

Energy Magazine



EDITORIAL:
THE REGION
AND OLADE

Year 26, number 4, October-November-December 2002

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THE REGION AND OLADE



In the face of challenges and opportunities stemming from new international geopolitical and economic realities, Latin America and the Caribbean urgently needs to give a definitive impetus to the transformation processes of its economy and integration, as the indispensable groundwork for the region to consolidate its role on a world stage that is increasingly competitive and characterized by the incidence of blocs and regional development agreements.

In this context, which should be viewed as a task of paramount importance for Latin America and the Caribbean at the start of the 21st century, the energy sector is called upon to play a decisive role by promoting projects for the physical integration of the sources that offer this possibility, such as electricity and natural gas, promoting regional energy security based on the rational development of the many abundant energy sources that are available and the creation or enlargement of markets for energy products in the framework of the principles of sustainable development.

So that the energy sector can perform this fundamental role, it is necessary to meet requirements that currently constitute goals for the players of the energy sector in the region: attracting investments for the development of the sector, continuing efforts to harmonize the sector's technical and legal regulatory frameworks, and building up the State's regulatory activities.

In this context of opportunities and challenges, the Latin American Energy

Organization is an instrument at the service of its 26 Member States and should be used to bring nations closer together and optimize energy so as to improve the quality of living of the population in Latin America and the Caribbean, a region that stands out for the qualities of its inhabitants and for having the planet's richest biodiversity.

The energy integration and cooperation actions and achievements that have been made in the framework of OLADE will certainly highlight its political and technical potential to reassert its institutional role in the region. Nevertheless, now that the Organization is about to celebrate its 30th anniversary, it is indispensable for the Member States to strengthen it as the region's preeminent energy forum, which has a vision of energy at the service of mankind and can become a driving force behind sustainable development.

Furthermore, we have proposed the formulation of specific Energy Charters for the subregions of Latin America and the Caribbean as valid instruments for consolidating reforms that were carried out in the sector the past decade and to have a clear vision of its future, by means of a process culminating in express commitments and binding obligations.

Europe has an Energy Charter that guides energy sector proposals and actions in one of the world's most successful integration processes.

Our idea has been welcomed initially by the Caribbean and Central American subregions. We hope that the future will demonstrate and confirm the usefulness of these development instruments in other subregions.

Current circumstances are a true test for OLADE's objectives and for the political postulates of the Lima Agreement, which is the Organization's charter. They are also a historical challenge for its Member States aimed at coordinating positions and interests in the search of new courses of action.

Finally, at the term of my activities as OLADE's Executive Secretary and Editor-in-Chief of the *Energy Magazine*, in this my last editorial I would like to extend my congratulations to Mr. Diego Pérez-Pallares, who is succeeding me as Executive Secretary of OLADE, and to wish him much success in his endeavors over the next three years. I would also like to express my appreciation to the readers of the Magazine, its editor, Gustavo Martínez, the translator Patrick Saari, and the graphic artist Juan Carlos Vega.

A handwritten signature in blue ink, appearing to read 'Julio Herrera'.

Dr. JULIO HERRERA
Executive Secretary



XXXIII MEETING OF MINISTERS OF OLADE DECIDES TO CONTINUE MODERNIZING THE ORGANIZATION



The Vice-President of Ecuador, Mr. Pedro Pinto-Rubianes, officially inaugurates the XXXIII Meeting of Ministers of OLADE.

The XXXIII Meeting of Ministers of Energy of the member countries of OLADE, held in Quito, Ecuador on November 19-20, 2002, adopted major decisions aimed

at continuing to modernize and build up the capacity of the Organization.

The Meeting of Ministers felt that new regional and world circumstances, in

respect to new trends of the economy, the functioning of energy markets, and institutional changes that have taken place in some member countries and the regulation processes that have been



At the opening ceremony of the XXXIII Meeting of Ministers of OLADE, from left to right, Mr. Pablo Terán, Minister of Energy and Mines of Ecuador; Mr. Mario Requena, Vice-Minister of Hydrocarbons of Bolivia and Chairman of the XXXII Meeting of Ministers; Mr. Pedro Pinto, Vice-President of the Republic of Ecuador; and Dr. Julio Herrera, Executive Secretary of OLADE.

promoted in others, highlight the advisability of further modernizing the Organization and adjusting its strategy.

The Ministers and official delegates of the member countries emphasized the importance of strengthening and modernizing the Organization, for which purpose it is necessary to strengthen its role in the region's energy sector and reformulate its organizational structure and managerial model, bearing in mind the provisions of the Lima Agreement, OLADE's charter, and the definitions of its mission, vision, strategy, objectives, and functions.

Regarding this, the Meeting agreed to thoroughly redesign the organization's structure and management model, in

line with the new scenario that is being developed in the region for the energy sector and especially in respect to three strategic objectives: development of energy policies, promotion of scientific and technical exchanges, and the promotion of regional energy integration.

The ministerial meeting was inaugurated by the Vice-President of the Republic of Ecuador, Mr. Pedro Pinto-Rubianes, who welcomed the official delegations and observers from international organizations and cooperation agencies attending the meeting. Ecuador's Vice-President also underscored the importance of the energy sector as an essential element for the development of the countries of Latin America and the Caribbean.

At the opening ceremony of the Meeting, the Vice-Minister of Hydrocarbons of Bolivia and Chairman of the XXXII Meeting of Ministers of OLADE, Mr. Mario Requena, also spoke, emphasizing the importance of the Organization and the need to consolidate its role in the region's energy sector since the future of the sector requires a joint political strategy promoting the integration and cooperation of the Organization's member countries.

OLADE's Executive Secretary, Dr. Julio Herrera, in his address at the opening ceremony for the ministerial meeting, said that "the reforms carried out in the nineties constitute a driving force for the achievement of many of the objectives established in our countries



The XXXIII Meeting of Ministers, held on November 19-20, 2002, agreed to undertake an in-depth restructuring of the Organization and its management model, in line with the new energy scenario being developed in the region, especially in respect to three strategic objectives: the development of energy policies, the promotion of scientific and technical exchanges, and the promotion of regional energy integration.

and for converting energy into a leading sector for the development of Latin America and the Caribbean. In the first years of the 21st century, our challenge consists of maintaining and building up this leadership. We will be able to do so if we extend the process of sector reforms and take better advantage of the major human and material resources that are available in the region."

In compliance with current regulations, the Meeting elected the representative of Honduras, Mr. Leonardo Matute, to chair the XXXIII Meeting of Ministers; El Salvador, represented by the El Salvadoran Ambassador to Ecuador, Mr. Rafael Alfaro, to be Vice-Chairman of the Meeting; and Chile, represented by Mr. Carlos Piña, Director of International Affairs of the National Energy Commission of Chile, and Ms.

Teresa Soffia, Engineer for the International Affairs Area from the same institution, to act as Rapporteur.

Ministerial dialogue on topics involving regional energy development

During the Meeting, the official delegations submitted proposals and debated about different subjects referring both to the situation of the energy sector in their own countries and the region and to the role of OLADE and proposals for regional cooperation.

They agreed to point out that the region has an abundance of energy resources and that its potential for complementation provides a wide range of opportunities. Likewise, they highlighted the importance of nonconventional renewable energy sources and the great interest in sharing scientific, technological,

and regulatory aspects in this matter. In this context, wind, solar, and geothermal energy and especially bioenergy in industry and farm products were emphasized. Regarding this, interest in learning about and using the opportunities being provided by the application of the Clean Development Mechanism of the United Nations Framework Convention on Climate Change (UNFCCC) was expressed.

In respect to the integration of energy markets, the Meeting insisted on its importance for the region, the broad availability of existing resources, especially natural gas, and their contribution to the diversification of energy matrices. It also mentioned the various successful interconnection experiences between some of the region's countries.

The Meeting also emphasized the advisability of promoting and consolidating initiatives that provide incentives for intra-regional cooperation, so that the countries could see themselves as complementary rather than as competitors in the energy sector, thus facilitating the obtaining of joint funding and investments.

