the national development project of Brazil because, through regional integration, the country acts in order to strengthen its economy and political power (Saraiva & Valença, 2012). To this end, the BNDES financed the construction of infrastructure and technical cooperation in South America, projects conducted by Brazilian companies, so regional cooperation and integration from different government agencies are linked to Brazilian development. The Brazilian State promotes, directly or indirectly, the presence of national, public and private companies in neighboring countries, boosting the exploitation of natural resources and the acquisition of local companies, actions based on grant funding and state political support. The same happens in the

financial sector, with the progressive internationalization of Brazilian banks (Sorj & Fausto, 2011).

Brazilian government boosted the IIRSA (Initiative for the Integration of the Regional Infrastructure of South America), the construction of the CASA (South American Community of Nations), now UNASUR (Union of South American Nations), declared the undisputed priority of South America to its foreign policy, encouraged energy integration projects and infrastructure – although the energy integration projects effectively implemented are very limited – sought the expansion of MERCOSUR (Southern Common Market) and promoted Brazilian investments in the region, in order to assume a much more visible leadership of the regional integration process, directed to physical, energy, institutional and social aspects, without neglecting the commercial sphere (Pecequillo & Carmo, 2013). Brazil tried to lay the groundwork for a new South American identity, fundamental for transforming the region into a center of attraction for investments, with a broad market that could boost relations with the rest of the world. The country has signed several agreements of cooperation in the production, commercial and financial spheres with countries of the region, in which the BNDES has played a major role through the extension of credit facilities for mutual projects and commercial exchange. Moreover, South America is an important space in the international expansion of Brazilian companies and currently the region accounts for about 20% of Brazilian exports (Santos, 2013).

Holding one of the best structured models of the region (as well as continental, demographic and economic dimensions) – with capacity to guarantee the expansion of power generation and transmission at reduced rates based on a fully national funding – Brazil could contribute to solving the future crisis of electricity, foster long-term planning and energy policies, stimulate investments in renewable energy (especially regarding hydroelectricity), assist in trying to reverse the rising rates trend and in the productive integration of the region, etc. Since the country has a consistent electrical system of large proportions, its model could act as a catalyst and an example for the regional energy integration process, as well as for the reforms which need to be undertaken, with a view to overcoming the increasing energy demand crisis. This would contribute to economic growth and social development in South America. In terms of biofuels, the Brazilian market has the necessary scale in economic terms for South America to increase its energy supply (which would reduce regional dependence on oil) and the country's technology could be synonymous with safety energy for South America. Therefore, it would be easier to attract productive investments (Pereira, 2013a). During Lula's presidency, it seemed that Brazil had not only technical and economic potential to lead a green energy integration process in South America, but also political potential to do so.

Nevertheless, even though during her first term Rousseff followed the same guidelines as of Lula's foreign policy – and the promotion of Brazil as a regional leader is one of these guidelines – her diplomacy sought to achieve

those goals with less activism and more external constraints. Focusing on the diplomatic trips made by Dilma Rousseff, one notices that the president prioritized Mercosur's members, especially Argentina and Venezuela, which are confronted with serious domestic problems, but one also notices that there was a reduction in the number of diplomatic trips to South American states, with the exception of Argentina. In fact, Brazil's efforts are now more reactive than proactive. Additionally, in Rousseff's government vacancies for diplomatic posts were reduced, which reveals some contention in this area and reflects a less assertive Brazilian foreign policy. It seems that the president emphasizes internal politics at the expense of external politics (Cornetet, 2014). So, there is a large reduction on Brazil's external activism and the country's regional initiatives are smaller and less audacious (Cervo & Lessa, 2014), making it fair to assert that the political potential Brazil revealed in terms of foreign policy while Lula da Silva was the country's president is diminishing. The present government seems to be making 'a restraint on continuity' (Cornetet, 2014), but Dilma's less activism is not the only obstacle to the promotion of a green energy integration process in the region.

