Proposal for the electrical sector modernization
1 PRELIMINARY CONSIDERATIONS/OVERVIEW

1.1 Goals of the Reform
1.2 History of the Mexican Electricity Sector: Legislation and Technology
1.3 Current Situation of the Mexican Electricity Sector
1.4 Vision of the Mexican Electricity Sector

2 REFORM BILL

2.1 Amendments to the Constitution
2.2 Amendments to Current Secondary Legislation
2.3 Institutional Development
2.4 Structural Change Proposed
2.5 Participants of the Sector
2.6 Restructuring of Tariffs
2.7 Rural Electrification

3 GENERATION DISPATCH

3.1 Operating Premises for Generation Dispatch in Cenace
3.2 Operation of the Generation Dispatch
3.3 Ancillary Services and Reserve Margin
3.4 Nodal Electricity Prices and Energy Contracts

4 ALTERNATIVE ENERGY RESOURCES

4.1 Renewable Energy Resources
4.2 Co-generation

5 REGULATORY FRAMEWORK

5.1 Generation
5.2 Transmission and Distribution
5.3 Electricity Public Service Supply and Selling
5.4 Regulation and Oversight of Generation Dispatch Operation and Rules
5.5 Self-Consumers and Specialized Traders
5.6 Penalties

6 TRANSITION PROCESS

6.1 Modernization of the CFE and LFC
6.2 The Ministry of Energy
6.3 Strengthening of the CRE
6.4 The National Energy Control Center

41 Glossary
1 Preliminary considerations/ overview

Electricity, unlike other energy products, is not a natural resource but an asset which man creates and provides within modern societies to facilitate their daily activities and enhance the growth of its economy. Without sufficient power supply, Mexico’s economic growth over the last century would have been impossible and without a doubt, its future development would be seriously compromised.

Currently, the world’s electricity sectors are undergoing a technological revolution which is radically modifying their organization and operation: power utilities no longer act vertically as plain input suppliers, as they have become specialized companies offering tailor-made goods and services.

Moreover, in a context where the companies’ dealings with the needs of consumers are becoming increasingly close and consumer preferences dictate the direction in which each sector is heading, the electricity utilities have to adopt organizational structures that allow them to meet the specific demands of each and every one of their customers.

In this regard, Mexico must guide its efforts towards modernizing the structure of its electricity sector in order to provide its economy with electricity under the best possible conditions of quality and price, being generated, transmitted, transformed, distributed and supplied by world-class firms that respond to the specific requirements of each user.

1.1 Goals of the Reform

Considering the electricity sector conditions as a trigger for economic and social development and performance, it is essential to create the proper mechanisms so that the sector agents, through their respective participation may improve the quality and lower the cost of electricity service.

To modernize the electricity sector, its entities and institutions must have autonomy in their management, planning and development so as to best respond to the short, medium and long term needs of users, rather than fulfilling objectives not related to those of the industry itself.

The key point is to strengthen the public entities, which implies their transformation. The challenge is to convert them from government entities into State utilities, as government entities use their potential to cover current public expenditure needs, while State utilities represent powerful tools to guarantee the feasibility of our economic and personal development.
In this regard, the structural reform proposal developed by the Federal Government is intended to introduce an industrial reorganization that assimilates the technological progress made over the last few decades, which in turn will create the necessary mechanisms and incentives to guarantee the long term viability of the sector and to induce efficiency in providing the different services expected nowadays of a modern electricity industry, particularly the electricity referred to public service.

To ensure the necessary investments in the electricity sector and thus foster continuous improvements in its operating processes, its current organizational structure must be modified, in order to satisfy the specific needs of those participants which are not considered public service. If all electricity is considered public service, this would seriously jeopardize the proposed expansion and modernization, due to economic issues and lack of investment incentives.

The structural reform proposed is intended to fulfill the following objectives:

- To ensure the supply of electricity so it covers the increasing demand.
- To carry out a comprehensive modernization of the current infrastructure in order to increase the efficiency in the sector.
- To strengthen the sector’s public entities so that their performance is similar to that of their competitors, and therefore become productive public entities.
- To reduce the sector’s dependency on public funds.

1.2 HISTORY OF THE MEXICAN ELECTRICITY SECTOR: LEGISLATION AND TECHNOLOGY

The operation, legislation and regulation throughout the history of the Mexican electricity industry had been based on the technological realities prevailing at the time being.

Accordingly, at the start of the last century the electricity industry consisted of private companies attempting to satisfy the inherent needs of the textile and mining industries. Electricity was distributed on a regional basis, therefore a hundred vertically integrated monopolies had been established to meet the needs of the country’s primary consumption centers. The increasing demand for electricity quickly exceeded the capacity of the small generating plants, thus giving rise to the creation of electricity supply companies.

The absence of a legal and institutional framework capable of regulating the production, transmission and distribution of electricity, was evident in an uneven supply which practically excluded rural zones from the benefits of electricity. Since 1934, in response to regulatory needs, the National Congress has the authority to legislate regarding
electricity issues. For this reason, given the need to extend the service to those areas where projects were not profitable, the Comisión Federal de Electricidad (CFE) (Federal Electricity Commission) was established in 1937.

During the 1940’s and 1950’s there was a clear tendency towards the consolidation of regional monopolies, due to economies of scale enjoyed by the generating plants, whose efficiency increased in direct relation to their size. In addition, there was no information and computer systems available to make the real-time metering needed to ascertain that more than one generating company could operate within the same transmission network. For this reason, these companies elected to acquire others, merge or were themselves purchased.

The economies of scale implied a horizontal integration and the limitations in metering systems resulted in a lack of transparency in the sector’s operation. Therefore, the advantages of achieving vertical integration were self-evident. Accordingly, the different systems began to complement each other; the Federal Government decided to purchase the stocks of the private companies and in 1960 nationalized the electric industry, creating a vertical monopoly which reflected the technological realities of the time and constituted the most efficient industrial organization for the sector.

The technological advances recorded as of the 1980’s changed the perception that there could be only one electricity supplier. On the one hand, progress made in material heat resistance comprising electricity generation plants, led to the introduction of highly efficient combined-cycle gas turbines and a reduction in both the optimum size of such plants and the time required for their construction, assembly and amortization of the investment. This meant that smaller companies were able to compete effectively within the same system.
Moreover, breakthroughs in communications' technology have allowed real-time electricity metering the possibility to dispatch several generating companies over the same network. In this way, different generating and distribution companies can operate simultaneously, which means that users can choose the electricity supply source that most suits their needs.

