

FIFTH HEMISPHERIC MEETING OF ENERGY MINISTERS

HEMISPHERIC ENERGY INITIATIVE

Progress, Challenges, and Strategies

Coordinating Secretariat

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EXECUTIVE SUMMARY

OBJECTIVES

At the Miami Summit in December 1994, 34 Heads of State of the Americas adopted a Plan of Action providing the Energy Ministers with guidelines for promoting regional energy cooperation and developing policies and frameworks to facilitate private-sector investment in the energy sector. For this purpose, this Plan adopted the topics “Energy Cooperation” and “Partnership for the Sustainable Use of Energy,” which were ratified at the Second Summit of the Americas in Santiago de Chile in April 1998.

DEVELOPMENT

In compliance with the Plan of Action of the Presidential Summits, the region’s energy authorities developed the Hemispheric Energy Initiative (HEI) and set up a Steering Committee and Coordinating Secretariat, as well as Working Groups in order to facilitate the work of the Initiative and promote the study of the focal issues that were identified as priorities.

To date, four ministerial meetings and ten Steering Committee meetings have been held to discuss the status of energy cooperation and conduct a follow-up of the process started by the HEI.

PROGRESS

The HEI has been set up as a useful political forum for dialogues on energy aspects that are relevant to the region, and this has permitted the governments to share the best policies and practices for the sector.

The HEI has contributed to the consolidation of various subregional integration processes based on the complementarity of existing energy resources in the region and aimed at ensuring supply security and energy market stability.

The HEI has successfully promoted a dialogue and activities between the governments and new energy sector players. The governments have introduced reforms into their regulatory frameworks in order to permit the participation of these new players.

The governments have promoted standards for the rational use of energy resources so that sector development can be compatible with the preservation of the environment and guarantee its sustainability.

HOW TO PROCEED

Despite these achievements, there are still many challenges. Because of this further efforts must be made and unwanted impacts corrected, for which purpose it is necessary to build up political will, identify resources, and define the institutional mechanisms that would permit their correct application in order to consolidate the Hemispheric Energy Initiative.

1. HISTORICAL CONTEXT AND EVOLUTION

The energy sector transformation processes in the region started with the structural changes that were implemented in 1982 in Chile and, at the start of the nineties, in Argentina, Bolivia, and Peru, as part of a shift in international policy involving globalization, market liberalization, and the transformation of producer States into standard-setting, supervisory, and regulatory States, with production being transferred to the private sector. In the second half of the decade, various countries started reforming their energy sector. These transformation processes for the most part were aimed at securing capital resources for the sector's development. The transformation has taken place in different ways and at different times, and therefore the regulatory frameworks of the different countries of the region are not symmetrical. Moreover, the degree of complexity of the transformation processes, involving economic and social aspects, as well as issues of sovereignty, has been one of the reasons for the wide variety of processes and the differences in implementation timeframes.

There were, however, common denominators justifying this shift:

- Deterioration of the national economy, usually alongside high inflation.
- Inefficiency of state energy enterprises and, in some cases, disinvestment.
- Decline of oil and gas reserves and production and therefore lower earnings from hydrocarbons.

The measures that were adopted have been the same in almost all transformation processes:

- Rationalization of subsidies.
- Adjustments to fuel and electricity prices aimed at putting them on par with opportunity prices (adopting import/export parity price mechanisms).
- Organizational/institutional reforms aimed at rationalizing spending. Identification of business units, outsourcing, and the creation of holding companies.

In the majority of cases, in-depth structural transformations took place:

- Changes in contract schemes for hydrocarbons exploration and production (upstream).
- Dismantling barriers that were preventing participation in oil and gas transport, refining, and marketing activities (downstream).
- Modernization of public administration.
- Incentives for foreign investment inflow on the basis of an attractive fiscal regime.
- Vertical and horizontal breakup of power and gas utilities.
- Privatization of state enterprises.
- Establishment of electric power markets.

Over the last decade, the region has made a major effort to build physical energy interconnections in the electric power, natural gas, and oil subsectors.

As mentioned earlier, energy sector modernization in Latin America started in Chile in 1982, and then continued in Argentina, Costa Rica, Mexico, and Peru in 1992; afterwards, in 1994 Bolivia, Colombia, and Honduras followed suit; between 1995 and 1998, Brazil, Ecuador, El Salvador, Guatemala, Guyana, Nicaragua, Panama, and Uruguay launched similar efforts. To date, the majority of the region's countries have updated their standard-setting frameworks or are in the process of ratifying new State transformation laws.

As it can be appreciated in the background indicated above, the Hemispheric Energy Initiative (HEI) arose in a context of an energy sector modernization effort that had already begun. Of course, the decisions made by the Heads of State, complemented by those made by the Energy Ministers of the Hemisphere, have enhanced the actions launched by the countries separately, promoting private-sector participation in energy integration in an environment of sustainable development of the hemisphere's energy resources.

1.1 Energy and sustainable development

As mentioned earlier, the region's countries have carried out reforms that have tended to favor their insertion in a globalized world, albeit with their own national characteristics,.

Reforms have been made in all the dimensions of sustainable development, among which the following are the most noteworthy: political freedom, economic well-being, social equity, and a healthy environment, in addition to the rational use of natural resources. These dimensions can be summarized as follows:

Policy reforms: to grant greater transparency to the functioning of their institutions and render feasible broader citizen involvement in decision making. In many countries, the first step consisted of returning to a democratic regime or installing one.