Regarding OLADE's role, two spheres of action were recognized, one referred to as the strategic or political sphere and the other referred to as the tactical sphere, both of which have to be developed with high professional and technical standards so as to contribute to the consolidation and deepening of energy integration of the member countries.

Strategy and Programming Committee for the year 2003

The XXXIII Meeting of Ministers elected Guatemala to chair the Strategy and Programming Committee and Bolivia, Brazil, Cuba, Chile, Trinidad and Tobago, and Venezuela to be the Committee's members.

AMBASSADORS OF THE MEMBER COUNTRIES OF OLADE COME TOGETHER AT THE REQUEST OF THE ORGANIZATION'S PERMANENT SECRETARIAT



To show their political support to the Latin American Energy Organization, the ambassadors and diplomatic representatives of the Organization's member countries to the Ecuadorian Government held two working meetings, on November 8 and 13, 2003, at OLADE headquarters, in order to coordinate actions for holding the XXXIII Meeting of Ministers of OLADE.

This Meeting was initially scheduled for November 7-8, but the emergency situation in Quito because of the eruption of

the volcano El Reventador forced the Organization to postpone the Meeting to November 19-20, 2002.

The coordinated action of the ambassadors and diplomatic representatives with the Organization's Permanent Secretariat contributed to ensuring the holding of the Meeting of Ministers in a relatively short lapse of time between the two announcements and the attendance of official delegations from 22 member countries. Because of this, OLADE would like to extend its thanks to these diplomatic missions.

MEETING OF MINISTERS COMMENDS JULIO HERRERA BY ACCLAMATION AT THE END OF HIS TERM OF OFFICE AT THE HEAD OF OLADE



On November 30, 2002, Dr. Julio Herrera's duties as Executive Secretary of OLADE came to an end. At OLADE's XXXIII Meeting of Ministers, he tendered his resignation, thus leaving OLADE two months earlier than planned in order to return to his country and join the Senate of Uruguay as of December 1, 2002.

After Dr. Julio Herrera presented the report on the activities that were carried out when he was at the head of OLADE, since January 2002, he was applauded by the official delegations participating in the XXXIII Meeting of Ministers of the Organization.

Upon accepting his resignation as Executive Secretary, the Meeting of Ministers decided to congratulate Dr. Herrera by acclamation for his outstanding work during his term of office.

DIEGO PEREZ-PALLARES, OLADE'S NEW EXECUTIVE SECRETARY

The XXXIII Meeting of Ministers of Energy of the member countries of OLADE, held on November 19-20, 2002, in Quito, Ecuador, unanimously elected, by acclamation, Mr. Diego Pérez-Pallares, an Ecuadorian national, to be Executive Secretary of the Latin American Energy Organization for the term of office 2003-2006. The delegations attending the Meeting also expressed their total support and collaboration for the activities that the new Executive Secretary will have to carry out.

After his election, Mr. Pérez-Pallares was invited to address the Meeting, on which occasion he thanked the delegates, on behalf of Ecuador, for the trust placed in him. He indicated that it was with great enthusiasm that he accepted this extraordinary responsibility, which he will fulfill to the fullest of his capabilities and with the clear intention and determination to reactivate OLADE, in keeping with the spirit of renewal expressed by the member countries.

Diego Pérez-Pallares earned a B.A. in social sciences from the Catholic University of Ecuador. His academic background includes studies in economics at the University of Rome and in foreign trade and integration at the University of Chile.

He has also taken special courses on modernization at the Catholic University of Ecuador, courses on concessions and privatization at the University of Buenos Aires, and master's degree courses in economics and public services regulation at the University of Barcelona.

He has held various positions in both the public and private sectors. At the time of his election as Executive Secretary of OLADE, he was President of the National Electricity Council of Ecuador (CONELEC).



The election of Diego Pérez-Pallares (left) as Executive Secretary of OLADE was unanimous and by acclamation at the Organization's XXXIII Meeting of Ministers. In the photo, the outgoing Executive Secretary, Dr. Julio Herrera, congratulates Mr. Pérez.

Address by the Executive Secretary of OLADE, Dr. Julio Herrera, at the Opening Ceremony of the Organization's XXXIII Meeting of Ministers, November 19, 2002

We are holding the present XXXIII Meeting of Ministers of OLADE after extraordinary circumstances have forced us to postpone its date on two occasions. The last reason for this postponement has been the eruption of the volcano El Reventador, which has substantially disrupted the economy and life of Ecuador. This extraordinary circumstance, however, has not prevented us from holding this meeting, and this is an important fact that has to be highlighted. At the same time, Mr. Vice-President of Ecuador, I would like to express, on behalf of all the delegations present today, our deepest feeling of solidarity for the situation experienced by Ecuador and for the efforts it is making to recover from this disaster. These days, for a moment I felt there could be some explanation for what occurred with the volcano: Ecuador, which is comprised of a relatively small territory, has a high concentration of incredible natural beauty, but the counterpoint to this beauty is the challenge of dealing with natural phenomena of this magnitude. Once again, our solidarity, our confidence, and our faith that these difficulties will be overcome because Ecuadorians are used to coping with these natural phenomena and will do so in the best way possible.

We are thankful for the hospitality that the government, the city of Quito, and its inhabitants have extended to us these days and to me personally for

almost three years at the head of OLADE.

I would like to share a few brief thoughts regarding the international circumstances that we are currently living, which involve challenges for both countries and organizations. During the nineties, overwhelming hope swept the world. We were leaving behind years of conflicts and the likelihood of aggression, a disastrous war that could have involved the entire world. With the disappearance of these fears, we believed that we were entering a world of prosperity, dialogue, negotiations, where the manifestation of legitimate economic interests among the different regions of the planet would be resolved by civilized means, that mankind was going to witness an era not only of peace but also of permanent, progressive prosperity, that would enable us to conduct successful negotiations between these regions. This was how the nineties passed. They were years of major transformations in all sectors of our countries, they were years of hope, and they were years of investment.

The 21st century has brought with it certain changes: a new outbreak of economic crises, stock market volatility, the maintenance subsidies and protectionist policies by the more developed markets for the products coming from this region of the world. It has also given us the 11th of September, a

tragic day that will never be wiped from the memory of mankind because of the cruelty of the attack. This has changed our perspective. There were also other events in addition to the economic crises, the political conflicts and the terrorist attacks. For example, there was also the fall of companies that worked in the market system and which public opinion, including that of both specialists and nonspecialists, viewed as genuine cathedrals of the system. One day, when we turned on our television set or read the newspaper, we found out that these cathedrals had collapsed overnight as if they had been built on sand.

The scenario for the nineties, one of hope and certainty, leaving behind an era of conflicts, has been replaced by uncertainties, mistrust and even irritation, which have exerted an impact on the mood of public opinion. Hope has been replaced by ill humor, and the certainty that we were going to reach a higher goal has been substituted for uncertainty. None of our countries has been spared from this shift of mood. How could they be? Nor have international organizations, the ones attending the present XXXIII Meeting of Ministers, been exempt from it either. When we were sharing thoughts with our colleagues from other international organizations, we realized that we had common problems that we sometimes attributed to their small or large

“These are the challenges that we must take up. The region has the opportunity to provide the world with an energy supply security that conflicts and instability are preventing other parts of the world, which also have an abundance of energy sources, from offering.”

size, but the truth is that we all have the same problems.