In light of these technological changes and the need to satisfy the increasing demand for electricity, the Public Electricity Service Act (Ley del Servicio Público de Energía Eléctrica, LSPEE) was amended in 1992. As a result, private parties were able to participate in electric generation by means of self-supply, co-generation and independent power production schemes.

Nowadays, a significant number of generating companies are operating in the National Electric System (Sistema Eléctrico Nacional, SEN) on a regular basis. Accordingly, the restructuring process is already under way, even though greater advances are needed in terms of the faculties and participation of the sector's agents.

1.3 **CURRENT SITUATION OF THE MEXICAN ELECTRICITY SECTOR**

To achieve a complete understanding of the proposed structural reform, the current structure of the Mexican electricity sector must be described.

The provision of large-scale electricity service consists mainly of the following activities: generation, dispatch, transmission, distribution and sale. When the intention is to supply electricity to public service, by law these activities are of the exclusive domain of Comisión Federal de Electricidad (CFE) and Compañía de Luz y Fuerza del Centro (LFC). CFE is responsible for providing the public electricity service nationwide, except in the Federal District area and part of the state of Mexico and Morelos, Hidalgo and Puebla, which are served by LFC. Today these public utilities serve about 25 million consumers.

The sector's current combined electricity generating capacity is 43,500 MW, of which 83.2% corresponds to CFE, 2% to LFC, 4.2% to Petróleos Mexicanos, 5.6% to independent power producers, and 5% to co-generators and self-suppliers.

<table>
<thead>
<tr>
<th></th>
<th>MW</th>
<th>%</th>
</tr>
</thead>
<tbody>
<tr>
<td>CFE</td>
<td>36,238</td>
<td>83.2</td>
</tr>
<tr>
<td>LFC</td>
<td>827</td>
<td>2.0</td>
</tr>
<tr>
<td>Pemex</td>
<td>1,822</td>
<td>4.2</td>
</tr>
<tr>
<td>IPP</td>
<td>2,446</td>
<td>5.6</td>
</tr>
<tr>
<td>Autogeneration</td>
<td>2,201</td>
<td>5.0</td>
</tr>
<tr>
<td>and/or Cogeneration</td>
<td>43,534</td>
<td>100.0</td>
</tr>
</tbody>
</table>

1 Figures rounded up
Nowadays the expansion and modernization of the sector is, for all intents and purposes, based on available public income. By the same token, such incomes are closely tied to the Gross Domestic Product (GDP), due to the availability of public funds on the country’s economic performance.

Historically, the increase in demand for electricity has grown much faster than that of GDP and public income. Consequently, the public sector’s capacity to allocate the resources required by the electricity sector and its capacity to guarantee debt are decreasing. For this reason, the financial scheme developed to underpin the sector’s growth is failing. Without new schemes and mechanisms that include private participation and non Federal Government guarantee investments, there will be insufficient resources to meet the growing demand and the renovation of its infrastructure.

![National Consumption of Electricity, Public Income and GDP 1980-2000](image)

The 1992 amendments to the LSPEE recognized the advantage to use of public, private and social sectors joint participation, to collaborate in the growth of the electricity sector.

However, because of the lack of clear rules for the commercialization of excess capacity by self-suppliers and co-generators, the expected investments by these schemes have not been achieved. Most private investments under the schemes introduced with such amendments took place through the Independent Power Producer (IPP) mode. The IPP’s celebrate long-term contracts to sell all of their production to CFE. However, these schemes and the so-called Build-Lease-Transfer (BLT) schemes, have only provided temporary solutions for financing new infrastructure, because these contracts represent contingent liabilities for the State, and their effect on the government accounting is similar to the issue of public debt.
Even though such changes were made to open up the sector to private and social investment, CFE is still the only agency authorized to purchase electricity. For this reason, the scheme is shifted from a vertically integrated monopoly to a “single buyer” model; i.e., one in which only the State can acquire electricity for public electricity service, without having to enter into partnership with such power supply plants.

In the period between 2001 and 2010, the intention is to increase the sector’s capacity up to 32,000 megawatts, while also modernizing its transmission and distribution systems to achieve international standards of service and efficiency. These goals require investments of approximately 65,000 million dollars. During the same period the withdrawal of only 1,700 megawatts is expected; i.e., increased demand will be merely satisfied without any response to the renovation of the sector’s assets, whose situation is nowhere near international quality standards. Specifically, today 44% of the generating plants have been in operation for over 30 years, and by 2010 this percentage will be near 70%.

Electricity needs in a global economy such as Mexico’s, require constant expansion and modernization to ensure competitiveness of the national industry. Therefore, both the sector’s structure and its legal framework must be urgently reformed so that public, social and private sectors investments can take part in the industry’s development without having to depend on government guarantees.
1.4 VISION OF THE MEXICAN ELECTRICITY SECTOR

The current structure does not respond to high costs signals, reason by which old capacity is not being replaced by new capacity, as in a competitive environment scenario. Therefore, a scheme must be developed to dispatch the cheapest electricity at any moment, by creating incentives so that energy producers reduce their costs and therefore “place” their energy among consumers.

The national electricity sector needs to be strengthen and therefore its state-owned entities shall be modernized accordingly, using similar financial and taxation schemes to those of their competitors, thus achieving the required improvements in supply efficiency and quality to satisfy public service users.

In addition, the change from a “single buyer” scheme to one involving several electricity suppliers and purchasers, will ensure the new sector to offer and supply goods and services, which range from the technical specifications of the input offered to a whole variety of financial services designed to meet the needs of each customer.

The new organizational structure of the sector will facilitate the transformation of its state-owned entities, as they attempt to improve their quality in the offered services. This change, altogether with the involvement of private and social suppliers, will ensure that the national electricity sector can be an industry which: promotes efficiency, provides lower cost public service at and offers other industries, businesses, households and agricultural sector, the options that best reflect their needs for electricity supply.
To achieve the interaction of different companies in the national electricity sector, the industry will have to be reorganized and new regulatory schemes will have to be introduced in order that all those participating have a vested interested in ensuring the sustained growth.

In as much as there are equal conditions for all participants, there will exist the necessary assurance and transparency so that both public and private power producers can raise general efficiency levels in the sector.

Accordingly, to create the electricity industry proposed, the new organization must have the following elements:

1. State-owned entities with self determination management.

2. A guarantee that the electricity public service supply will be acquired at the lowest cost possible for end users.

3. The opening up of generation, transmission, transformation, distribution and supply activities to private and social sectors when involving non-public electricity supply.