Economic reforms: to put fiscal accounts on a sound footing and control endemic inflation processes and thus ensure macroeconomic stability so as to offer a more predictable scenario to investors in a context of new norms and regulations that would earn the credibility of economic players.

Social reforms: aimed at rationalizing social security systems, modernizing educational systems, and providing a broader health coverage for the population, which have been a priority concern in the decade, as reflected by the rise in social spending as a share of total public expenditures (from 41% in 1990 to 47.2% in 1997), which governments have allocated in the different budget items during the nineties.

Environmental regulations: As a result of the decisions taken at the Climate Summits, environmental protection norms have been established either in autonomous frameworks or incorporated into energy regulations.

To these must be added energy reforms, stemming from a shift in the approach to policymaking for this sector.

Whereas the traditional approach assigned to the energy sector a strategic role in providing for a country's national security, over the last few years, this approach has changed, and energy is now viewed as an essential input for a competitive economy, in the understanding that industrial productivity and the quality of living of the population require reliable energy supply at competitive prices.

Regarding this, the new role performed by the States in this phase is noteworthy.

The States have totally or partially substituted their business involvement in the sector and when they have retained this role, they have done so by installing a competitive scheme, introducing regulatory functions that protect the rights and welfare of the consumers in the face of possible monopolistic behaviors stemming from market liberalization.

This has enabled private investments to provide a very substantial inflow of financial resources that have contributed to economic growth and enabled the States to release resources and reorient them, in many cases, to the above-mentioned social objectives.

Private participation and investment have also built up and contributed to the development of subregional integration schemes. The cases of MERCOSUR and NAFTA are the most noteworthy, but there is evidence of this integration in the other subregional agreements existing in the hemisphere.

Important indicators of this process can be found when comparing energy interconnection projects (between 1996 and 1999, natural gas investments amounted to US\$4,061 million and in 2000 gas pipelines were being built for US\$550 million). Oil trade flows increased by 282.9%; electricity trade by 99.3% between 1988 and 1996; natural gas trade by 499.1% between 1996 and 2000. These energy trade flows show greater access to products and services as indicated by the higher per capita consumption of commercial energy sources (residential electricity consumption rose by 50% between 1988 and 1999) and the expansion of electric power coverage (from 75.1% in 1988 to 87.9% in 1998).

This progress has been ratified not only by the actions that have been directly carried out by the governments but also by those taken by private investors complementing those of the government. Regarding this, the World Bank's conclusions on the region's progress should be mentioned:

- Between 1990 and 1997, energy investment, measured as a whole (private and public contributions), rose from under US\$2 billion to US\$46 billion, of which US\$23 billion were taken by Latin America and the Caribbean. Afterwards it fell to US\$25 billion in 1998 and US\$15 billion in 1999, as a result of the financial crisis between 1997 and 1999.
- Out of all of this, it should be emphasized that, during the nineties, Latin America accounted for 42% of world investments in private-sector energy projects.

Therefore, it should be recognized that no region in the world, over the last 10 years, has had to take up the many challenges in terms of efforts that Latin America and the Caribbean has had to make to adjust the region's countries to globalization, democratic processes, and modernization of their societies and poverty abatement.

1.2 Energy and integration

The above-mentioned reforms cannot be dissociated from integration processes. As reforms are extended, it can be observed that market liberalization has given rise to considerable expansion of business opportunities for private-sector players in building infrastructure for energy interconnections.

Thus, regional energy integration has recorded major progress in the decade:

- In the enlarged Mercosur, the results of steps taken to ensure electric power, gas, and oil complementation are starting to become apparent (the most noteworthy are the gas pipelines between Bolivia and Brazil and the interconnections between Argentina and Chile via various border passes, the trans-cordillera oil pipeline, the electric power interconnection through the north, the natural gas interconnections with Uruguay and Brazil, and the trade of oil and products between the region's countries).

- In Central America, rules have been agreed upon for an integrated electric power operation, with the prospect of incorporating natural gas from one end of the isthmus to the other (SIEPAC Project, the gas pipelines from Mexico and Colombia, and the transport of LNG from Trinidad and Tobago are offering unprecedented supply alternatives).
- In the Andean Community, there are signs that the countries' abundant gas reserves will be tapped, helping to neutralize the volatility of oil prices on the international market on which they depend heavily (the massive expansion of gas in Colombia and the new policy of gas diversification in Venezuela, as well as the possible interconnections between both countries toward Central America and Ecuador or eventually from Peru toward Ecuador, are noteworthy). In electricity, the interconnections between Venezuela and Colombia and then with Brazil are noteworthy.
- In the Caribbean, there is a growing interest in finding new energy substitutes such as CNG and LNG, which would be added to and eventually substitute LPG consumption. Progress has been made in studies aimed at interconnecting the eastern region of Venezuela to Miami with a gas pipeline crossing the Caribbean Sea. (There is already an LNG plant on stream in Trinidad and Tobago exporting gas to Europe and the United States). Likewise, the Caribbean Hydrocarbons Cooperation Commission has recently been set up.
- Finally, the support given by Venezuela and Mexico to Central America via the San José Accord and the Energy Cooperation Agreement of Caracas are noteworthy.

1.3 Energy and regulation

In order to further regional energy integration, it is necessary to take advantage of the entire dimension of complementariness that has been observed between the energy resources and systems of the hemisphere's countries in order to ensure long-term energy supply. This complementariness does not involve any physical or technological constraints but there are still political, legal, and institutional obstacles, which although they might tend to be dismantled over time are not facilitating investment in all situations due to the risks inherent to energy business.