In this context, Mr. Chairman, I would like to underscore that Latin America and the Caribbean constitute an energy area of the world that is enormously rich, benefiting from a wide variety of energy sources, and that today the world needs these energy resources because energy is a key factor for productive development and the quality of living of persons. It is no longer a dispensable element; it never was, but in the past it could be circumvented by using other strategies, but now that is impossible. The knowledge society has introduced computer technology and informatics require energy services, especially electricity, and electric power security in turn is linked to oil and gas. Nothing is isolated. These are the challenges that we must take up. The region has the opportunity to provide the world with an energy supply security that other parts of the world that also have an abundance of energy sources are prevented from offering because of their conflicts and instability. Because of this, I would like to take this opportunity, the inauguration of our XXXIII Meeting of Ministers, to say that our energy wealth should be used first of all to guarantee our own energy security, our own productive development, and improvements in the standard of living of our own people in the region. Latin America and the Caribbean, with its dedication to internationalism, should participate in a global world, demonstrating and proposing that, as in the nineties, when many of our countries started a reform process that is now being evaluated, this process should not come to halt, but rather that its most positive aspects should be kept and errors corrected to move ahead and materialize signs of stability, that the world should be told that the region has energy

resources, and that we are capable of contributing to addressing the world's energy concerns.

In this direction, we have worked along many lines of action. I would like to end by mentioning one, namely, integration, in which the Permanent Secretariat has been working. If each one of us goes his own way, we will be unable to show any sign of stability or to restore the pace of investment flows that characterized the nineties and which has clearly declined these first years of the 21st century. Regarding integration, we have come up with the idea of subregional energy charters, so that, along with the economic, commercial, and political agreements of MERCOSUR, the Andean Community, Central America with the Common Central American Market, and CARICOM in the Caribbean, they can be incorporated, as the Europeans did 40 years ago after starting up their integration process, into the energy sector and so that we can start drawing up common rules, objectives that identify us, rules telling us how we want to participate together in international trade, how we are going to use our region's natural resources, and how we want to develop our respective energy sectors. I believe that, to attain this objective, OLADE's Meeting is the most suitable forum. From Jamaica, a Caribbean country, Simón Bolívar addressed his famous Letter of Jamaica to all Latin Americans, urging us to integrate and become one single great nation. It is now time for the men and women of the 21st century, those of us who have come together here and who are involved in the energy sector, to take at least a few steps in the direction that Simón Bolívar was asking us to take in the 19th century.

Thank you very much.

Energy Efficient Residential Lighting: Builders Guide to Home Lighting

Russell P. Leslie, AIA

Introduction

This Builders Guide to Home Lighting offers builders and electrical contractors practical advice for installing energy-efficient lighting in homes. This information comes from *The Lighting Pattern Book for Homes*,¹ a comprehensive home lighting design tool developed from extensive research on lighting technologies and applications as well as consumer surveys.

Lighting is a key visual element of an attractive home. Good, energy-efficient lighting can be more economical than poorly thought-out lighting. Contractors and builders can work directly with customers to select lighting systems that operate economically in new and remodeled houses and effectively meet

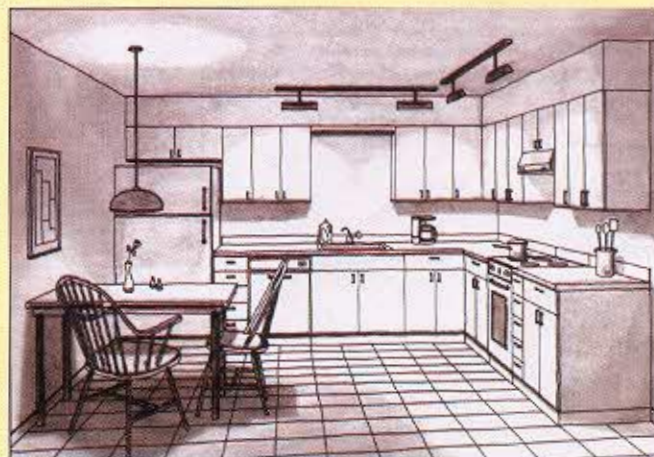
people's visual needs at home. *The Lighting Pattern Book for Homes* includes plans for installing quality lighting in every room, using energy-efficient lamps, luminaires, and controls. The Builders Guide to Home Lighting includes information and details that can be used to help select and install energy-efficient lighting.

General Advice

A lighting system includes lamps (light bulbs), luminaires (light fixtures), and controls (switches, dimmers, timers, and motion detectors). For more information on how to

select lamps and luminaires, refer to the *Lighting Pattern Book for Homes*.

- Use fluorescent lamps and suitable luminaires in rooms that are lighted much of the time. Fluorescent lamps are available in many sizes and shapes.

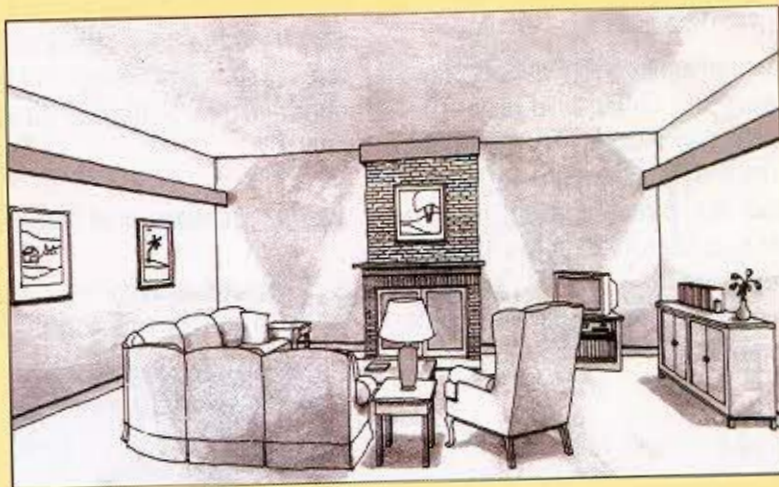


- Fluorescent lamps having color temperatures of 2700 to 3000 K provide a warm light similar to light from incandescent lamps. When a fluorescent lamp is labeled RE730, objects illuminated by its light appear much as they do under an incandescent lamp. Light from lamps labeled RE827 or RE830 renders the color of objects in a room even closer to incandescent light.
- Use at least a small window or skylight in every room to provide general lighting. In large rooms install windows on more than one wall if possible.
- Light-colored walls and ceilings maximize the impact of light. Consider whitewash or light-colored stain for wood ceilings and walls.
- Electronic ballasts minimize the flicker and noise often found in lighting systems with magnetic ballasts.
- When a luminaire designed for incandescent lamps must be used, a screwbase compact fluorescent lamp may be the correct choice. These compact fluorescent lamps fit in many luminaires designed for incandescent lamps. To maintain acceptable light output, select a compact fluorescent lamp of at least one third the wattage of the incandescent lamp being replaced.
- When people look at an installed luminaire, they should not be able to see the lamp from usual seated or standing positions. Good luminaire selection reduces this problem.

Architectural Luminaires

Architectural luminaires are built-in lighting systems. A simple architectural luminaire houses one or more inexpensive linear fluorescent lamps. The luminaire mounts to the ceiling or wall; a shielding board conceals the lamps.

- Cove, soffit, and valance architectural luminaires (see Reference 1) flatter living rooms, bedrooms, kitchens, and bathrooms with white

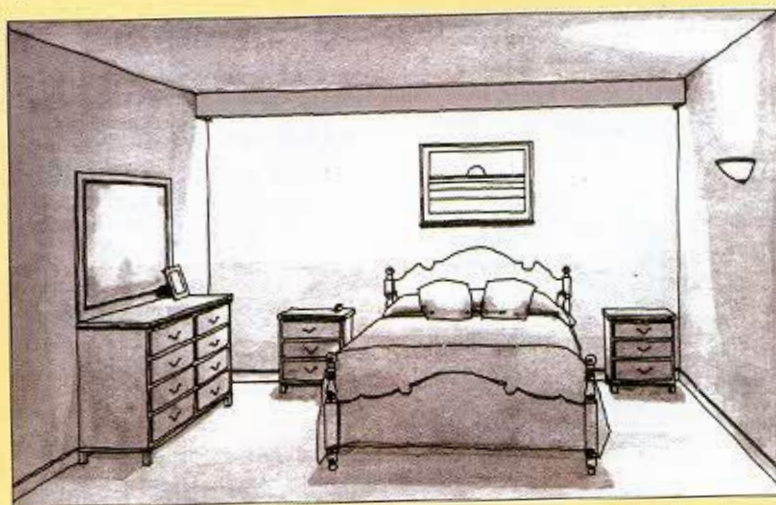


or light-colored walls and ceilings. Soffits and valances in kitchens and bathrooms can provide lighting on countertops.