4. Transformation of the National Energy Control Center (Centro Nacional de Control de Energía, Cenace) into an independent entity that can guarantee users access to the electricity generated under the same conditions.

5. Creation of a clear, well defined and reliable legal framework which provides legal assurance for all participants and allows the Energy Regulatory Commission (Comisión Reguladora de Energía, CRE), as an independent authority, to regulate the transmission, distribution, supply and commercialization of electricity with regard to the price and quality of services, all this to the benefit of the end users.

6. Planning of the electricity sector as a cornerstone of the policy applied by the Ministry of Energy (Sener), with regard to expanding the sector (generation, transmission and distribution), including the development of complementary sectors (pipelines and fuel supply).

7. Increase of the regulatory faculties of the CRE.
2 Reform bill

2.1 Amendments to the Constitution

The proposed changes to articles 27 and 28 of the Political Constitution of the United Mexican States (Political Constitution) are designed to reserve exclusively for the nation the provision of the electricity public service and allow users who due to their specific economic and consumption requirements, have the option of using alternative supply sources to generate for themselves the energy they require or to acquire it from a third party by means of long term contracts. This bill is intended to establish the basis for a structural change in the national electricity industry, so as to ensure over the long term a sufficient, reliable, quality electricity supply at competitive prices.

In order to, the Federal Executive proposes amendments to the sixth paragraph of article 27 of the Political Constitution, as follows:

<table>
<thead>
<tr>
<th>Current Text</th>
<th>Proposed Reform</th>
</tr>
</thead>
<tbody>
<tr>
<td>Article 27, 6th paragraph: In those cases related to... the respective declarations... or regarding radioactive minerals... The nation is exclusively responsible for generating, transmitting, transforming, distributing and supplying electricity whose purpose is to provide public service. In this area, no concessions will be granted to private parties and the Nation will exploit the natural assets and resources required for such purposes.</td>
<td>Article 27, 6th paragraph: In those cases related to... the respective declarations... or regarding radioactive minerals... The nation is exclusively responsible for the provision of the electricity utility service, in the terms established in its law; in this area, no concessions will be granted to private parties and the Nation will exploit the natural assets and resources required for such purposes. Private parties will be able to generate electricity for their own consumption and for the State, and generate electricity and provide services to users whose consumption exceeds the minimum set forth in this law and comply with the requirements established herein; the State will guarantee the access and non-discriminatory use of the National Transmission Grid and distribution networks.</td>
</tr>
</tbody>
</table>
To ensure congruency, the bill also proposes amending the fourth paragraph of article 28 of the Political Constitution, as follows:

<table>
<thead>
<tr>
<th>Current Text</th>
<th>Proposed Reform</th>
</tr>
</thead>
<tbody>
<tr>
<td>Article 28, 4th paragraph: The functions which the State exercises on an exclusive basis in the following strategic areas shall not constitute monopolies:… Electricity...</td>
<td>Article 28, 4th paragraph: The functions which the State exercises on an exclusive basis in the following strategic areas shall not constitute monopolies: radioactive minerals and nuclear generation; electricity public service and …</td>
</tr>
</tbody>
</table>

2.2 AMENDMENTS TO CURRENT SECONDARY LEGISLATION

To make the electricity sector viable and grant certainty to all participants, it will be crucial to make reforms and legal amendments to strengthen the legal framework.

For this reason, reforms and additions are presented to the current LSPEE; the expedition of a new CFE Bylaw Act and a new Cenace Bylaw Act; as well as reforms and additions to the CRE Act, among others.

2.3 INSTITUTIONAL DEVELOPMENT

One fundamental element in the reform process for the electricity industry is the technical, functional and legal strengthening of the institutions responsible for supervising the efficient performance of new participants. In this regard, the Sener, CFE, LFC and CRE will play an important role in the development and of the modernization process of the sector.

The Sener will conduct the energy policy and the structural change in the electricity sector. It will also be responsible for planning the National Electric System (Sistema Eléctrico Nacional, SEN), with regard to the expansion of the generation and transmission network. The size of these tasks will require strengthening the structure of the SENER and the incorporation of the appropriate personnel for its development.

CFE and LFC will be restructured so that, with self determination management and a taxation treatment similar to that of any productive company, they can meet public service demands with the highest levels of quality and efficiency. In turn, CFE must have unbundled accounting for all its activities. Such separation will allow CRE to perform an efficient regulatory function which will guarantee the transparent management of the state-owned entity and thus avoid cross subsidies and unfair competition.
CRE will be responsible for technical and economic regulation of the electricity sector. Its primary obligation will be to protect consumer interests, both in the short and long term, and will, among other functions, issue the specific terms and conditions applicable to the transmission of electricity through the National Transmission Grid (Red Nacional de Transmisión, RNT) and the distribution grid, as well as the electricity public service supply handled by the CFE and LFC.

2.4 STRUCTURAL CHANGE PROPOSED

The proposed structural reform of the electricity sector is intended to meet the increasing demand for electricity and improve the quality and reliability of the service by means of an industrial reorganization that incorporates technological progress in the areas of generation and telecommunications, in order to allow all sectors to participate in the domestic economy.

Specifically, the bill collects the presidential commitment referred to the non-privatization of the electric industry and stipulates the State to retain ownership of the assets held by CFE and LFC. The operation and control of the RNT (generation dispatch) and distribution grid, as well as their maintenance and expansion, will remain of the exclusive domain of the public sector, together with the nuclear generation.

The proposed structure for reorganizing the electric industry will adhere to the following principles:

1. The strengthening CFE and LFC;

2. Full respect for the labor rights contained in the Federal Labor Law (Ley Federal del Trabajo) and the Union labor contract (Contrato Colectivo de Trabajo) of CFE and LFC workers.

3. Transformation of the Cenace into a decentralized federal agency, which would be responsible for the generation dispatch and exchange between the participants.

4. The instrumentation and development of a clear, transparent legal framework that provides the necessary certainty and assurance to investors, thus allowing CRE, as an independent authority, to regulate the natural monopolies of transmission and distribution activities with regard to tariffs, investments and reliability of the service.

5. Restructuring process of the electricity tariffs and wheeling by CRE.

6. Non-discriminatory access to the RNT and distribution grids, providing fulfillment of all public service supply needs.
7 The establishment of a generation dispatch, where private producers would place their non-committed capacity for use of Self-consumers that acquire their energy directly from the generation dispatch.

8 The execution of long-term contracts which terms and conditions would be entered into by the Self-consumers, potential private producers, CFE and LFC.

9 The introduction of Specialized Traders who will increase supply and demand to optimize the efficiency of electricity exchange.