From a realistic standpoint, energy integration is a gradual process that can be facilitated if obstacles are dismantled and regulatory frameworks are harmonized, providing transparent norms for investors. The reduction of the legal risk is a key condition for formalizing contracts and reducing the intangible costs of legal insecurity.

To expand markets, however, conditions have to be created so that the prices can be freely negotiated in subregional spaces. Nevertheless, until interconnections are consolidated, time for development and experience will be required to create duly coordinated electricity dispatch centers and natural gas markets that make it possible to trade on the basis of conditions of free, nondiscriminatory access to producers of many origins.

In addition, energy integration processes contribute to better shaping investments in capacity since they enable high-efficiency hydropower and thermoelectric generation infrastructure overcapacity costs to be reduced by optimizing the hourly load or the use of water owing to the region's different rainfall regimes.

As a rule, one of the principal obstacles to integration is the existence of monopolies not only in the public sector but also in the private sector. The most important impacts are as follows:

- Obstacles to integration processes.
- Constraints in securing investments.
- Conditioned incorporation of state-of-the-art technology and reduction of international competitiveness.
- Higher energy costs for users.

Other types of obstacles, for example, involve customs and noncustoms issues that imply constraints that could lead to a long list of difficulties to be resolved:

- ◆ Principles of transparency, objectivity, and nondiscrimination for supply procedures, the awarding of contracts for public projects, energy purchase, simplicity of administrative procedures.
- ◆ Legal and economic security: the investor requires stable rules of participation on regional markets. This highlights the need for a clear set of norms (legal, labor, and tax) for investments in the countries permitting, at an international level, the reduction of country risk costs and establishing arbitration mechanisms in keeping with the legal frameworks of the countries of origin of the investor and the beneficiaries of the investments.
- ◆ Environmental regulation: the lack of harmonization of environmental policies among the countries.
- ◆ Stability of the interconnections: the electric power transmission networks in some cases are currently operating at full capacity and cannot take on any additional load.
- ◆ Prices and subsidies: differences in fuel pricing policies between the countries that would make it difficult for investors to set international prices.
- ◆ Transport fees and tolls: Lack of uniformity in the way investment recovery schemes and the distribution of costs and benefits are calculated.

The difficulties that have been described are widespread and are characterized by different intensity in each subregion or between them, depending on the conditions that are prevailing to created subregional or regional energy markets.

Building up the viability of these markets is obviously a process that should go hand in hand with the installation of legal frameworks where there are none, the harmonization of existing standard-setting and regulatory frameworks, and the elimination of obstacles in a context of consensus with reasonable aspirations for private investors, in keeping with the energy policy of the countries.

1.4 Energy and investments

In order to strengthen and expand subregional energy systems, it is necessary to improve and create new business opportunities and support projects that offer good prospects for investors.

The challenge is to increase to the highest percentage possible direct investments for the region. If the same percentage over total investments aimed at developing countries that was recorded in the nineties (US\$187 billion) were to prevail now, the investment that would be injected in Latin America and the Caribbean would amount to about US\$75 billion.

From the above, it is evident that regional energy integration is not progressing any more rapidly not so much because of problems stemming the scarcity of resources or geographical difficulties or lack of access to technology or the irrational attitude of investors who are unable to perceive our potential, but rather because of the prevalence of obstacles and the lack of harmonization between regulatory frameworks that make it difficult to promote a favorable environment for fresh capital that is looking for new business opportunities.

The conclusion is that new investment opportunities have to be created in energy activities so that the sector can encourage further development, which is also sustainable.

1.5 Energy and the environment

Over the last decade, the countries of the hemisphere have shown growing concern for not only local but also global environmental preservation. In the energy sector, the countries have incorporated, and in some cases improved, environmental provisions and regulations for energy production, transport, and use. This has led to the creation of specific institutions in some cases and institutional capacity building in other cases where these institutions already exist, as well as the incorporation of provisions for the production and sustainable use of energy in legislation and national development strategies.

A series of national programs has been developed to reduce local environmental impacts stemming from energy production and use, as well as the promotion of energy efficiency in order to support the reduction of local emissions produced by the industrial and transportation sectors. In the latter sector, the promotion of natural gas for motor vehicles and the program for using sugar cane ethanol, as well as the use of unleaded gasoline in the majority of the hemisphere's country, among other actions, should be highlighted

Likewise, the hemisphere has made a major effort to diversify its energy options and to adjust conventional energy sources to environmental requirements. Regarding this, the high amounts of investments made for the potential production and use of gas hydrocarbons in the continent, leading to wide-ranging gas production and interconnection projects between the countries of both North America and South America, are noteworthy.

In the field of conventional energy, progress has been made in the research and development of cleaner technologies and practices that permit greater environmental protection, tapping the huge potential that the hemisphere has in this type of energy; likewise, resources and efforts have been aimed at developing technologies that permit improving products.

As for renewable sources of energy, the development of hydropower in the continent should be emphasized, as its potential is expected to grow even further over the next few years. Likewise, the development that has been observed in wind and solar energy programs for electric power generation is quite notable. In the majority of the countries of the continent, renewable energy development programs have been instrumented, albeit at different paces and degrees of penetration on the market. Although there have been successful cases, reducing the high costs of these renewables and promoting wider participation of the private sector and facilitating international cooperation continue to be a challenge for the countries of the hemisphere.