- Two rows of linear fluorescent lamps, either T8 (1-inch diameter) or T12 (1-1/2-inch diameter), provide enough light even for deep rooms requiring high light levels. Individual switching of each row allows the home owner to have separate low and high light settings.
- Shielding boards can be made from 1" lumber stock, plywood, metal, or drywall. The interior of the shielding board and other surfaces concealed from view should be painted with semigloss white paint for its reflectance and ability to be cleaned.
- Shielding boards can be finished with stain, paint, wallpaper borders, or fabric, making the architectural

luminaire both inexpensive to build and attractive.

- There are a variety of ways to secure architectural luminaires. Fastening a luminaire for linear fluorescent lamps directly to the ceiling or wall reduces the weight on the shielding board, which can be attached to perpendicular walls using angles, hinges, or wood blocking. For longer shields or when luminaires are attached to the shielding board, metal brackets or wood blocking screwed or lag bolted to the rear wall support the additional weight.
- Build the luminaires so that lamps can be replaced without removing the shielding board.
- Architectural luminaires wash walls and ceilings, highlighting finish imperfections, such as taping and sanding irregularities.

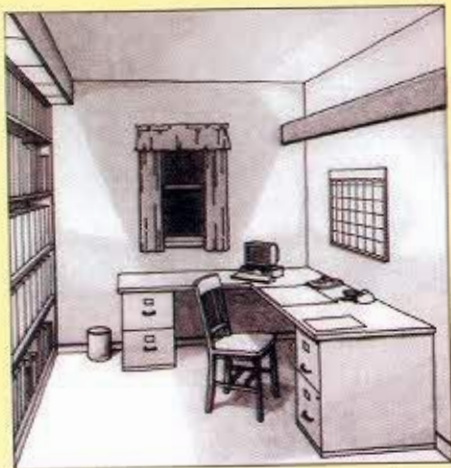


Soffits

Architectural luminaires that direct light downward are called soffits. Soffits wash walls and provide general lighting in rooms with low ceilings. Soffits can be used for direct lighting over a counter or a table in many work areas. Recessed soffits can be installed between joists that run parallel to the wall.

Valances

Valances (architectural luminaires that direct light both upward and downward) provide general lighting and wallwashing. The top of a valance can be aligned with the tops of windows and doors.



Coves

Coves are architectural luminaires that direct light upward. Coves fit well in rooms with high or vaulted ceilings and above kitchen cabinets. For best results the top of a cove should be at least 18"



from the ceiling and its base at least 6'8" from the floor. In kitchens, install the cove right atop the cabinet, although the clearance often will be only 12".

Baffles, Louvers, and Diffusers

Architectural luminaires can often be left open above and below the shielding



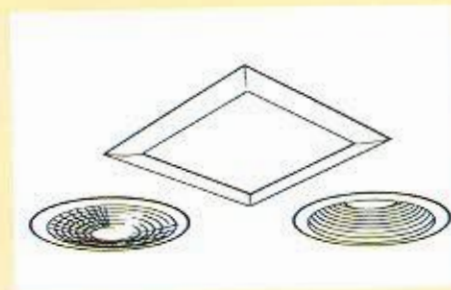
board. Baffles, louvers, and diffusers can eliminate most direct views of the lamps from normal viewing positions and landings overlooking the room. Baffles are parallel blades that come in different sizes, finishes, and blade heights and spacings. One-inch-high white blades separated by a 1" space are usually appropriate. Baffles are manufactured 6" to 10" wide and 4' long.

Louvers, or egg crates, usually have cell sizes of 1/2" x 1/2" x 1/2" and are cut to fit from a 2' x 4' sheet by the contractor. Polystyrene yellows, so acrylic and painted metal make better louvers. Louvers are finished in white, silver, and gold.

Diffusers completely eliminate all views of the lamp, but they reduce the light output from the luminaires more than louvers and baffles do. Builders cut diffusers from acrylic, K-12 prismatic lenses. Diffusers work best when installed prism-side out or when made of a matte-finish, acrylic opal.

Recessed Luminaires

Two types of recessed luminaires fit attractively into homes. Round



recessed downlights are called cans and high-hats. Downlights called troffers are larger square or rectangular downlights that usually house fluorescent lamps or halogen reflector lamps.

- Use a recessed downlight luminaire designed for compact fluorescent lamps, rather than putting a screw-base compact fluorescent lamp in a downlight designed for an incandescent lamp.
- Position recessed downlights near important visual tasks.
- Wall-wash recessed luminaires light a wall evenly. They should be spaced as far from each other as they are from the wall.
- Wall-wash luminaires mounted closer to the wall than 1'6" produce harsh, scalloped patterns of light on the wall. Manufacturers provide proper mounting positions on product literature.
- Manufacturers offer a variety of accessories for recessed downlights. Baffles and trim cones that are deep or dark in color reduce a luminaire's efficiency.
- A room may contain many recessed downlights. Home owners can create a variety of scenes if the luminaires are wired in several groups for separate control; wall-wash luminaires should be grouped separately from general room lights. Dimmers installed on incandescent lamps extend the user's ability to set room scenes.
- Grazing light from recessed downlights installed close to walls accentuates taping and sanding irregularities in the same way as light from architectural luminaires.

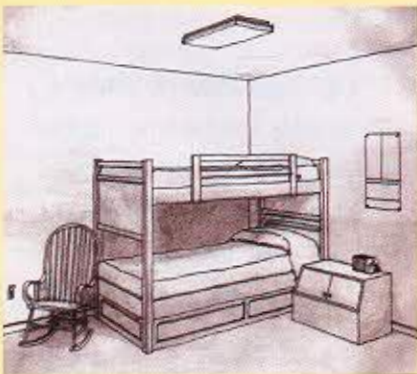
- Wall-wash luminaires should not be aimed toward doors or windows.



- A recessed luminaire installed in an insulated ceiling or roof cavity must be IC rated. IC-rated luminaires are designed so insulation can cover and abut the luminaire. Luminaires manufactured to restrict air leakage through the luminaire are labeled performance tested.

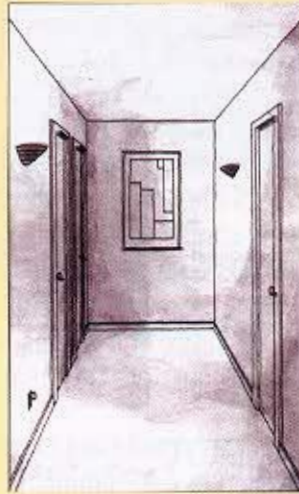
Ceiling- and Wall-Mounted Luminaires

- The RE730, RE827, and RE830 fluorescent lamps that work in architectural and recessed luminaires can be used in ceiling- and wall-mounted luminaires.
- Luminaires containing linear, long twin-tube, or circline fluorescent lamps are ideal for kitchens, playrooms, home offices, and utility rooms.
- Screwbase capsule or screwbase globe compact fluorescent lamps fit many simple ceiling-mounted luminaires and porcelain sockets. For example, a capsule compact fluorescent lamp in a porcelain socket is a good choice for a basement or utility



ty room if the light is left on for long periods of time.

- Select wall sconces that are designed solely for compact fluorescent lamps for hallways, bedrooms, and living rooms, and in rooms with low ceilings.