### **SOUTH AMERICA'S INTEGRATION AND BRAZIL'S LEADERSHIP: A (VERY) LONG-TERM PROJECT FULL OF CHALLENGES**

South American countries have no consistent relation strategies with Brazil. In many of them, foreign policies fluctuate according to the political and economic visions of its rulers and, in the internal sphere, there is a significant number of strong divergent perspectives about the goals to be achieved with the Brazilian neighbor. The region is quite heterogeneous, marked by strong structural asymmetries, social difficulties, low degree of interdependence and a historical record of strong political and economic instability hindering the path towards integration, which should thus be seen as an ambition for the long-term (Malamud, 2013). In fact, South America is a region to be built in terms of the density of its internal flows, the building of internal networks, the intensification of social integration and even the creation of a self-identity (Couto, 2010). Additionally, it is the most unequal region in the world.

There are significant obstacles to further integration of the South American region, such as the low number of regional institutions, the lack of economic coordination and the minimal social participation in the integration process. A project like this among middle and low income countries seems quite complex, even taking into account the preferential relations historically signed with developed countries. In addition, the region has a difficult geography, which increases costs and complicates communications and the free movement of people, and involves complex issues that seem unresolved such as border disputes. Still, among some countries, there seems to have emerged a certain



concept of regionalism which involves confidence in the region's ability to achieve a certain distance from the US, a trend driven by fear of the North American and European protectionism due to the international economic crisis. However, serious doubts arise regarding the regional capacity to coordinate policies, since the rise of governments with apparent ideological affinities has not been a galvanizing factor in the strengthening of integration policies (Pereira, 2013a).

The financial crisis also contributed to increasing economic disparities in the region, giving rise to new tensions and disagreements between regional governments and Brazil. Almost all countries in the region faced fiscal constraints and difficulties in financing economic and social projects planned before the rise of the international crisis<sup>1</sup>. These aspects clearly reveal the difficulties of the South American project, which culminate in the absence of continuous regional objectives. There is a fragmentation and a polarization of the plans for the international integration of South American countries, which slowed the process of regional integration, although there is a strong rhetoric in favor of this process. This fragmentation is linked to the emergence of nationalist governments, strongly supported by the poor factions of society, bitter critics of the global markets, which in practice divided the countries between those in favor of openness to international markets and those which support a new model. Even the ones which look more favorably upon the liberal paradigm are also not averse to the protection of some of its local economic sectors, seeking some autonomy (Fiori, 2011; Malamud, 2013; Almeida, 2013).

Furthermore, in relation to its South American neighbors, Brazil takes a selective approach based on a strict appraisal of its national interest, placing regional interests in the background whenever they collide with its own national goals. This is underlined by the constant Brazilian hesitation in supporting regional institutions and rules that reduce their autonomy. Also, the levels of social and cultural integration, despite the rhetoric to the contrary, remain very low, which profoundly complicates the construction of a cohesive regional identity. Likewise, it is important to mention two weaknesses that have been recently becoming increasingly apparent in the region: the minimal improvement in education and the relative lack of innovation and competitiveness by South American firms, aspects that can also hamper the energy integration process (Schenoni, 2015).

In parallel, the restructuring of global power that occurred in the first decade of this century, translated in the development centered in countries like China, India, South Africa, among others (non-core nations), as well as changes in the distribution of Brazilian foreign trade, emerged as elements of deceleration of the regional integration process, since Brazilian elites turned part of their attention to other projects of international projection. Another important point is that financial cooperation was one of the relief elements of Lula's diplomacy, increasing credit facilities and loans to Brazilian South American neighbors through BNDES, IIRSA, etc. However, the truth is that there is not an effective

commitment to funding projects guided by a vision of integrated development of the region and, in many cases, the Brazilian resources destined to its neighbors are fairly low. Likewise, there are profound restrictions with regard to hiring local vendors for BNDES financing when it comes to the execution of works in the region. Concerning IIRSA, South American nations do not benefit equally from the initiative because most of the benefits granted by it are often channeled into Brazilian projects, whose main focus is to promote the exportation of its products to the Pacific region. Apart from this aspect, it should be borne in mind that the main companies involved in IIRSA projects are Brazilian and all receive funding from the BNDES to carry out the necessary works in neighboring countries. So it seems fair to say that the IIRSA is, above all, a space where Brazilian interests converge with those of companies and financial institutions in Brazil. This fact translates into imperialist interpretations of Brazilian economic expansion and a serious risk of political tensions (Spektor, 2011).