Along with fundamental efforts to mitigate the local environmental impacts stemming from energy production and use, the countries of the hemisphere have actively participated in international negotiations in the context of the United Nations Framework Convention on

Climate Change and the Kyoto Protocol, joining forces with world initiatives to preserve the global environment.

It should also be underscored that, although the contribution of the hemisphere's developing countries to global greenhouse gas emissions is relatively low and therefore these countries have not made any quantitative commitments to reduce these emissions, the countries of the hemisphere have made contributed significantly to reducing, absorbing, and avoiding these emissions.

Nevertheless, this effort may be intensified and improved in the future, through higher investments and international cooperation, principally using schemes for the transfer of technology, know-how, financial resources, advisory services, facilities, and training.

2. POLICY DECISIONS OF THE PRESIDENTIAL SUMMITS AND THE MEETINGS OF ENERGY MINISTERS

2.1 Principal decisions orienting energy cooperation

Policymaking by the Hemispheric Energy Initiative takes place at two levels: presidents and ministers. To date the following meetings have been held:

- *At the level of the presidents:*

a) *Summit of the Americas*, held in Miami, Florida, in the United States in December 1994, with the participation of 34 Heads of State. The Plan of Action adopted at the Summit in terms of energy gave the region's Energy Ministers a political orientation in order to start exploring cooperation potential in areas of shared interest and concern. It also required the development of consistent policies and frameworks that would facilitate private-sector investment in the energy sector. The Plan of Action included articles focusing on item 12 "Energy Cooperation" and Article 21 "Partnership for the Sustainable Use of Energy." The United States through its Department of Energy and Venezuela through its Ministry of Energy and Mines were designated to act as coordinators of the Summit's Energy Working Group, also referred to as the Hemispheric Energy Initiative (HEI).

On the basis of this meeting, a process was launched to ensure implementation of the two guidelines mentioned above at the presidential summits (Santa Cruz, Bolivia and Santiago, Chile) and at the meetings of energy sector ministers (Washington, D.C., United States; Santa Cruz, Bolivia; Caracas, Venezuela; and New Orleans, United States).

b) At the *Sustainable Development Summit*, held in the city of Santa Cruz, Bolivia, in December 1996, the participating Heads of State emphasized the adoption of policies and strategies that foster changes in production and consumption patterns to ensure sustainable development, higher quality of living, environmental preservation, and poverty abatement. In addition, a Plan of Action for Sustainable Development in the Americas was outlined.

c) During the *Second Summit of the Americas*, held in Santiago, Chile, in April 1998, the following was underscored: with respect to free trade and integration, energy cooperation was emphasized, with the promotion of policies that facilitate trade and infrastructure projects, the promotion of transparent regulatory frameworks, increasing the rural population's access to energy services, and the stimulation of the use of renewable sources of energy and energy efficiency.

- *At the level of the ministers:*

d) At the *First Meeting of Ministers (Hemispheric Energy Symposium)*, held in Washington, D.C., in the United States, October 1995, the Ministers decided to set up a cooperation agenda that would facilitate implementation of the Plan of Action elaborated at the Miami Summit, identifying 40 actions in different topics. In addition, they decided to set up a Steering Committee in order to ensure a follow-up of the different activities. This Committee, comprised of delegates from the countries, believed it was time to set up working groups in order to ensure implementation of the Plan of Action established at the Miami summit.

e) At the *Second Meeting of Ministers* held in Santa Cruz, Bolivia in July 1996, the Ministers confirmed the key role played by the energy sector in achieving sustainable development, recognized the need to promote private investment in the sector, and decided, among other things: to promote the participation of the private sector; to foster capital inflows to the region creating conditions that reduce investment risks; to develop clean energy production technologies; to set up strategies for higher efficiency; and to highlight the importance of energy supply in rural areas; and, in general, to reduce poverty.

f) At the *Third Meeting of Ministers*, held in Caracas, Venezuela in January 1998, the Ministers agreed upon the following: 1) promote policies facilitating energy sector trade; 2) promote the development of infrastructure; 3) achieve transparent and predictable regulatory frameworks; 4) promote foreign and local private investment; 5) extend rural electrification with the participation of the private sector and the involvement of multilateral credit organizations; and 6) activate the working group on climate change in order to exchange information and analyze cooperation activities.

In addition, the Ministers agreed to establish a Coordinating Secretariat to facilitate cooperation under the HEI. This Secretariat is comprised of the following: an officer of the Ministry of Energy and Mines of Venezuela, an officer of the U.S. Department of Energy, and an officer of the Latin American Energy Organization (OLADE). The Secretariat serves as the administrative arm of HEI and is mainly in charge of disseminating information and coordinating its most important events and activities. Venezuela is currently serving as the focal center for the Coordinating Secretariat.

g) The *IV Meeting of Ministers*, held in New Orleans, in the United States in July 1999, was held to: 1) evaluate the progress made to reach the goals that had been adopted previously; 2) share experiences regarding energy integration and discuss ways of make further progress in this area; 3) discuss the importance of clean energy development and use; 4) stimulate the energy business sector in the hemisphere in order to organize a Business Forum; and 5) consider extending the current Coordinating Secretariat.

The discussions focused on regional integration policies and practices and the role of energy in environmental protection, in the understanding that these successful policies and practices will lead to the creation of a sustainable energy infrastructure for the region in the 21st century. They also recognized the activities carried out by the working groups as a mechanism to further the HEI process.