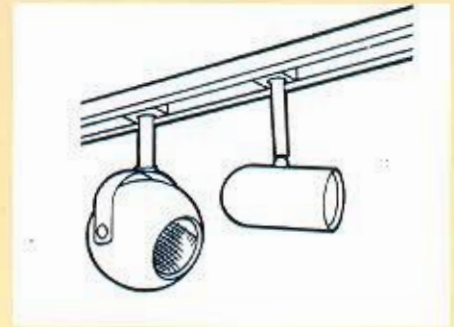


- In bathrooms, luminaires positioned vertically at the sides of the mirror and above light-colored counters provide the best visibility to the underside of the chin. Linear or long twin-tube fluorescent lamps work especially well in the bathroom in separate luminaires or built into vanity mirrors or medicine cabinets.
- Compact fluorescent globe lamps substitute for the incandescent Hollywood lights popular with home owners. When a home owner insists on vanity lights above the mirror, the luminaires should be 6'6" above the floor.



- Incandescent track lighting should be used only where flexibility or accent lighting is important. If the

track heads do not have a built-in reflector, use halogen reflector lamps.



- Position track heads so lamps are not visible from usual seated or standing positions
- Wall-mounted luminaires less than 6'8" from the floor should not protrude more than 4" from the wall.
- Installing junction boxes at least 5'9" above the floor allows wall sconces to be positioned high enough so that people don't bump into them.

Exterior Luminaires

- For lighting large areas, IR halogen PAR flood lamps are the most efficient incandescent PAR flood lamps. Halogen PAR floods are more efficient than standard PAR floods. Motion detectors for security lighting switch on lamps only when motion is sensed. Integrated photocells are a good feature for luminaires that house lamps that operate all night.
- For porch lighting, post-top lighting, or small area lighting, compact fluorescent lamps enclosed in a luminaire suffice when lower light output in cold temperatures is acceptable.
- Metal halide lamps work well for lighting large areas for extended use. High-pressure sodium lamps are a poor choice when color is a consideration. Mercury lamps are less efficient than metal halide lamps and are almost as poor for color as high-pressure sodium. These three HID



lamps warm up a few minutes before reaching full intensity and require special ballasts.

- Solar-powered landscape and walk lighting requires no wiring for power and install easily.
- Floodlights mounted high on buildings provide wider light distribution. Poorly aimed floodlights aimed at windows can disturb residents, neighbors, and others in or near the space.
- Luminaires with an Underwriters Laboratories (UL) wet location listing withstand exposure to the weather. Porch ceilings are typical of settings which provide enough shelter for damp location luminaires.

Controls

Controls provide lighting flexibility and reduce energy costs.

Switches

- Children or people in wheel chairs can more easily reach switches installed less than 4' 0" from the floor. Switches installed under 4' 0" are also under the drywall seam.
- Room entrances make convenient locations for switches. Manufacturers make three-way or four-way switches for rooms that have more than one or two entrances.
- In lighted closets with swinging doors, a door switch (a small switch mounted on the inside face of the door jamb) can automatically turn off the closet light when the door is closed.
- If a luminaire cannot be seen from a switch location, such as an exterior light or basement light controlled from the top of an enclosed stair, a switch with a small indicator light highlights that the light has been left on.

Dimmers

- A dimmer installed in the wall switch box provides a range of light outputs

in a space. Lower-wattage or fewer lamps are better solutions for providing consistently less light.

- Any circuit that has a low-voltage lamp requires a dimmer designed for low-voltage lamps.
- A dimming ballast must be installed to dim fluorescent lamps. A fluorescent lamp dimmer works in tandem with the dimming ballast to lower the light level. The wiring diagrams provided by manufacturers are important because fluorescent lamp dimmers require more wiring than incandescent lamp dimmers.
- Do not install any fluorescent lamps, including a screwbase compact fluorescent lamp, in a luminaire controlled by an incandescent lamp dimmer.
- Receptacles should not be dimmer controlled; a non-dimmable appliance plugged into a dimmed receptacle may be damaged from operation on the reduced power of a dimmed circuit.
- Verify with instructions the maximum load of a dimmer and its required derating for installation in multi-gang boxes. Use commercial-grade dimmers if the connected load exceeds 600 watts.

Timers

- Rooms that are infrequently occupied and luminaires that are operated for short periods of time, including vanity lights, bathroom heat lamps, closet lights, and pantry lights, provide the best applications for interval timers.
- Solid-state electronic interval timers operate quietly.
- Timers are not appropriate for showers and rooms where people could be stranded in the dark if the lamps turn off.

Motion Detectors

- Motion detectors automatically switch off lights. Motion detectors are useful in rooms where lamps are

often left on, such as bedrooms, bathrooms, walk-in closets, and exterior applications.

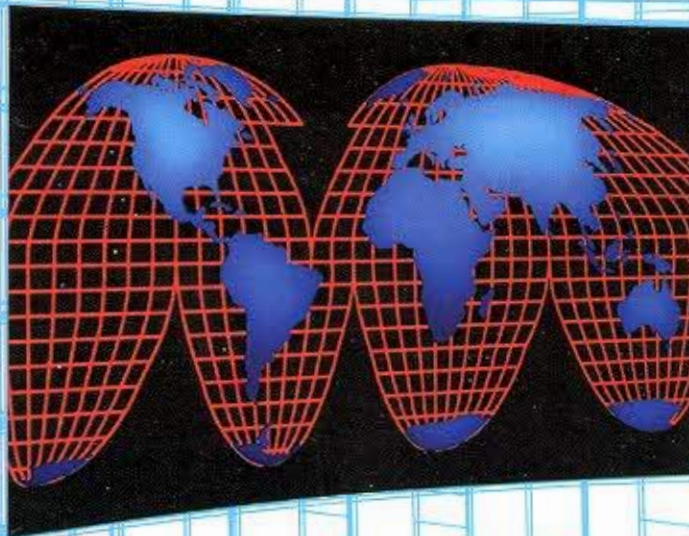
- In homes, install motion detectors in place of standard wall switches. Some motion detectors fit standard "Decora"-style wallplates.
- For interiors, manual on/automatic off motion detectors do not turn on the lamps unless someone touches the switch, so pets and incidental movement don't trigger the detectors. These detectors turn off the lights when no motion is sensed for a set period of time.
- High-intensity discharge (HID) lamps including metal halide, high pressure sodium, and mercury vapor lamps take several minutes to come up to full brightness when they are switched on and, therefore, shouldn't be used with motion detectors because instant full light output may be important.

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This article is available courtesy of the Lighting Research Center through CIELA, a program sponsored by the United States Department of Energy. CIELA stands for Collaboration in Efficient Lighting in Latin America. The program promotes the use of energy-efficient lighting technologies and practices in Latin American countries.

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Electric Power

Interconnections

in the Andean

Region

Eduardo Cazco Castelli*
Geovanny Pardo Salazar*

Introduction

At the initiative of the Ministers of Mines and Energy of Colombia and of Energy and Mines of Ecuador, a process that is expected to lead to the integration of an electric power market in the Andean Community started up in March 2001.

This past year, the countries of the Andean region, mainly Colombia, Ecuador, and Peru, with the subsequent incorporation of Venezuela, have taken the decision to carry out an interconnection process between their countries, for which purpose they have undertaken the task of harmonizing their regulatory frameworks, which is essential for electricity exchanges.

The experience in harmonizing regulatory frameworks will be dealt with in the present article, which will be addressing the technical and economic issues on which electricity trade between the Andean countries is based.

Background

The Ministers of Energy of Colombia and Ecuador had been holding conversations since March 2001 on the possibility of installing an interconnection between the two countries. Afterwards they invited the Minister of Peru to participate in these conversations.

On the basis of these conversations and prior work by regulatory agencies, the Ministers of these three countries met in Cartagena de Indias, Colombia, on September 20-21, 2001 and signed the Agreement for the Regional Interconnection of Electric Power Systems and International Electricity Exchange.

The delegate of the Minister of Energy and Mines of Venezuela participated in the signing of the Agreement as an observer.

This Agreement provides for the establishment of two working groups:

- The first group focusing on standard-setting and regulatory issues, comprised of delegates from regulatory agencies.
- The second group focusing on technical, operational, and commercial issues, comprised of delegates from the institutions in charge of operating the systems and administering the markets, as well as the carriers of the countries.