10 The establishment of regulations that will allow the nation's isolated power systems to operate under special conditions.

11 Investment encouragement of projects that promote the use of alternate energy resources for electricity generation.

12 The proper planning of the electricity industry, handled by Sener in accordance with the program proposed by Cenace, in order to clarify and facilitate the optimum flow of investments to the RNT, while establishing incentives for the effective and competitive development of the sector.

The new structure proposed for the electric industry is as follows:

Structure of the New Electric Industry
The electricity public service supply will be handled exclusively by state-owned entities through their plants and by those plants tendered by the State. Public, private or social generation entities will offer different options to Self-consumers and Specialized Traders to purchase electricity, whether by long term contracts or in the national electricity dispatch. Those utilities with transmission and distribution assets will be responsible for providing the physical system through which electricity transactions shall be done and should be paid accordingly to methodologies established by CRE. The Cenace will be responsible for the operative control of the System and the operation of the electricity dispatch. Finally, those entities with distribution assets will deliver the energy to all users interconnected to the grid. The price charged for the generation dispatch will reflect the marginal costs of public plants in its calculation, for which reason, Self-consumers will have two options: either use the generation dispatch or enter into long-term contracts.

With regard to those consumers who receive public electricity supply, CRE will approve and regulate the tariffs collected.

2.5 PARTICIPANTS OF THE SECTOR

The Cenace, a decentralized federal agency, will be responsible for the operative control of the SEN and the operation of the generation dispatch. This agency will ensure a non-discriminatory access to the RNT, while settling the financial transactions between the different participants.

Its responsibilities include the operation of the SNT; the applying the electricity dispatch rules in which the purchased price will be determined for those entities with distribution assets, Specialized Traders and Self-consumers; the establishment and supervision of the respective metering; the collection of the charges for the energy purchased by Specialized Traders and Self-consumers and the payment to generators and those utilities with transmission assets.

The generating side of the new electric industry will consist of state owned entities and companies from the social and private sectors.

1 Public Generation: Given their obligation to ensure the electric public service supply, the state-owned entities in the sector must at all times, have the sufficient capacity to generate the electricity needed to meet the public service demand. This goal can be achieved by two kinds of plants:

a Plants owned by the productive public utilities: Plants that belong to and are operated by productive public utilities, and will have separate accounting which will be audited by CRE.

b Plants operating under the IPP scheme: Producers of private energy that is intended exclusively for the power supply of public service, under the terms and conditions currently applicable pursuant to the LSPEE, as amended in 1992.
Private Generation: This category of producers can enter into long-term contracts with consumers who so desire, provided that they fulfill with the necessary technical and economic conditions established (Self-consumers).

Private Energy Producers: Any company that wishes to sell electricity to Self-consumers under bilateral contracts or as part of the generation dispatch system.

The electric generation not destined to public service, will be subject to a register system operated by the CRE, provided that it will comply with the legal, technical and financial requirements established in the respective laws and regulations.

Transmission is considered to be the transportation of electricity through a private grid or through the RNT, which involves the development of the work force required for the preservation, maintenance, modernization and expansion of such network.

The SEN consists on installations used for generation, the RNT and distribution grid with voltage higher than 69 kV, and its planning will be handled by Sener. The SEN is considered to be strategic because it is intended to maintain the integrity and stability of the system, providing non-discriminatory access to power generators and buyers, so that energy transactions and dispatch can be performed in it.

It is currently possible for private parties to operate and maintain electric lines for their own use, which would become part of the SEN in case the private line is needed to expand the system or the private party wishes to incorporate such grid into the system. In such event, the interconnection node would be modified and it would be decided which part of the private lines becomes part of the system.

Distribution is understood as the transportation of electricity through general distribution lines.

Those entities which have distribution assets will be responsible for transporting and supplying power to public service users and Self-consumers (with a fee charged for using the infrastructure) that need to use the distribution grid.

Self-consumers will be considered to be those users who, due to their own specific economic and consumption needs, will have the opportunity of using alternative supply sources; i.e., generate their own energy as required or elect to acquire it from a third party based on long-term contracts.

Such users will be those who, by registering within CRE, can demonstrate that their power consumption requirements are over 2,500 MW-hours per year for industrial, commercial or service activities.
<table>
<thead>
<tr>
<th>Term</th>
<th>Definition</th>
</tr>
</thead>
<tbody>
<tr>
<td>Electricity Public Service Users</td>
<td>Users whose electricity consumption is intended to satisfy their basic needs on a continuous, uniform, regular and permanent basis.</td>
</tr>
<tr>
<td>Specialized Traders</td>
<td>Specialized Traders are understood to be electricity buyers engaged in the generation dispatch and/or the agreement of bilateral contracts, either to buy electricity directly from generators or electricity imported for sale to Self-consumers, to other Specialized Traders or for export, as well as the coordination of the transaction operations between generators, Self-consumers and Specialized Traders.</td>
</tr>
<tr>
<td>Importers and Exporters</td>
<td>Consumers and Specialized Traders which import or export electricity.</td>
</tr>
</tbody>
</table>

### 2.6 Restructuring of Tariffs

Tariffs will have to be restructured to ensure the sector’s profitability and provide legal assurance both for public and private participants. A tariff structure which offers viability and financial certainty to industry projects, will attract new investments with more efficient technologies that will significantly help to diminish the sector’s production costs.

This will fulfill one of the primary conditions for the sound operation of this industry. Eliminating the lag in tariffs will help level the playing field for the different participants in the sector, which will gradually lead to the modernization of the nation’s productivity of generation plants and improve the quality of the electricity offered.

### 2.7 Rural Electrification

The reforms and additions made to the LSPEE address two of the primary concerns raised in the discussion on reforming the electricity sector: the electrification of excluded communities and the necessary subsidies to carry out such process. Both issues are directly related to the universal concept of the electricity service supply, which is the main feature of public services.

The proposed legislation establishes that the Federal Government, through the Sener, in coordination with the competent authorities of the states and municipalities, will promote the electrification of rural communities and excluded urban zones, while also formulating and executing support programs for low-income users.

The subsidies for these cases will be transparent and direct, and should be granted in those cases deemed necessary as a social service, to the low income population, through the corresponding different levels of government through the public utilities providing this service.
3 Generation dispatch

The generation dispatch will be supplied in similar fashion as up to the present; however, certain changes will be made to include new private and social generators and the execution of contracts, in particular long-term contracts, between generators and Self-consumers.

In all the different modalities of electricity dispatch to be utilized, a significant number of users will be able to choose the source of the supply of electricity, resulting in a purchase that generates incentives to improve service quality and cost.