The Ministers recognized the need to continue making efforts to achieve hemispheric energy integration and considered the main achievements in this direction. Likewise, they underscored the importance of the business sector's contribution to achieve the objectives of the HEI, reiterated their support for the efforts of the HEI working groups, confirmed their commitment to the development and use of sustainable energy, and agreed to keep the Coordinating Secretariat.

It should also be emphasized that, prior to the ministerial meeting, interactive discussions were held at round tables between top-level government authorities and industry representatives, which led to a fruitful exchange of points of view.

2.2 Application of the guidelines agreed upon in the Initiative by the countries

The countries have been participating in different activities depending on their own interests in the different topics that are being promoted by the working groups; it should be

emphasized that the Initiative's activities have been effectively supporting cross-border energy integration, guided by principles of sustainable energy development and use.

The contribution of the business sector should also be highlighted as a fundamental element for reaching HEI objectives and, as a result, the importance that business meetings have as a driving force behind energy trade.

An evaluation of the policy statements made by the Initiative helps to summarize the principal actions carried out by the countries. The following guidelines have been selected for this purpose:

- Promoting policies and processes that facilitate the development of infrastructure, including international cross-border interconnections, in order to integrate energy markets, and promoting policies and processes that facilitate the trade of energy sector-related products, goods, and services.
- Promoting the establishment and consolidation of transparent and predictable regulatory systems that take into account the needs of the parties.
- Promoting legal, fiscal, and regulatory frameworks to attract national and foreign private-sector investment in the energy sector in those areas permitted by the countries' respective Constitutions.
- Improving the rural population's access to energy services.
- Supporting policies and programs to stimulate the development of renewable sources of energy and energy efficiency.
- Exchanging technology, information, and experiences, as well as opinions on the clean development mechanism (CDM), recognizing the role that technology performs in managing energy-related environmental aspects.

Using these policy guidelines and the information received from the countries, a summary of the implementation of activities is provided below (the cases referred to are merely examples):

- ***Promoting policies and processes that facilitate the development of infrastructure, including international cross-border interconnections, in order to integrate energy markets, and promoting policies and processes that facilitate the trade of energy sector related products, goods, and services***

As a result of energy sector reform processes that are apparent in the majority of the countries in the hemisphere, the necessary conditions for private-sector participation in the different components of the industrial and commercial chain of the energy sector have been created, and this will help to foster the elaboration of infrastructure studies and projects, not only in the electric power subsector but also in the oil and gas subsector (especially in the gas subsector).

This participatory impetus of the business sector, including the public sector, has permitted energy trade flows between the countries to grow, mainly with gas and electric power interconnection projects, such as between Canada and the United States (electricity), between Mexico and the United States (natural gas and electricity), in Central America (the electric power interconnection project referred to as SIEPAC, for which an Electric Power Framework Treaty of Central America has been signed), and in the greater Southern Cone (natural gas, with various gas pipelines already onstream, and electricity), as well as between some of the Andean Community countries (electricity and oil). In the majority of Caribbean

countries, the private sector has been actively inserted into the energy sector, not only hydrocarbons (production and marketing) but also electricity.

- ***Promoting the establishment and consolidation of transparent and predictable regulatory systems that take into account the needs of the parties***

The majority of countries have elaborated standard-setting and legal frameworks aimed at separating operational functions from regulatory and legislative functions in order to facilitate investments in exclusively private projects or in partnership with public enterprises..

Some energy interconnection projects between the countries have obliged the fine-tuning of national regulatory frameworks to find binational schemes (Mexico-United States, Brazil-Paraguay, Bolivia-Brazil, Argentina-Chile, among others) or subregional schemes (Central America) that are compatible so as to permit trade.

- ***Promoting legal, fiscal, and regulatory frameworks to attract national and foreign private-sector investment in the energy sector in those areas permitted by the countries' respective Constitutions***

According to current norms in force in the majority of countries in the hemisphere, new regulations have been issued for the participation of national and foreign companies in the electric power subsector and the hydrocarbons subsector. Various countries have carried out structural reforms to their energy industries (natural gas in Mexico and new electric power and gas legislation in Venezuela) to incorporate the private sector in service supply activities or to entrust it with part of supply or to liberalize the subsectors completely and encourage open market trade (electricity: Argentina, El Salvador, Panama, Guatemala, among others).

- ***Increasing the rural population's access to energy services***

The majority of the hemisphere's countries have substantially increased their efforts to take electric power service to their rural areas, in compliance with the presidential directive issued at the Sustainable Development Summit held in Santa Cruz, Bolivia in December 1996: "Collaborate in the strategies and training to increase access to energy services in rural areas in order to ensure a hemispheric coverage of 80% of the entire population by the year 2010."

In various countries, rural electrification programs are being implemented with the broad participation of the population, local authorities (prefectures/municipalities) and the private sector (Electric Power Supply Program to the Dispersed Rural Population in Argentina, the National Rural Electrification Program in Bolivia, the Program for the Energy Development of States and Municipalities in Brazil, Pronasol in Mexico, projects with the coffee sector in Honduras, projects with the support of multilateral organizations in Nicaragua). In addition, in some countries, special funds have been set up to ensure rural electrification with a percentage contribution from the sale of electric power subsector assets (Colombia and Ecuador, for example).