By means of this Agreement, the group of regulators is in charge of drafting a proposal for harmonizing regulatory frameworks, within 60 days, with the full-time participation of the delegates of the regulatory agencies.

Harmonization of Regulatory Frameworks

The working group is comprised of delegates from the Energy and Gas Regulation Commission of Colombia (CREG), the National Electricity Council of Ecuador (CONELEC), the Energy Investment Supervision Office of Peru (OSINERG), and the Foundation for Electric Power Service Development of Venezuela (FUNDELEC).

The group's first job was the analysis of regulatory frameworks of each country and their degree of development, specifically in areas involving the import and export of energy. This analysis enabled the group to identify the issues that could affect the possibility of installing electric power interconnections.

The issues that were identified were as follows:

- Power generation price discrimination
- Types of international trade transactions
- Remuneration for power capacity in international transactions
- Agents participating in international transactions.
- Treatment of operational constraints and inflexibilities.
- Treatment of exportable amounts
- Additional fees for transactions
- Tax and administrative regime
- Remuneration for international connections
- Free access to international connections
- Conflict resolution
- International spot transactions
- Agreement implementation mechanisms

The treatment of each one of these issues makes it possible to focus on the problems associated to international transactions, on the basis of which the analysis was enlarged and the corresponding conclusions and recommendations were reached.

The details of this activity appear in the document entitled "Proposal for Harmonizing Regulatory Frameworks," drafted between October 29 and November 16, 2001.

General Principles

The authorities of the regulatory agencies met in Quito on December 13-14, 2001 and accepted the Proposal for Harmonizing Regulatory Frameworks drafted by the group of regulators. On the basis of this proposal, the general principles to be considered for the interconnection of the electric power systems and electricity trade between the countries were established

These general principles were incorporated into the draft Decision of the Andean Community and consist of the following:



The Ministers of Energy of Colombia, Ecuador, and Peru met in Cartagena de Indias, Colombia, on September 20-21, 2001 and signed the Agreement for the Regional Interconnection of Electric Power Systems and International Electricity Exchange.



On the basis of the rules that were established and reforms of regulatory frameworks undertaken by the regulators, it is hoped that international transactions will start up in January 2003, when the linkage between Colombia and Ecuador, with 230 kV transmission lines, will be ready.

- The member countries will not maintain any price discrimination between their domestic markets and external markets, nor will they discriminate, in any other way, in their treatment of domestic and foreign players in any country, not only in terms of demand but also in terms of energy supply.
- The member countries will guarantee free access to international interconnection lines.
- The physical use of interconnections will be a consequence of the coordinated economic dispatch of markets, regardless of the commercial contracts for the purchase and sale of electricity.
- The electricity sale agreements that are drawn up inside the community will only be commercial. No sale agreement will be able to exert an influence on the economic dispatch of the systems.
- The remuneration of electricity transport activities in international linkages will take into account that enforcement of the principle of free access to linkages eliminates the connection between physical flow and international electricity sale agreements.
- The member countries will ensure competitive conditions on the electricity market, with prices and tariffs that reflect efficient economic costs, avoiding discriminatory practices and the abuse of a dominating position.
- The member countries will permit open contracting between the agents of the electricity market of the countries, complying with the contracts signed in conformity with the legislation and regulatory frameworks currently in force in each country, without placing constraints on compliance with these contracts, in addition to those stipulated in the contracts for national markets.
- The member countries shall permit short-term international electricity transactions.
- The member countries shall promote private-sector investment in the development of the electricity transport infrastructure for international interconnections.
- The revenues stemming from the congestion of an international linkage will not be allocated to the owners of the connection.
- The member countries will not grant any kind of subsidy for the export or import of electricity, nor will it levy customs duties or specific restrictions on electricity imports and exports inside the community.
- The prices of electricity at both ends of the intra-community linkages should serve to value short-term international electricity transactions, as a result of the physical flows determined by coordinated economic dispatches.

Ecuadorian Regulatory Framework

Approval of the above-mentioned general principles requires that the regulatory framework currently in force in the countries be reformed to a greater or lesser extent.

In the case of Ecuador, the regulatory framework has to be modified extensively, to such an extent that the Regulations for Energy Imports and Exports that are in force have to be replaced.

In order to illustrate the importance of the changes, some of the current provisions that have to be changed are presented below: In the current Regulations, there is a physical dispatch of

import and export contracts, priority is given to the use of linkages, depending on the contracts, payment for power capacity to the importing party of the contracts is recognized, prices for the local market and external demand are discriminated, and finally the transactions on the spot market take place if the contracts have not taken up the entire capacity of the international linkage.

The draft regulations prepared by CON-ELEC for international electricity transactions, which would replace current regulations, incorporates the general principles of the Agreements and adapts them to market conditions. Regarding this, for the bill that is being processed in the Office of the President of the Republic, the following concepts are being established, among others:

- The contracts are financial instruments that do not affect the coordinated economic dispatch among the operators of the systems.
- To determine the market's marginal cost, the system's total demand should be considered, that is, domestic demand and external demand in the case of exports.
- Free access to the international linkage is guaranteed.
- The direction of the transaction takes place from the lower-priced market to the higher-priced market and is the outcome of a coordinated economic dispatch.
- To handle international transactions, the CENACE should sign

operational and commercial contracts with its counterpart system operators and market administrators, respectively.

Coordinated Economic Dispatch

The operators of the systems independently carry out the domestic economic dispatch of their resources, determining for each hour the price of electricity in the border nodes (linkage ends), starting with the transfer of 0 MW with gradual increases until the transfer reaches the limits of the linkage.

The price for the transfer of 0 MW is the maximum price that a country would be willing to pay for energy coming from an import, and it has to be compared with the price the other country is willing to sell (transfer dif-



ferent from zero). The direction of the transaction is from the lower-priced system to the higher-priced system. This process is carried out by the operators the day before, for the 24 hours of the following day.

For the formation of prices, the operators should consider all the costs associated to the delivery of energy at the border nodes.

To avoid a transaction that is not economical, owing to the estimates introduced in the determination of prices at the border nodes, the concept of threshold price, which would avoid non-economical transactions, has been incorporated into the analysis of the direction of the transaction.

Once the direction of the transaction has been decided, the country that is going to import carries out its economical dispatch taking into consideration the additional generation, informing the exporting country about the magnitude and periods that it will be importing, so that the exporting country can conduct the economical dispatch taking into account this additional demand located at the border node.

Business aspects

To decide the direction of the transaction, estimates have to be considered to determine energy prices at the border nodes (ex ante prices), whereas the commercial settlement should be carried out using the real prices of the transaction (ex post prices).

International transactions are settled by applying the rules of the importing country. The exporting country is paid the maximum value between its offered price and the short-term price of the importing system.

Because of the above, the exporting market will have an additional income, referred to as the congestion revenue, which is the result of the price differen-

tial between the two systems. This congestion revenue is not transferred to the owner of the connection and depends on the rules determined by the countries independently.

If the importing system fails to pay within the time-limits provided for in the Commercial Agreements signed by the administrators of the markets, the flow through the international linkage to the debtor market should be interrupted.



Regarding this, schemes for guaranteeing payment for international electricity transactions should be established, which should be reciprocal between the countries.

International purchase and sale agreements

Both the Andean Community Decision and the Agreements of the Regulatory Agencies provide for the power of country agents to draw up long-term sale agreements. They also provide for the countries to permit short-term international electricity transactions.

The harmonization process should be gradual. Because of this it is necessary to identify major aspects of international exchanges, whose rules can be expanded to achieve a higher level of integration.

Because of this, at first, the regulators of Colombia and Ecuador will permit, within the market, settlement of only the international electricity transactions, which will be developed during the transition period of one year as of the start of the operations of the international electricity transactions. In this period, the Regulators will study and draw up the regulatory procedures for the settlement of these contracts.