The generation dispatch system will consist of two schemes designed to permit the exchange of electricity: prior to the day of dispatch (pre-dispatch) and real time dispatch (imbalance) in which the Cenace will schedule the economical operation of the generators connected to the RNT. Please note that to perform the dispatch, the Cenace will consider each plant independently located at the nodes, bearing in mind the RNT’s grid restrictions.

Specifically, with regard to pre-dispatch, the generated electricity will be programmed for the next day, while in terms of imbalance or real time dispatch, the necessary modifications will be made when the consumption and electricity supply that are programmed for the previous day, differ from those of real time¹.

The Cenace will be responsible for the procurement and use of the ancillary services in the programming and dispatch of electricity, as also in the use of the RNT, where it will transfer the costs of such services to the respective participants.

On the supply side, the generation of electricity will consist of public plants, independent public producers destined for electric public service supply, as well as private electricity plants, co-generators and self-suppliers.

On the demand side there will be two kinds of users:

- Public service users: This kind of users will receive their electricity supply through state-owned entities, in which the tariff will depend on the cost determined in the generation dispatch, based on the terms and conditions established by CRE for such purpose.

- Self-consumers: This type of users may receive the electricity supply from public, social or private producers by bilateral contracts or directly as part of the generation dispatch system, in the last case, by acquiring the electricity at the price established therein.

¹ This situation will arise continuously due to the difficulty of accurately estimating available generation and consumption one day in advance.
3.1 OPERATING PREMISES FOR GENERATION DISPATCH IN CENACE

The new Cenace generation dispatch system will basically operate under the following key regulations:

- By law, it will be established that public utilities must supply the electricity destined for public service at the lowest possible cost in the generation dispatch.

- Public generators destined for public service supply should produce sufficient electricity to meet the demand of public service and will also execute long-term bilateral contacts, provided that such activities do not result in a deterioration in the aforementioned electricity supply.

- Private generators will sell their electricity by a long-term contract to Self-consumers, CFE or LFC and will place their uncommitted energy in the generation dispatch system, where they will be paid the price equivalent to the cost determined in the generation dispatch\(^2\).

3.2 OPERATION OF THE GENERATION DISPATCH

The generation dispatch will always be based on the introduction of electricity at the lowest available cost to SEN, and to protect the interests of public service users.

To accomplish its functions, the Cenace will receive information from public, private and social generators\(^3\) and it will also determine the load level demanded by public service users, Specialized Traders and Self-consumers. On such basis, it will issue operating instructions to the generators, determine the cost of electricity and accordingly, the price to be paid to the generators.

The dispatch system by itself, consists of putting in order the generators, based on order of merit\(^4\), to ensure that the price established is the lowest, so that the cheapest energy possible is always dispatched. For this purpose the costs of public and private plants will be used, as well as the price contained in IPP contracts. In the case of private generators, they will submit a cost of zero to Cenace, given that they are price takers.

An inclusive electricity sector such as contemplated in this bill, must function as follows:

i. The Cenace will first classify the electricity from the self-suppliers, point-to-point bilateral contracts and fixed generation capacity.

Given that it serves its own needs, the self-supply scheme is not included in the generation dispatch criteria.

---

\(^2\) They will be price takers.
\(^3\) Private and social producers must specify their committed and non committed energy.
\(^4\) They are classified from lowest to highest cost.
With regard to bilateral contracts, the electricity will be exchanged at prices independent from the generation dispatch established exclusively between the seller and buyer, for which reason their prices will not be included in the cost calculation of the generation dispatch.

Fixed generation capacity or capacity that cannot be dispatched, refers to that of plants whose technical characteristics require that electricity must be dispatched when available, such as those plants based on renewable energy sources and the Laguna Verde plant, reason why they are not included within the dispatch criteria.

ii. Cenace will introduce the public service demand and the non-committed demand of the Self-consumers into the program.

iii. Cenace will receive the information of the non-committed capacity of private generators and through CFE of the excess capacity of self-suppliers and co-generators, information which consists solely on quantity and not price.

iv. Based on the electricity mentioned in clause (i), the Cenace will classify the remaining plants from lowest to highest cost in order to cover the demand. The cost of the electricity dispatched from the last plant will determine the price of the energy in the generation dispatch.

v. In the event of shortages, the Cenace will be empowered to order all the electricity plants to make their uncommitted capacity available to the system, in exchange they will receive a retribution for it.

These five points offer a schematic illustration of how the generation dispatch will operate. By following the indicated sequence, the less costly electricity will be introduced into the SEN at all times.

The National Electric Generation Dispatch (Examples)

The operation of the generation dispatch seeks to provide the necessary incentives for both users and generators to react to market conditions and therefore improve the quality and cost of the electricity supply.

Nowadays, the generation dispatch includes only public electricity plants, IPP’s and excess capacity by self-suppliers and co-generators.

The Cenace classifies the plants from lowest to highest costs and when the demanded load level is reached, it gives operating orders to the different plants. When prices are high, most users have no leverage to pressure the supplier to improve the service rendered. Under the current law, only those large scale consumers consider the self-supply scheme and build their own plant.

5 By means of aw, Self-suppliers and co-generators must put their excess capacity available to CFE, for which reason, they will participate in the dispatch through this entity.

6 The minimum size required for a combined-cycle plant to compete against an electric power plant is considered to be 250 MW (in Mexico this figure could be less), which restricts this option to a very limited number of users.
A monopoly does not have the appropriate incentives to modernize its power plants, which, when added to budgetary restrictions, has resulted in the chronic aging of CFE and LFC assets. In recent years, investments have focused on meeting the increased demand and not the renovation of infrastructure, reason why the plants that set prices, generally the oldest ones, continue to operate and therefore costs do not decrease.

With the new structure for the electric industry, certain users will be able to purchase their energy through bilateral contracts or directly through the generation dispatch system. In its first stage, this will mean that electricity intended for these users (Self-consumers) will gradually lighten the public service load, which would result in decreasing the use of the oldest plants and consequently the reduction in generation costs.

In this way, CFE will be able to specialize in the public service supply and concentrate all its resources on modernizing its infrastructure.
Those producers willing to operate for a price equal to the marginal cost of the electricity dispatched from the last public plant, will be efficient generators with marginal costs much lower than those plants which set prices, for that reason they will receive a dispatch payment higher than their marginal operating costs, which will allow them to recover their investment costs. This situation creates an effective incentive mechanism that will promote investment in new technologies designed to increase efficiency throughout all of the generation area. For this reason, the generation dispatch rules contribute to the sustainability of this sector and a gradual reduction in costs and tariffs.