Thus, the small forwarding of financial and institutional resources for projects and mechanisms of supranational nature and the promotion of Brazilian interests in areas that, from a political point of view, affect local nationalist notions are two compelling characteristics of the Brazilian foreign policy for South America. There is, in fact, an absence of a long-term strategy on the part of Brazil for the region and the current strategy does not seem to be able to get enough support within the Brazilian society nor the acquiescence of the neighbor countries. The Brazilian political involvement in local crises, the stock trading actions and the increased investments in the region have not been able to conquer a solid support for Brazil's leadership on regional issues. South American countries see Brazilian companies allied to the Brazilian State permanently present in their territories, which is creating fears about the Brazilian purposes – imperialist, in their view. In this context, the liberalization of trade flows and investments, as well as its strengthening in trade agreements do not seem, according to many countries in the region, to be directing the nations to take development advantages, and may even hinder the creation and implementation of internal policies for this purpose.

Additionally, the rise of China, with its influence on the productive sectors of the South American nations, has been a strong competitor to Brazilian industrial products and many countries of the region may increasingly opt for China at the expense of Brazil. However, this could drive Brazilian diplomacy to engineer a more cohesive strategy for regional integration as South American states acquire about 20% of the Brazilian exports. South American countries envisage the Chinese presence as a means of diversification and greater independence from Brazil, which complicates the task of Brazilian resistance against the influence of the Asian power. Brazil has important interests and players involved in the region, although its international strategy of autonomy through diversification can lead to a progressive decrease in the importance of South America to the country (Veiga & Rios, 2011).

There is also the idea that a country can be influential and powerful without

becoming a regional power and that investment in the southern region of America is, above all, a way of circumventing some negative aspects of global capitalism, protecting the Brazilian economy from external shocks. In this sense, national capacity to meet the challenges of globalization without losing national autonomy is a priority for Brazil. Beyond that, it should be noted the fact that Brazilian elites have a totally opposite idea to the one that is predominant in many South American countries: while these demonstrate fears regarding the alleged imperialist goals of Brazil, Brazilian elites believe that the government is too generous with its neighbors (Schenoni, 2015).

Therefore, it is possible to speak of an ambiguous Brazilian regional strategy, since the country has not taken an hegemonic position nor granted some of their sovereignty to supranational institutions. Still, at the economic and financial levels, a retreat from Brazil seems unlikely, at least in the short term, since there is a scene of enormous business and financial exposure of national entities in other South American countries. Additionally, the importance of the country to foreign policies in the region increased in the first decade of this century, although the Brazilian strategy of autonomy through diversification reduces the odds of regional integration following firm and cohesive contours – hence the scenario of advancement of South American regional integration spearheaded by Brazil seems remote (Sorj & Fausto, 2011). ‘The argument is that Brazil will be more capable of pursuing its foreign goals on its own rather than depending on costly agreements with unpredictable partners’ (Malamud, 2011, p. 8).

Brazil has established asymmetric trade relations with almost all regional states and a pattern of intra-regional trade in which the country is an exporter of greatly value-added and technology-intensive manufactured goods (such as machinery and electrical equipment), and an importer of commodities, following a ‘center-periphery model’. At the same time, Brazil is a major exporter of commodities in global markets. For these reason, the country has no capacity or political will to function as the ‘locomotive’ for regional growth, propelling the development of its neighbors through its regional imports, financing and investing. As a consequence, Brazil cannot establish itself as a regional leader able to promote the integration agenda, regional security and development, three elements which are essential for the creation of a cohesive integrationist process and for reducing, above all, external economic vulnerability in the region (Schenoni, 2015).

Additionally, there are serious economic and political problems in Brazil which undermine the country’s ability and legitimacy to play a key role in the South American scenario. 2014 was the fourth consecutive year of subpar growth in Brazil and 2015 will likely be the most difficult since 2003 in economic terms, especially if we take into account the impact that the corruption scandals in Petrobras will have in the economic and political areas of the country:

More than political shocks, the corruption scandals in Petrobras can directly affect the country’s national economy. Brazil’s largest company, Petrobras

accounts for 13% of Gross Domestic Product (GDP). (...) A 10% cut in the oil business plan can take 0,1 to 0,5% of the GDP (Kafruni, 2014).