Expectations

On the basis of the rules that were established and reforms of regulatory frameworks undertaken by the regulators, it is hoped that international transactions will start up in January 2003, when the linkage between Colombia and Ecuador, with 230 kV transmission lines, will be ready.

The transition period will enable the regulators, on the basis of experience, to adjust the regulatory framework to expand transfers through the international interconnection.

Likewise, system operators and market administrators will have the possibility of adjusting their processes aimed at optimizing the use of the interconnection.

Definitively, the Andean countries will start up an electricity trade process on the basis of a common groundwork, striving for the benefits from the expansion of markets and their players. It is a new step for the development of markets in Latin America.

* The authors belong to the staff of the National Electricity Council of Ecuador (CONELEC).

COURSES

Nonrenewable energy • Renewable sources of energy • Air, water, and land pollution • Energy economics • Environmental impact assessment • Management of human resources • Environmental management • Environmental and energy legislation • Ecology and environmental chemistry • Strategic environmental planning



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sieal

a legal information tool for multiple applications

Introduction

The region has shown considerable interest in up-to-date and reliable information on different aspects of the energy sector or related information. Among the topics that are drawing the most interest, information on legal and regulatory frameworks is noteworthy, possibly because of the State's recog-

nition that it needs to strengthen its role and capacity as a regulatory and monitoring institution. Complementarily, the region is also increasingly interested in information on environmental issues linked to the development of the energy sector and its subsectors.

Aware of these requirements and in compliance with the general mandate

to contribute to the sustainability of the energy sector of Latin America and the Caribbean, OLADE has undertaken the development and implementation of a Legal Information System on Energy (SIEL), aimed at setting up an effective and reliable information tool on the legal regulatory frameworks currently in force that govern energy activities in the Organization's member countries.



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SIEAL background and justification.

As a rule, the availability of suitable, useful, reliable, and timely information provides elements for sounder decision making and also enhances the participation of nontraditional players in these decision-making processes, ensures greater the transparency of the actions of energy players, and in the specific case of legal information, favors the processes of revising and adjusting laws and regulations, as well as greater and better compliance with legal and standard-setting provisions, including the involvement of civil society in official enforcement efforts.

Throughout the many initiatives undertaken by OLADE, it has been observed that the region requires a broader systematic exchange of information on the status and evolution of legal and regulatory frameworks. In the nineties, sector modernization trends and the resulting transformations of roles and functions of players led to a series of changes and greater development in these frameworks. The States required and continue to require more information about the experiences of other countries in this area, which would enable them to undertake their own processes for the development, adjustment, and reforms of their legal and regulatory frameworks.

Furthermore, the linkage between energy and the environment is incontrovertible. The nineties also witnessed a profusion of both international and national policies and legal instruments promoting environmental sustainability as the groundwork for long-term development. This trend has also been apparent in the countries of Latin America and the Caribbean. That is why one of the areas where the need to share and disseminate information is felt is the environmental management of energy activities, among others, in respect to new or renewed institutional frame-

works, as well as strictly legal and regulatory frameworks.

Finally, those who take decisions in the energy sector, whether they are from the private, public, or nongovernmental sector, are also requiring information that will enable them to conduct a rapid assessment of environmental law governing energy activities and to keep up-to-date on its development in the region.

In this context, the Latin American Energy Organization (OLADE) and the University of Calgary (UC), with support from the Canadian International Development Agency (CIDA) and the Andean Development Corporation (CAF), have been working intensely to support the efforts of the countries of the Latin American and Caribbean region to develop and establish an institutional and legal framework adapted to the demands of sustainable development and environmental protection. The Legal Information System in Energy and Environment intends to meet the needs identified herein by providing a clear, concise, standardized, and systematic information tool.

SIEAL: objective, usefulness and characteristics

The Legal Information System in Energy and Environment (SIEAL) is the environmental module of the Legal Information System in Energy (SIEL), which includes specific regulations for the oil and gas and electric power sectors and environmental legislation applicable to the sector in general. It is based on the legal inventory developed in the framework of the OLADE-UC-CIDA Project on Energy-Environmental Legislation.

Its objective is to provide reliable, up-to-date, and systematized information on environmental legislation currently in force and specific legislation applicable to the energy sector of the member countries of OLADE, through the

The first available module of the SIEL is the Legal Information System in Energy and Environment (SIEAL), which has been developed with the University of Calgary (UC), under the auspices of the Canadian International Development Agency (CIDA) and the Andean Development Corporation (CAF).

compilation, analysis, classification, processing and dissemination of data, as well as the exchange of experiences and opinions and the discussion of important matters relative to the problems of environmental regulations in the energy sector.

In addition to what was indicated above, the SIEAL will perform an important role in promoting integration in the region. The way information is organized in the database facilitates the

basic assessment of current legal environmental conditions prevailing in a country. Because of its characteristics, it is being called upon to become a unique reference tool for consultation and decision making not only by the public institutions of the countries of Latin America but also by potential regional and extra-regional investors and other social sectors of interest. In addition, the information it contains will make it possible to conduct comparative law studies and will serve as

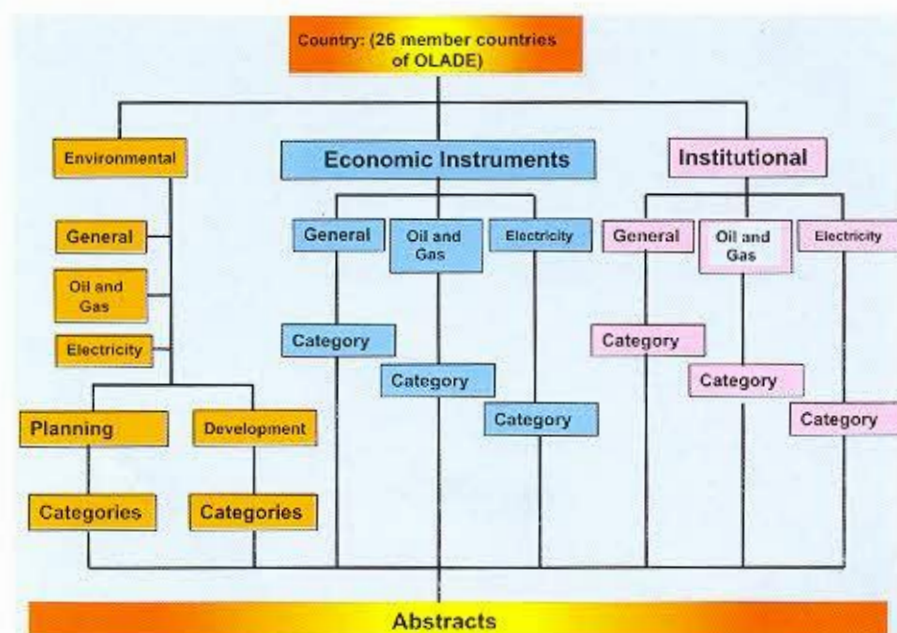
specific information can be extended to other subsectors such as alternative sources of energy. The information provided by the SIEAL considers all the elements, activities, and situations that are being presented or are part of the organization, administration, control, and operation of the energy sector.

The system is accessible via Internet, on OLADE's web page. Nevertheless, considering the limitations of Internet as a means for mass dissemination, it is expected that it will be distributed to the largest possible number of users by resorting to other means of dissemination, including the development of a parallel version on CD, which will also be updated on an ongoing basis

Information contained: types of layouts and format

The design of legislative inventory was based on three relevant categories of laws:

- a. **Environmental legislation:** Laws and other regulations for general application that regulate and control the discharge of pollutants in the natural environment; more specific laws aimed at environmental protection and management such as provisions governing environmental responsibility and the remediation of polluted sites; laws designed to protect biodiversity and special areas. This category includes those laws dealing with specific resources (water, forest resources, etc.).
- b. **Environmental provisions in energy legislation:** Specific environmental requirements for energy operations included in the laws and other regulations governing the



identification of potential incompatibilities between the legal frameworks of the countries. Although the decision to harmonize frameworks to ensure integration is essentially a political one, it is nonetheless certain that the technical work that has to be done after the decision has been taken is usually highly complex, in view of the lack of standardization of the information available in the countries, among other factors. The SIEAL database addresses this difficulty.