- ***Supporting policies and programs to stimulate the development of renewable sources of energy and energy efficiency***

In view of the importance of minimizing the environmental impact of the energy sector and using to the utmost the renewable energy resources that are available in the countries, a series of programs and projects to evaluate the potential of renewable sources of energy, transfer

technology, install demonstration pilot plants, and build commercial plants to tap the different renewable energy resources has been developed in the hemisphere. In the case of the Caribbean, this subregion has a high potential for renewable sources of energy, and because of this, the countries have included this subject as an important element in their national policies and are developing projects and programs to tap them (Barbados, Jamaica, Guyana, among others).

For this purpose, in the countries of the continent, institutional and regulatory frameworks have been established to promote their development, not only using open market schemes (Argentina, Brazil, Costa Rica, El Salvador, United States) but also rural electrification programs, with support from the State or multilateral cooperation/financing institutions. Some countries even have specific laws or regulations to promote these technologies (Argentina, Chile, Peru).

It should be indicated that the United States has created a fund to support to the development of specific renewable energy projects.

Another area of importance for the countries is the energy efficiency of processes and equipment, and when this efficiency is adequately promoted it leads not only to major savings of resources but also to a reduction in pollution and in the production of greenhouse gases, principally in the electric power subsector. There are successful experiences developed in the hemisphere (Brazil, Costa Rica, Mexico, and Peru), which have laid the groundwork for larger-scale projects supported by funding from multilateral entities and which have attracted the interest of the private sector (ESCOs).

- ***Exchanging technology, information, and experiences, as well as opinions on the clean development mechanism, recognizing the role that technology performs in managing energy-related environmental aspects.***

The topics addressed by the Convention on Climate Change and the Kyoto Protocol are new and have been discussed nationally in order to determine the contribution of the countries to the objectives of both agreements. In various countries, an institutional and standard-setting infrastructure is being consolidated in order to deal with climate change problems. Some countries have established joint implementation (JI) initiatives at both the institutional and project level (Costa Rica, Argentina, Bolivia, Honduras, Paraguay). In other countries, the implications of the clean development mechanism (CDM) and possible projects for using available funding (Bolivia, Honduras, Mexico) are being analyzed. Furthermore, some countries have environmental strategies (Canada's National Implementation Strategy and Climate Change Business Plan and Colombia's Strategy for Taking Advantage of the CDM).

3. STEERING COMMITTEE

In order to coordinate and follow up on the decisions taken at the different meetings of both Presidents and Ministers of the Hemisphere, the Steering Committee has met periodically and has taken resolutions to orient the activities of the HEI. A summary of the most relevant resolutions is provided below:

a) *Steering Committee Meeting*, held in Santiago, Chile in February 1996: The coordinators for each working group were designated, as well as their goals and the participating countries; the activities for each working group were specified and the contact officers in each country/organization were designated; and the participation of the private sector in all activities was agreed upon. The working groups will become the operating mechanism used to fulfill the decisions adopted in the framework of the Hemispheric Energy Initiative.

b) *Steering Committee Meeting*, held in Cartagena, Colombia, in September 1997: It was agreed that the creation of a Permanent Secretariat would be recommended at the Meeting of Ministers to be held in Caracas in January 1998, and that working group coordination would be maintained and reports to the Meeting of Ministers standardized.

c) *Steering Committee Meeting*, held in Port-of-Spain, Trinidad and Tobago in June 1998: It was agreed that two annual meetings would be held, one at the start of the year and the other in the middle of the year, that the practice, which began in Trinidad and Tobago with the Natural Gas Workshop, of studying in depth one of the topics of the Initiative or working group activity at each one of the Steering Committee meetings be continued; that each one of these groups be required to elaborate half-yearly progress reports; that the validity of the scope and objectives defined in the group and related projects be evaluated on a permanent basis; that the Coordinating Secretariat should, through continuous follow-up, be informed of the activities that are being conducted in order to provide the necessary support; that a foldout on HEI, its mission, objectives, organizational structure, achievements, and future goals be prepared; and that further efforts should be made so that the HEI would have an Internet web site that could be used as a means of disseminating information.

d) *Steering Committee Meeting*, held in Lima, Peru in February 1999. The following was discussed: the need to have options available to formalize the operating structure of the Coordinating Secretariat; evaluation of funding possibilities; and a proposal by the Canadian delegation to improve the functioning of the Steering Committee.

e) *Steering Committee Meeting*, held in Ottawa, Canada in May 2000. The participants discussed the Coordinating Secretariat and its functioning, the Steering Committee, and the Working Groups. Other items included on the agenda were the commitments made by the Ministers in New Orleans, among others.

f) *Steering Committee Meeting*, held in Arequipa, Peru in October 2000. It addressed topics such as the functions and responsibilities of the Coordinating Secretariat; concept, scope, and participation of the so-called civil society; the web site; the Business Forum; the role of ONGs (funding). Nevertheless, it was agreed that these same topics would be dealt with in greater depth at future meetings. Another subject discussed was the proposal to restructure the Working Groups, for which further information is provided in the following item.

4 WORKING GROUPS

4.1 Initial structure and principal activities carried out by the working groups

WORKING GROUP	COORDINATION
Increasing investment in the energy sector	United States
Natural gas opportunities	Bolivia
Promoting clean technologies in electric power generation markets	OLADE until February 1998 and then Colombia
Promoting regulatory cooperation in the hemisphere	Argentina
Cooperation in the oil sector	Venezuela
Energy efficiency	Brazil
Expanding rural electricity service	Chile
Exchange of information on climate change (initially this group focused on joint implementation projects)	Canada (at the start, United States)

A brief summary of the most important achievements of the working groups is provided below:

a. Increasing investment in the energy sector

A working plan was established for the following purposes: a) organize a dialogue between the government and industry with the ministries of energy, finance, and the environment focusing on micro and macroeconomic matters for energy investment; b) improve the coordination between the Energy Ministries to facilitate private-sector investment; and c) develop new mechanisms to reduce the financial risk of new energy technology projects.