Dilma Rousseff has an economic cloud hovering over her head, with this scandal nearly costing her re-election and still threatening to spoil her second term in the presidency of Brazil, since the scandal will produce damage for months to come, putting the president under a lot of pressure. In fact, this situation is 'threatening to engulf the country's most senior politicians – including its president' (Barnato, 2014), inasmuch as the majority of the alleged events occurred while Rousseff was head of the board of directors. In the beginning of March 2015, the Brazilian Supreme Court authorized investigations on almost 50 people, including senators, deputies and former members of five political parties, mostly supporters of Rousseff. Furthermore, the decline in oil prices since last year seems to be undermining the prospects for investment in Brazil and elections have failed to reduce political risk in the country, a risk that was actually heightened in face of the weak outlook for economic growth and uncertainty about the plans for the implementation of fiscal reforms. March was a tough month for Dilma Rousseff given the various demonstrations around the country through which citizens protested especially against corruption and demanded Rousseff's resignation (Meyer, 2014). So, the president and Brazil are not in a position to promote anything serious and effective in South America, mostly in energy terms, although the region is still an important part of the country's foreign policy goals.

It should also be noted that the integration project has fluctuated over time between transformations in world economic conditions and changes in governments of each nation. The processes of regional integration live a moment of crisis with the ideological and political polarization around nationalist-state-oriented countries in one side, and market-friendly countries on the other. In fact, the geographical aspects and the aforementioned differences among states have generated the division of the region between two axes: the Pacific one, with Peru, Chile, Colombia and Mexico (even though the latter doesn't belong to South America), and the Atlantic one, with Brazil, Argentina, Venezuela, Paraguay and Uruguay. Some ask 'is a decade of progress in South America coming to an end?', and maybe for some countries it is, but not necessarily for the region as a whole. This is where the Pacific Alliance comes in.

The Pacific Alliance is a mechanism of economic and commercial integration composed by Chile, Peru, Colombia and Mexico, originated in 2011 and formalized in 2012. Costa Rica and Panama are observer states which are candidates to full membership. This alliance aims to a) create a deep integration area in order to move towards the free movement of goods, services, capital and people; b) promote growth, development and competitiveness of the various economies integrated in it, seeking greater well-being, overcoming economic inequality and social inclusion; and c) become a platform for political coordination and economic and commercial integration, as well as for projecting its members

onto the world, with special emphasis on the Asia-Pacific region. It is an initiative based on an open liberal model of regionalism, in which the economic sphere is above the political and social ones, focusing on pragmatism and flexibility (Perry, 2014). Integration and cooperation on an institutional basis are not the priority. The four member countries have a total population of 212 million with a GDP per capita of 10 000\$, together they are the seventh largest exporter in the world and, if they were a single country, these states would constitute the eighth largest economy in the world (Romero, 2014). Furthermore, Chile, Peru and Mexico are also members of APEC (Asia-Pacific Economic Cooperation), as well as part of the TPP (Trans-Pacific Partnership). The Pacific Alliance is seen as a 'fast track' to the expansion of trade relations among its members and, in particular, with the US and China, so it seems to be a counterpoint to the ongoing integration processes in the region. Therefore, this alliance has been seen as an initiative opposed to the integration design advocated by Brazil, since it challenges the pace, scope and objectives which are taken as too large in the slow construction process of Mercosur (Menezes 2014). In fact, the Pacific Alliance exports are larger than the ones from Mercosur, led by Brazil and Argentina (Romero, 2014), and it transcends the barrier between Latin America and South America, since it involves Mexico. Moreover this new alliance is perceived by some as a project led by the US, which seeks to create a new political, diplomatic and economic hub within the continent, so its strength is strictly associated with its alliance with the US. This is very important to Brazil, inasmuch as, since 2003, the Brazilian government considered FTAA (Free Trade Area of the Americas) a project which could threaten the country's sovereignty, Mercosur and the desire of leading South America. Thus, the consolidation of the Pacific Alliance is a counterweight to the growing influence and leadership that Brazil tried to consolidate in recent years, given that its foreign policy has been characterized by a strong autonomy from the US. Given these circumstances, it is difficult to envisage Brazil as the promoter of a low carbon economy in the region or even as the promoter of any effective strategy in terms of regional integration any time soon. Furthermore, current difficulties of Brazilian strategic partners such as Argentina and Venezuela, widely exploited by the opposition, reflect challenges that will have to be faced boldly. Both countries are living economic and social situations which are of the greatest concern for Latin America. Inflation, decline in international reserves and devaluation of currencies, problems which the Argentinean and Venezuelan governments seem incapable of solving, are undermining these two members of Mercosur, which weakens the institution as well, hence making it even more difficult for Brazil to perform any kind of effective integration strategy in South America.