The SIEAL is a user-friendly and easily accessible system that will permit a

the basis for drafting legislative proposals in the region.

The contents of the SIEAL have been organized in a series of frameworks with their respective categories, classifying legal information in line with consistent criteria for international environmental law that are applicable and/or relevant for the energy sector. The SIEAL includes the 26 member countries of OLADE and its information is compiled by country. The System differentiates information by areas, the sector in general and specific sectors: oil and gas and electricity. Eventually,

allocation of rights and exploration, development, production, transport, and end-use of energy resources. Where they are available, model contracts for oil and gas exploration and production are also included.

- c. Constitutional and general provisions of the laws** of civil, criminal, and other codes and their complementary provisions. Official policy documents and, in common law countries, common law doctrines relative to the environmental impacts of energy operations will also be included.

In addition, specific operational guides and standards will be included as general reference.

which it is a part and the pertinent article. It should be emphasized that the SIEAL does not offer any historical information. As a result, the regulations that are included are only those that are currently in force in the countries. Nor does it include any suspended or pending regulations.

Database maintenance and update: shared responsibility

The current system has information up to 2001. As indicated earlier, the reliability of a legal information system depends on having data updated on an ongoing basis. Regarding this, the challenge is huge, considering the 26 countries covered by the System and the fact that legislative and regulatory

updates, and by facilitating access by subscription.

The strategy consists of setting up a team led by OLADE, with the collaboration of the University of Calgary and comprised of officers designated by each member country, referred to as SIEAL Advisors. The Program will be training the SIEAL Advisors on how to keep up the system. In turn, the Advisors will coordinate a national group for the maintenance of the information in their respective countries. It is expected that, in addition to OLADE's regular counterparts, the energy Ministries/Secretariats/Agencies of the member countries, other public institutions such as those in charge of the environment, private or public oil companies, universities and academic institutes, nongovernmental organizations, etc., will be participating in this group. The benefits for the SIEAL collaborators include free access to the System throughout their collaboration and public commendation for this collaboration in the media used for disseminating the System.

In any case, the idea is to convert the SIEAL into an instrument with common benefits but whose responsibility is shared by all involved, which will guarantee their sustainability over the long term. In an initial phase, the SIEAL is generally accessible to the public through Internet. This situation could change later to secure funds that contribute to supporting the system.

THE SIEAL: MORE THAN JUST A DATABASE

The SIEAL intends to consolidate itself as a system, rather than just a database. The development of legal, institutional, and regulatory frameworks



SIEAL Advisors Workshop held in Quito, Ecuador, on October 16-17, 2002

The format for processing information is standard. Thus, in all cases, the information appearing under each category of the SIEAL includes an abstract of the regulation or article corresponding to the category's heading. The abstract provides a highly accurate overview of the original text, while avoiding a verbatim copy. It also provides the official identification of the legal instrument of

activities throughout the region are not conducted for standard periods of time.

This difficulty has therefore been referred to as a challenge of sustainability, which will be addressed by applying a strategy that involves decentralization, inter-sector coordination and capacity building inside the countries, in addition to ongoing

"The SIEAL intends to consolidate itself as a system, rather than just a database. The development of legal, institutional, and regulatory frameworks that are more in line with the objectives of environmental sustainability that the region has set for itself will be favored by greater exchange between decision makers and officers of public energy institutions involved in these activities."

that are more in line with the objectives of environmental sustainability that the region has set for itself will be favored by greater exchange between decision makers and officers of public energy institutions involved in these activities.

This exchange has started by conducting workshops with the SIEAL Advisors, who are the mainstays of the strategy for the System's maintenance. To date, two meetings have been held, one in August 2001 for the Andean participants, sponsored by the CAF, and one in October 2002 for the entire region, sponsored by the CAF and CIDA. In addition to training, it was agreed with the participants to request support from high-ranking officers of energy institutions, in order to continue with the scheme of responsibility and shared benefits of the SIEAL. Regarding the latter, Decision XXXI-II/411 by the last Meeting of Ministers held in Quito is noteworthy as it highlights the endorsement of the Ministers for the development of the system and specifically supports the participation of National Advisors.

Complementarily, it has been agreed to establish a SIEAL Network and Forum that promotes the discussion and exchange of opinions and experiences among participating governments.

In addition, SIEAL Conferences have been planned to contribute to the debate on environmental protection and energy sector issues, with a juridical approach based on a multidisciplinary and multisectoral perspective. The first already took place, in October 2002 in Quito, Ecuador, and focused on Rural Energy and Social Issues (indigenous and gender issues). The speakers included one academic, one

indigenous leader, one regulatory official, one government official, and one nongovernmental sector cooperation officer, from both the region and Canada. The participants came from different sectors, including the National SIEAL Advisors from 16 countries of LAC.

ACTIONS TO BE TAKEN...

As indicated, the information is being published on Internet on OLADE's web page: <http://www.olade.org.ec/sieal>. It can be accessed directly or through links such as the Energy, Environment and Population Program Network of OLADE, COICA, ARPEL, and the World Bank or on the web site of the CAF. Eventually, a mirror site will be installed from the University of Calgary. Furthermore, it is expected that, with the coordination of the National Advisors, the national strategies of SIEAL will be consolidated, involving different players, including individuals and organizations, who are interested in collaborating with the System and taking advantage of its usefulness. Periodical updates and their respective publication have been planned. The SIEAL newsletter will be used to disseminate System progress, as well as articles and information that are important for the regional and foreign energy community interested in LAC. The Network and the Forum, although involving limited participation, will be the mechanisms for discussing important issues on regulatory activities in respect to energy and the environment in the region. Finally, steps will be taken to ensure holding the SIEAL Conferences periodically.

Organization of American States and OLADE promote training of professionals in Latin America and the Caribbean

OLADE views training as one of its priority activities. Because of this, it has undertaken initiatives to offer the professionals of Latin America and the Caribbean the opportunity to upgrade their skills to put them at the service of the development of their countries.

In 1996, OLADE and the University of Calgary, Canada, with the sponsorship of the Canadian International Development Agency (CIDA), signed an agreement for implementing the Project in Energy and Environment, which is aimed essentially at supporting and consolidating the efforts that Latin American and Caribbean countries have been making to guarantee the sustainable development of their energy industry.

An essential part of this Project is the Master's Degree in Energy and Environment, which is being conducted at the headquarters of the Permanent Secretariat of OLADE in Quito, Ecuador. It provides courses and seminars that are delivered

over a 14-month period of full-time study, with instructors from the University of Calgary, OLADE professionals, and reputable Latin American universities.

In this context, the Organization of American States (OAS) and OLADE have been holding conversations so that OAS can offer scholarships permitting the participation of professionals from the countries of Latin America and the Caribbean in the above-mentioned Master's Degree Program, whose seventh installment will be beginning in March 2003. In order to promote this agreement, the Advisor to the Assistant Secretary General of the OAS and Coordinator of the Offices of the General Secretariat in the Member States, Mr. Paul Spencer, visited OLADE's Executive Secretary, Dr. Julio Herrera, in Quito, on October 15, 2002. As a senior officer of OAS, he pledged promotion of this agreement, which will be for the benefit of regional energy development.



At the meeting held in OLADE's Permanent Secretariat on October 15, 2002, from left to right, Mr. Paul Spencer, Advisor to the Assistant Secretary General of the OAS; Dr. Carlos María Ocampos, Director of OAS in Ecuador; Mr. Mark Bender, Training Coordinator of OLADE; Dr. Julio Herrera, Executive Secretary of OLADE; and Mr. Jefferson Nunes, Director of Cooperation and Training of OLADE.

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