Regarding this, meetings have been held with representatives from the World Bank, the Inter-American Development Bank, and the United Nations Development Programme in order to involve them in the activities of the Steering Committee and to discuss barriers and strategies that would reduce financial risk.

A round table comprised of ministers of energy and finance was set up at the World Energy Congress held in Washington, D.C., in September 1997, at which time the barriers to private-sector energy investment were discussed.

The activity of this Group was suspended because it focused on a subject that cut across all the other Working Groups.

At the Fourth Ministerial Meeting held in 1999, the Ministers underscored the need to promote access to international financing for sustainable energy projects; for this purpose, the United States created the Hemispheric fund for Sustainable Energy in the Inter-American Development Bank in order to develop and define clean energy projects that could gain access to funding from both IDB and other financial institutions.

b. Opportunities for natural gas

During the meeting of the Steering Committee held in Port-of-Spain in June 1998, it was agreed that four regional subgroups would be established to improve the effectiveness of the

Working Group for Natural Gas. The subgroups with their respective achievements are highlighted below:

- Southern Cone. Coordinator: Bolivia. A forum for the private sector was set up to identify natural gas investment opportunities and a workshop was organized to analyze technical norms.
- North and South America and the Caribbean. Coordinator: Trinidad and Tobago. Review of natural gas project feasibility studies. A workshop is being scheduled to focus on natural gas opportunities in the region.
- Central America and Mexico. Coordinator: Mexico. Study of the viability of the gas pipeline from Mexico to Central America and the regulatory model.
- United States and Mexico. Coordinator: United States. Discussion of various aspects about the development of natural gas as an important source of energy. Experiences regarding the development of LNG in Trinidad and Tobago, the regulatory framework of natural gas in Venezuela, the privatization of the natural gas sector in Argentina, and the deregulation process in the United States were presented.

c. Promoting clean energy technologies in electric power generation markets

The group's highest period of activity was between January 1996 and December 1998. In principle, the group's objective was to promote clean technologies through the dissemination of information, the establishment of baselines in the countries in terms of their potential capacity for electric power generation, and the identification of projects in the planning stage that would use clean technologies for electric power generation. Afterwards, activities such as the promotion of horizontal cooperation between the countries and private sector participants were considered.

Emphasis was laid on the following:

- The development of renewable energy technologies along with fossil fuel technologies.
- Processes for the dissemination and transfer of know-how about clean technologies.
- Establishment of ties between all the public and private entities and financial institutions.
- The role of customs and tax barriers that adversely affect the expansion of advanced technologies (fossil fuels and renewables).

Despite this situation, the working group's most significant progress has been in the following activities:

- Three (3) workshops in the clean use of fossil energy (one in Mexico, another in Argentina, and yet another in Peru)
- One (1) on renewable sources of energy.
- Data base on the electric power situation in the 34 countries belonging to the Summit of the Americas and forecasts for the years 2000-2010.
- Report entitled Clean Energy in the Americas distributed to the Energy Ministers and Secretariats of the 34 countries of the Summit.

At present, this working group is not involved in any significant activities, and because of the possible restructuring of the group, there has been no insistent demand that it carry out any new activities. At the Meeting of Ministers in New Orleans, Colombia formally declined to continue coordinating this working group.

d. Promoting hemispheric regulatory cooperation

The purpose of this working group is to identify how the hemisphere's countries can develop compatible regulatory frameworks that facilitate the energy infrastructure, how they can promote the trade of energy goods, and what strategies they can adopt to improve the competitiveness and effectiveness of regulatory institutions.

The efforts of this working group have been aimed at developing data bases for regulatory aspects, including training opportunities in this field, as well as financial possibilities and the maintenance and development of a web site.

In the framework of the round table on regulatory cooperation in New Orleans, the delegates concluded that the governments should identify policy objectives before developing regulations to reach these objectives and that, during the instrumentation process, they should continue facilitating the dialogue between regulators and operators, in order to permit the necessary modifications and revisions. They underscored the need for governments to establish transparent rules of the game to ensure investor confidence.

The lack of financial resources for the development of regulatory activities, which have been made possible by the will of the countries intervening in the activities of this working group, should be underscored.

e. Cooperation in the oil sector

The recent activities by this Working Group include:

- Harmonization of the quality of refined fuel products in Latin America and the Caribbean: at present, the results of this study, coordinated by the World Bank with support from experts of HEI and ARPEL member countries, is being disseminated.
- Study on refining in Latin America and the Caribbean, which shows the long-term evolution of demand for refined products on the continent and the impact they will have on refineries in the region.
- Improvement of the oil statistical information base in the hemisphere: regarding this, efforts were joined between OLADE, ARPEL, the Ministry of Energy and Mines of Venezuela, and the U.S. Department of Energy.
- Options for the exchange of information regarding education and training in the oil sector: Along with OLADE, the Energy Institute of the Americas, the U.S. Department of Energy, and the U.S. Geological Institute.

In addition to these efforts, this Working Group has held several meetings:

- Technical meeting on oil: It was held in Venezuela to establish a working agenda for the working group on oil cooperation.
- First Oil Sector Symposium of the Americas: It was held in Caracas in order to promote and facilitate greater technical and commercial exchange.
- Hemispheric Forum on Oil in the Americas: The Human Resources: It took place in Caracas on May 29-30, 1997 in order to promote greater cooperation and coordination for human resource development in the oil sector.