### 3.3 Ancillary Services and Reserve Margin

Notwithstanding the above, the reserve margin must also be considered when planning a power system; i.e., generating capacity that will generally be idle and that sometimes will be required to ensure the reliability of the system. This reserve margin consists of capacity that goes into operation when certain plants have programmed outages, because of maintenance and/or unforeseen events such as failures, degradation and other causes beyond their control.

In order to meet demand under appropriate conditions of reliability, the system’s capacity must exceed the estimated peak demand for each year. The difference between the system’s capacity and the annual peak demand is the reserve margin. The reserve margin required in the system depends on the different kinds of plants contained therein, and the configuration of the network.
In this regard, it is essential to establish procedural mechanisms to ensure that the SEN has sufficient marginal plants available at times of peak demand, in the event of plants leaving the system for maintenance purposes or forced outages. A dispatch price determined by marginal costs is not in itself sufficient to sustain investments in plants which would only operate to cover maintenance needs or due to unforeseen events.

Accordingly, the bill considers providing compensation for ancillary services which are basically defined as reserve and regulatory services, in which the former apply to plants that can enter service to cover an unforeseen event, and the latter to plants which will be available to generate or stop generating the amounts of electricity needed to regulate SEN frequency, among others.

Within this scheme of thinking, the price set within the generation dispatch will contain an ancillary service component when demand approaches the available generation capacity. This will provide the aforementioned compensation to those electricity plants that are available for dispatch as and when requested.

### 3.4 NODAL ELECTRICITY PRICES AND ENERGY CONTRACTS

Price setting, as described in point 3.2, assumes that there are no restrictions on the RNT and that low-cost producers can supply electricity to nodes where there are high-cost generators. However, this is impossible when network constraints are imposed, and the cost of energy changes at each node, situation that must be reflected in the respective selling price.

The price difference between different nodes represents a perfect indicator, whether to assign resources for generation in high-price nodes or increase transmission capacity between low-price and high-price nodes. In such cases, the Sener and Cenace will
have to make recommendations on the most profitable investments and ensure the electricity supply at the lowest possible cost.

Bilateral contracts may vary in how they respond to the needs of each electricity vendor and/or buyer. However, contracts must not affect the operation of the SEN or the generation dispatch system, for which reason they will have the necessary specific features for the Cenace to efficiently dispatch electricity.

The generalized use of Financial Transmission Contracts (Contratos Financieros de Transmisión, CFT) may also be encouraged, in order to enable generation dispatch participants to protect themselves against significant price fluctuations at different nodes and also serve to complement as an electricity sale agreement between buyers and vendors located at different nodes.

Nowadays there are long-term contracts with IPP’s. As part of the Federal Government’s policy, any Committed Capacity and Associated Energy Purchase Contract signed prior to the reorganization of the Mexican utility industry will be honored as established in such contract, even if stranded costs were incurred for such purpose.
4 Alternative energy resources

4.1 Renewable Energy Resources

Mexico has major potential for electricity generation from renewable resources, due to its size, geographical location and mountainous terrain. According to studies prepared by the National Energy Savings Commission (Comisión Nacional para el Ahorro de Energía, Conae), the Electricity Research Institute (Instituto de Investigaciones Eléctricas, IIE) and CFE, Mexico has a 5,000 MW potential of eolic energy and 3,250 MW of mini-hydro electricity generating stations. The appropriate use of these renewable resources provides excellent means of reducing the environmental impact normally associated with electricity generation.

The project is intended to embrace and promote global best practices in the use of renewable energy resources. The increasing demand for electricity and the limited availability of generation resources, characterized by an over-dependence on fossil fuels, highlights the opportunity of developing renewable energy resources. The proper use of such resources means overcoming certain problems, which differ from those related to conventional energy resources:

- Variable availability
- High initial investment costs
- Far located extraction zones from consumption centers

The regulatory framework established for these generating plants will be essential to ensure their proper expansion, due to their considerable investment needs, which requires long amortization periods. In addition, these resources usually generate economies in inverse relation since maintenance costs decrease as usage increases. In this regard, to enhance the use of these resources and exploit their advantages, investors must be given flexible financing incentives and schemes that ensure the recovery of their investments, while consumers must be willing to share their part of the effort, when requesting electric power supply from renewable resources.

The proposed structure is designed to promote the use of electricity from renewable resources in a cost-efficient and fair manner; in other words, under a scheme that affects the operation of the generation dispatch system as little as possible. On such basis, the use of these technologies will be encouraged and incentives will be granted for such purpose.

In this way, companies will have incentives to establish a combination of contracts with producers based on renewable energy resources. Such contracts will be expected

---

7 While the investment costs of plants operating based renewable resources are high, in practically every case their operating costs are extremely low, which offers an interesting long-term option.
to be fulfilled during the planning stage of each project, so as to ensure the necessary guarantees to finance the company’s investment. To promote the increased use of these contracts, buyers and vendors will be given different economic incentives so in order to partially recover the difference between the power dispatch price and the one stipulated in their contracts. Such contracts will be executed exclusively with Self-consumers, as public users can only receive the cheapest energy available.

Energy incentives and promotions also include federal and state agencies wishing to consume this type of power.

Contract Designed to Promote Electricity Generation

The use of alternate energy resources represents a powerful tool for regional development, as in the case of eolic energy in the states of Oaxaca, Hidalgo and Zacatecas, mini-hydroelectric plants in Chiapas, Veracruz, Puebla and Tabasco, and biomass in Michoacán and Guerrero.

4.2 CO-GENERATION

Co-generation also offers one of the best options for efficiently generating electricity and saving energy. Today, current laws authorize the private sector to participate in nonpublic electricity activities and allow private parties to generate under the co-generation mode.

The comparative advantages of co-generation related to conventional generation is its high-energy conversion efficiency, because from the same source of energy electricity and useful heat are sequentially produced for the required processes. Theoretically, Mexico’s co-generation potential ranges between 8,360 MW and 15,670 MW, depending on how the useful energy is obtained for the process of each industry or
commerce, and has a profitable potential around 3,000 MW and 5,500 MW, which is equal to 7% and 30% of current installed capacity.