In addition, it is important to highlight that, since it was discovered by Portugal, Brazil is a country strictly directed to and dependent on the Atlantic Ocean. With a coastline of almost 7 500 km and controlling the Amazon Basin, as well as part of La Plata Basin, which are closely articulated with the South

Atlantic, Brazil's great highway connection between South America and Africa is an important source of economic resources. About 90% of current oil production and 95% of its reserves, as well as 75% of gas production and 85% of its reserves, are located in the Brazilian continental shelf in the South Atlantic, where 90% of the country's international trade also circulates (Fiori, 2014). Thus, the South Atlantic contains strategic resources and is a fundamental path of transport and communication between Brazil and Africa, so the Atlantic is a crucial space for Brazil's economic security, which also reflects why the 'conquest' of the Pacific is a challenge for Brazilian leaders. In addition, the US government considers the Pacific Alliance as an initiative which is convergent to its interests, something that goes in the opposite direction of Brazilian plans. This initiative represents an alternative political model of economic development and it will make it much more difficult for Brazil to project itself on the continent, especially because the power of attraction of the Pacific Alliance is limiting Mercosur's expansion and consequently the weight of Brazilian influence. In view of this new regional bloc, Brazil should expand cooperation projects with South American countries in order to catalyze regional development and strengthen its relevance in this process. Therefore, the implementation of joint integration projects of energy and road infrastructure, for instance, could play a central role in transforming regional relations. However, Brazil does not seem to be willing to do so and, most importantly, it seems to lack domestic conditions to project itself on the region in a way that could foster this type of integration project (Olmo & Moron, 2014). Besides, Brazil is now reconstructing its macroeconomic fundamentals, and the country, although having potential to move towards a low carbon economy, has not developed itself in this direction. Furthermore, the inclusion of Brazil in the Pacific Alliance would imply that the country is opting for a very open economic system and it would also mean a greater convergence between Brazilian and American interests.

It is also important to look at what this alliance has already achieved:

The four countries have eliminated 92 percent of all import tariffs among them. Chile, Colombia, and Peru have linked their stock markets so that a company listed in one of the exchanges can be traded in the other two. (...) The four countries have eliminated the need for business and tourist visas for visiting nationals of bloc members. In a break with tradition, the joint communiqués of Alliance presidents tend to be brief and concrete in terms of goals, timelines, and roadmaps (Naím, 2014).

In terms of environmental protection, the market-oriented model of the Pacific Alliance does not point towards a low carbon economy. From the point of view of the global and regional transition to a low carbon economy, this is a case of squandered potential. The recognition among regional leaders that energy integration could translate into a strategy of international insertion and a peculiar situation of energy security, which could provide accelerated cycles of growth and development and greater economic competitiveness, as well as

political will and a different regional strategy on the part of Brazil, could boost a more cooperative and integrative vision towards the energy issue and impel the regional bloc to adopt a long-term economic view, which includes the core issue of energy. Quoting Almeida (2013, p. 4),

the issue of energy security is vital to the development of the process of integration of South American nations, because it necessarily passes through socio, political and economic development of the region.

Still, energy integration efforts in South America are discontinuous and the present situation does not point to convergence.

## CONCLUSION

Regional disparities, historical tensions between some countries, financial difficulties related to the present global crisis, the institutional and regulatory asymmetries, the lack of physical infrastructure and, above all, the economic and political nationalism, translated into strong resistance to delegate part of national sovereignty to a supranational authority, hinder the achievement of a green energy integration project in South America.