This group has focused its efforts on reaching a broader participation of the hemisphere's trade sector in view of its importance for integration. At the round table on oil held in New

Orleans, private-sector investment opportunities in the oil sector, as well as mechanisms to mitigate their associated risks, were examined.

f. *Energy efficiency*

In this group, the following actions and considerations are noteworthy:

- Elaboration of a proposal to label household appliances, which was distributed to the member countries for their review. A page on this subject in both Spanish and Portuguese was created.
- Consumers play a crucial role in improving the efficiency of end-use with their selection of products and services.
- More partnerships between the public and private sectors are needed in order to educate and train consumers regarding the environmental and economic benefits of energy efficiency.
- Cooperation between governments and the private sector works well, since it facilitates the transfer of technology enabling energy to contribute to sustainable development.

g. *Rural electrification*

This group was set up to promote and speed up solutions for sustainable rural electrification in order to increase energy services in indigenous and rural communities in order to improve the quality of living.

This group has been coordinated by Chile since the First Summit of the Americas in 1994 and has held four meetings. The subjects discussed at these meetings include:

- Suggestions of instruments for information exchange
- Common challenges and differences in the rural electrification situation in the countries of the hemisphere.
- Need to gather basic information.
- Cooperation needs.
- Possible activities.

Among the activities that were carried out, the following are noteworthy:

- Design, application, and systematization of the results of a survey on rural electrification in the countries of the hemisphere in 1996. The same was applied once again in 1997 and 1998 in order to broaden and update the information that was compiled.
- Latin American Rural Electrification Conference (CLER), Chile, 1997.
- On the basis of the proposal made by Chile (July 2000) to reactivate the working group and to enlarge and update basic information, it was decided that a new questionnaire should be prepared, aimed at learning about the progress made in the different policies and schemes for rural electrification programs in the hemisphere. This questionnaire has been applied, a high response level has been obtained, and the report that will be submitted to the Fifth Meeting of Ministers of the Hemispheric Energy Initiative, which includes an analysis and comparison of the situations of each country, is being prepared. Afterwards, a workshop will take place in Santiago de Chile to continue with the proposed work.

h. Climate change

This working group was activated to exchange information and analyze cooperation activities and mechanisms between the countries of the hemisphere, in the light of the United Nations Convention on Climate Change and the decisions taken at the Third Conference of the Parties in Kyoto.

At the Eighth Steering Committee Meeting, held in Lima in February 1999, there was discussion about the experiences of the countries and the possible steps to be taken in the future. This meeting proposed the following working plan:

- Round table discussion of the experiences and opinions of the countries regarding the opportunities and implications of the Kyoto Protocol for the energy sector, and the activities for energy or energy-related technology in order to address the subject of climate change.
- Methodology workshop on the development of inventories of energy-related emissions, as well as their monitoring and reporting.
- Workshop on the potential use of energy to help countries in their sustainable development efforts, focusing on renewables and energy efficiency.
- Workshop on the exchange of information on opportunities and implications of the Kyoto Protocol for the energy sectors of the Americas with a focus on the clean development mechanism (CDM).

This working group has not held a second meeting because various factors have prevented it from doing so.

4.2 New working group structure

At the Tenth Steering Committee Meeting, held in Arequipa, Peru, a scheme was adopted for restructuring the HEI Working Groups; this will have to be submitted to the consideration of the energy ministers. According to this scheme, the groups should come under four main subject areas, which could include specific topics, targeted activities, and ad hoc groups, which would conduct their actions with the assistance of task facilitators. The subject areas are indicated below:

Subject Area	Working Groups
Energy and social development	Rural electrification Indigenous communities Energy supply and demand security
Energy and the environment	Clean technologies Transfer of technology Climate change Energy efficiency
Energy and integration	Promoting investments Financing mechanisms Natural gas, electricity, and oil
Energy and regulation	Regulatory frameworks Harmonization standards

5. PROSPECTS

The processes that have been mentioned cannot resolve all the problems and, because of this, one should continue studying them in depth and correcting undesirable impacts until second-generation reforms can be implemented.

To do this, some basic requirements have to be met, using as a reference the need to:

- Elaborate a hemispheric stance for energy development, one that recognizes the differences between the subregions of the continent.
- Ratify the unavoidable responsibility of governments to formulate energy policies that emphasize the fine-tuning of legal, regulatory, and supervisory frameworks that facilitate the functioning of regional markets.
- Develop the expansion of knowledge in order to provide the population with sufficient skills to cope with technological change and facilitate the use of more modern and efficient equipment and tools.
- Facilitate access to new intangibles: management capacity, organizational innovation, ways of marketing and handling market diversity, providing consumers with a greater freedom of choice.
- Facilitate natural gas and electricity interconnections in the region in order to expand coverage and diversify energy supply in the countries, favoring sustainable development.
- Promote the establishment of subregional energy markets for electricity and natural gas with a regional scope.
- Give incentives to all forms of renewable sources of energy.
- Take modern energy services to the poorest sectors of the population and those sectors that are far from existing energy infrastructure.

On the basis of the above, the present document is aimed at highlighting the fact that the problems that have to be tackled by the HEI require viewing energy issues beyond the limited realm of technology or system operation, because of its many links to the social, economic, and environmental aspects of the hemisphere's countries.