### National Co-generation Potential

<table>
<thead>
<tr>
<th>Sector</th>
<th>With additional fuel MW</th>
<th>Without additional fuel MW</th>
<th>Participation (%)</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Theoretical</td>
<td>Technical/Economical</td>
<td>Theoretical</td>
</tr>
<tr>
<td>Industrial</td>
<td>5,200</td>
<td>1,820</td>
<td>9,750</td>
</tr>
<tr>
<td>Pemex Petrochemical</td>
<td>1,610</td>
<td>565</td>
<td>3,000</td>
</tr>
<tr>
<td>Pemex Refining</td>
<td>780</td>
<td>275</td>
<td>1,470</td>
</tr>
<tr>
<td>Commercial</td>
<td>770</td>
<td>271</td>
<td>1,450</td>
</tr>
<tr>
<td>Total</td>
<td>8,360</td>
<td>2,931</td>
<td>15,670</td>
</tr>
</tbody>
</table>

Note: For additional information address the National Cogeneration Potential document, Conae, Mexico, 1995.

In general, a co-generation project maximizes the heat used in a productive process and generates approximately twice the electricity consumption needs of the company or industrial complex. In this regard, to make co-generation projects feasible they must have clear mechanisms for selling their excess capacity at competitive prices, which will allow them to recover their investment.

In practice, under the current law the compensation received by co-generators involved in the generation dispatch system is lower than the variable costs (of these fuels used by CFE and LFC plants) of the marginal unit. This explains why the sale of excess production by co-generators has been null, situation that has contributed to the delay of the construction of these type of projects.

In the power dispatch model described in this document, co-generation plants can freely sell their uncommitted capacity, which would considerably increase the feasibility of such projects.

Furthermore, similar support will be considered to those projects implemented for renewable energies, due to the primary energy resources reduced consumption, which encourages greater exploitation of the nation’s co-generation potential.
5 Regulatory framework

The intention of the economic technical regulation as part of the new organization proposed by the Federal Executive is to promote efficiency that will give users the best conditions of quality, reliability and price in terms of the electricity public service supply.

The efficient operation of the electricity sector will largely depend on a technical regulation based on principles of economic efficiency, which must be transparent and congruent, and allow the sector to properly fulfill its function within the national economy. Regulation of the sector will not only lead to greater efficiencies in the public entities responsible of providing the electricity public service supply, but will also guarantee transparency and impartiality to all participants in the public, social and private sectors engaged in the national electricity sector.

The following services will be subjected to tariff regulation or retributions to avoid any market power, as the case may be:

I. Power transportation services through the RNT and distribution networks;

II. Electricity supply by public entities, for electricity public service, and

III. Those services rendered by the Cenace.

To guarantee efficient supply and quality transportation services through the RNT and distribution networks, as well as the supply and selling of electricity, in its authority as a regulatory agency, CRE will be responsible for regulating the following activities:

5.1 GENERATION

To ensure that the entities responsible for providing the electricity supply acquire and dispatch the cheapest energy available to end users, CRE will establish accounting and regulatory mechanisms to ascertain criteria for economic efficiency and rationality in the operation, as well as in the investments and expenses incurred into to collect the basic information required to determine tariffs.

Furthermore, to ensure transparency in the allocation of projects and the necessary sustainability for expanding generation capacity, CRE will approve the terms and conditions of the bidding tenders and the basis issued by the entities, in order to develop projects that meet growth needs or substitute generating capacity in such a way as to guarantee the sustainable growth of the industry.
5.2 Transmission and Distribution

To ensure free access and use of the RNT and the distribution networks, as well as non-discriminatory treatment for all participants, CRE will issue the terms and conditions for rendering such services and for the methodologies needed for calculation of tariffs on the electricity transmission and wheeling services provided through these networks.

Also, CRE will approve the terms and conditions of the agreements and contracts executed by the entities.

5.3 Electricity Public Service Supply and Selling

The CRE, altogether with the Ministry of Finance and Public Credit, will determine the methodologies for calculating public service electricity tariffs.

The methodologies will be determined based on efficient economic costs, in such a way that rates will cover financial needs and those required to extend the utility infrastructure and the rational consumption of energy. To determine efficient economic costs, when appropriate, international benchmarks will be applied.

Based on the methodologies referred to in this section, CRE will adjust and restructure the respective tariffs.

5.4 Regulation and Oversight of Generation Dispatch Operation and Rules

To establish an efficient electric system in which participants can sell or buy electricity based on economic criteria and guarantee free access to the RNT and distribution networks, CRE will issue rules governing the operative control and generation dispatch system, and will determine the terms and conditions and the respective applicable considerations to the services rendered by the Cenace.

The generation dispatch rules will describe the general conceptualization of the dispatch system; the way in which public and private producers, Self-consumers and Specialized Traders will participate; the calculation of pre-dispatch programming and prices; the calculation of dispatch prices (balance); any information related to the characteristics, contracting and remuneration of the ancillary services; the access to the RNT and the distribution networks; the programming of the hydroelectric plants; and the energy metering for accounting purposes.

The CRE will establish the necessary procedures to prevent possible unfair practices by industrial participants in the generation dispatch system.
5.5 Self-consumers and Specialized Traders

Self-consumers will be able to choose their own electricity supplier by entering into bilateral contracts with private entities or generators, or may continue to receive the public electricity service supply. For this purpose, the Self-consumer must comply with the requirements established in the appropriate legal and regulatory framework, and obtain the respective registration from the CRE to be considered as a Self-consumer. This data registration will be of help in the planning of the SEN, which will be responsibility of Sener.

The CRE will regulate the activities of those agencies, whose established companies act as Specialized Traders engaged in offering electric power services to Self-consumers, on the understanding that such activities will not lead to a deterioration in the electricity public service supply. This will ensure that the cheapest energy will always be sold to the electricity public service supply.

5.6 Penalties

The framework proposed establishes the necessary regulations to guarantee the authority the necessary faculties to verify the compliance of the law, law regulations, as well as other applicable provisions. For this purpose, the authority will enforce the penalties contained in the draft reforms of the LSPEE, in accordance with the Federal Management Procedures Act (Ley Federal de Procedimiento Administrativo) within the scope of its respective competence and with the seriousness of a breach committed by any participant in the electric industry.
One of the main goals of modernizing the electricity sector is to create the correct environment through the appropriate laws, regulations and standards so as to assure the investments made in the sector by public, social and private companies. In this regard, the schedule in which the reform is conducted are crucial to ensuring its success.

To level the competitive playing field for the different public, private and social companies participating in the electricity activities, similar legal conditions must be granted for all the companies, especially does related to taxation treatment and corporate control.

For this reason, the reform process will focus mainly on the restructuring and modernization of CFE and LFC, strengthening the CRE and separating the Cenace from CFE.