Brazil has failed with regard to regional leadership and the Brazilian foreign climate policy reveals a low interest in becoming a reference on South America's climate policy, even though the country shares various dimensions with its regional neighbors and could greatly benefit from a process of energy integration based on clean energy. The creation of a biofuels global economy would be an advantage to Brazil – the second largest producer and the first major exporter of biofuels in the world – and its promotion at the regional level would be an important step towards this project. Even so, despite the Brazilian failure in terms of regional leadership, the promotion of this image resulted in the international recognition of the country, which, paradoxically, seems to have negatively impacted its position among regional partners: 'global success has proven to be antithetical to regional leadership' (Malamud 2011, p. 18). This international recognition of the country's leading role in the region has increased the distrust among its neighbors, who fear hypothetical imperialist pretensions on the part of Brazil.

Therefore, energy integration in South America seems a difficult project to accomplish. Although the regional bloc holds the potential to, through integration, respond to important challenges and even start a process of decarbonisation in the region, the coordination of sectorial policies proves to be a very complex process, only achievable in the long-term. Hence, this seems an unlikely scenario, since there is a series of obstacles of varying nature and it is difficult to envision, in the near future, a way to overcome them. Moreover, as Thomson (2014) states, 'President Dilma Rousseff has conveyed the impression that economy and environment are not complementary, and she has prioritized

economic considerations'. It is important to highlight that the severe crisis in the production of biofuels in 2012 was associated to major mistakes in macroeconomic policies derived from the excessively state-oriented paradigm implemented by Dilma Rousseff, and therefore it is difficult to imagine, given the president's re-election, a process of energy integration focused on a transition towards a low carbon economy. It is important to highlight that Mexico, which is becoming a central player in South America, has a much lower potential than Brazil in terms of green energy, and this is a great challenge given that Brazil is the 'green pole' of the region, but it didn't develop its economy to meet its potential. Regional integration is thus a gradual and extremely slow process (Pereira, 2013a) and it is very unlikely that Brazil will boost a low carbon economy in the region, even though the possession of energy resources means having an important strategic variable of power (keeping in mind that energy insecurity can harm the foreign policy of a state) and is an element which allows for the necessary conditions for human development.

The Pacific Alliance is a project of radical liberalization of trade among its members and, with the possible incorporation of Costa Rica and Panama, this initiative represents a return to a model of 'open regionalism' in South America, since there is now a new diplomatic, political and economic axis convergent with the US strategy presented in FTAA. In geopolitical terms this can, and it is very likely that it does so, represent a reversal in the regional path of achieving autonomy in face of the political, economic and commercial policies of Washington. This means that the post liberal agenda inaugurated in the first years of the twenty-first century faces a huge challenge. For Brazil, this means that the country could find itself isolated in the region, since Mexico is assuming a more important role in South America while Brazil is losing its influence. This could lead Brazil to carry out a strategy to divert Mexico away from South America, but right now the country does not seem to have tools to do so since it lacks economic power.

The profound deterioration of the economic and political situation in Brazil since 2013, plus the excessive state interventionism and erosion of macroeconomic underpinnings, as well as the massive corruption scandal at Petrobras, make it fair to assert that Brazil will not lead any kind of effective cooperation in South America, especially regarding green energy issues. Although the country is living a severe drought in 2015 and could strongly benefit from a sustainable energy integration process, Brazil has no conditions to promote such a project. In fact, the dynamic axis of South America is no longer Brazil, but the Pacific Alliance, based on a model of pro-market integration. The geopolitical dispute around the Pacific is an enormous challenge to the consolidation of any Brazilian and regional integration project comprising all South American countries. Still, despite all the obstacles, the region is, as we have seen, very vulnerable to the effects of climate change, so in the long-term regional development and energy security seem inseparable from a renewable energy course, for which the



continent has potential and an important leader – if Brazil is able to overcome its challenges and bet on a regional strategy to promote sustainability – a leader that has experience and holds resources to boost the architecture of a common energy strategy, based on the assumptions of a low carbon economy. Climate, energy and developmental imperatives may lead states to overcome asymmetries, limitations and challenges. But this will not happen in the near future.

## NOTES

It is important to note that the financial crisis was felt differently in South America than in the rest of the world, inasmuch as the rise in commodity prices continued until 2012 and this had a favorable impact, so fiscal constraints only began in most countries in 2013 associated to the end of the commodity rising price cycle.

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