### 6.1 Modernization of the CFE and LFC

A key element of the proposed structural change will be the granting of self determination management to those public entities engaged in the sector, so that they can operate in the competitive environment established. For this purpose, they must be managed in accordance with corporate criteria and offer their services under the best quality and price conditions.

CFE and LFC will restructure their activities and institute accounting and objective segregation for each area of performance, in order to clarify the system’s operation to allow implementation of a suitable tariff policy and thus avoid cross subsidies and potential inefficiencies.

Accordingly, CFE and LFC will undergo a corporate transformation to operate as separate units engaged in generation, administration of the IPP’s, and transmission and distribution of electricity. The Cenace will operate the electric system and carry out the generation dispatch operation, which will serve as a reference mark for potential private investors in the electric industry.

The purpose of the above mentioned, is to generate the technical and financial foundations to operate a sector with different electric power buyers and purchaser of electric power. This will allow existing public and private companies to make a smooth transition to the new industrial organization proposed.
6.2 The Ministry of Energy

The Federal Government will be represented by the Ministry of Energy as the guiding force behind the electric power sector. Accordingly, it will be responsible for the sector planning by approving the institutional programs of the respective entities and of the Cenace.

In this way, based on the recommendations of Cenace, Sener will manage the expansion of the SEN and will also adopt the necessary measures to ensure the public electricity service supply.

6.3 Strengthening of the CRE

To guarantee the efficient and transparent operation of the new industrial organization proposed, CRE must be granted new functions and faculties described in the draft reforms and additions to the Energy Regulatory Commission Act (Ley de la Comisión Reguladora de Energía).

The CRE will establish, in a gradual and orderly fashion, the new terms and conditions for each of the activities including the public power supply, as described in the draft reforms and additions to the Energy Regulatory Commission Act.

6.4 The National Energy Control Center

During the transition process the Cenace will continue within the CFE structure and will still oversee the system's operation and generation dispatch. The bilateral contracts between Self-consumers and private generators will be incorporated into the generation dispatch system. On June 1\textsuperscript{st}, 2006, or when the demand for bilateral contracts executed by private producers equals 12.5\% of the national demand, the Cenace will become a decentralized agency independent from the rest of the participants.

The Cenace will establish transition mechanisms to ensure the security and reliability of the operation of the electricity generation system at all times. All the new dispatch, information and accounting systems will be gradually checked and verified before their final implementation.
Glossary

This document includes concepts whose meaning is described as follows:

**Alternative Energy Sources.** Those inputs other than hydrocarbons which are used to generate electricity.

**Ancillary Services.** The inputs required for electricity to be delivered to users at stable voltage and frequency, which include frequency control or regulation, operating reserve, voltage control and generators' black start-up, among others.

**Bilateral Contracts.** Agreement by which producers and buyers (Distributors, Specialized Traders and Self-consumers) can freely establish the price of electricity for a given period. This mechanism can help alleviate volatility in generation dispatch prices at different times of the year and hours of the day.

**Build-Lease-Transfer (BLT).** Capital leasing scheme in which a private investor constructs a generating plant rented by CFE. The plant is operated by CFE. At the end of the lease period, ownership is transferred to the state-owned entity.

**Co-generation.** Electricity produced simultaneously with steam or some other kind of secondary thermal energy for use in an industrial process, or electricity generated from residual process heat.

**Combined Cycle Gas generating plants.** Generating plants producing electricity which include one or more gas turbine generators, whose escape gases feed a boiler that produces vapor which in turn drives a turbo-generator.

**Comisión Federal de Electricidad (CFE).** Decentralized federal government agency responsible for providing the electricity public service supply

**Distribution.** Electricity Distribution for public users and Self-consumers.

**Electricity Tariff.** The sum of the generation dispatch price and the regulated transmission and distribution prices, less any subsidy applied, as the case may be.

**Energy Regulatory Commission (CRE).** Decentralized agency of the Sener, responsible for regulation and the issue of permits for electric power, natural gas and liquid petroleum gas (LPG) transportation.

**Financial Transmission Contracts.** Agreement between registered participants and the Cenace requesting the transmission service, allowing a complementary electricity purchase-sale between buyers and vendors located at different nodes.
Electricity Dispatch. Activities related to the operation of the National Electric System and National Generation Dispatch

Horizontal Integration. Incorporation of different permit holders engaged in the same production activity.

Importers and Exporters. Government-owned, private and social companies which perform electricity import or export activities.

Independent Power Producer. A company holding an electricity generation permit whose output will be sold to CFE, and the latter must purchase it under the terms and conditions agreed.

Interconnection Contracts. Agreement between producers and the Cenace whereby the energy sale transactions can be completed.

Luz y Fuerza del Centro (LFC). Decentralized Federal Government Agency responsible for the generation, transmission and distribution of electricity in Mexico City and part of the States of Mexico, Puebla, Hidalgo and Morelos.

Marketing. Acquisition of electricity for sale to Self-consumers or brokerage activities between energy generators and buyers.

Ministry of Energy (Sener). Federal Government agency responsible for handling the national energy policy.

National Energy Control Center (Cenace). Decentralized federal government agency responsible for controlling the National Electric System and operating the National Generation Dispatch System.

National Transmission System (RNT). Collection of assets, such as electric lines, sub-stations and other equipment, used to conduct the electricity operated in the generation dispatch system.

Natural Monopoly. Economic activity reserved exclusively for the State.

Nodal Prices. Different prices of electricity resulting from transmission constraints.

Pre-dispatch. Process whereby the Cenace balances the generators’ supply offer with the energy needs of distributors and Self-consumers one day ahead, based on economic criteria.

Public Users. Users whose electricity consumption is intended to satisfy basic needs on a continuous, uniform, regular and permanent basis.
Regulated Activity. Those activities which, due to their nature, must be subjected to special regulations imposed by the State.

Reserve Margin. This is the difference between gross capacity and coincident peak demand of an electric system, expressed as a percentage of coincident peak demand.

Rural Electrification Agencies. Decentralized public agencies responsible for electrifying and extending coverage to rural and marginal zones.

Self-supply. Production of electricity intended to satisfy the needs of individuals or corporations that generate it.

Self-consumer. Those users which comply with the economic and consumption restrictions and have a register before CRE.

Stranded Cost. Costs derived from investments made prior to the electricity sector reform, which cannot be recovered under the new generation dispatch rules.

Subsidies. Economic assistance provided by the State to support underprivileged sectors of the population.

Transmission. Conduction of electricity through high voltage networks.

Vertical Integration. Aggregation in one permit holder of different processes regarding the electricity sector.