

<sup>13</sup> Masami Kojima and Todd Johnson, *Potential for Biofuels for Transport in Developing Countries* (Washington, D.C.: Energy Sector Management Assistance Programme/World Bank, 2005).

<sup>14</sup> Sener/GTZ/BID, *Potenciales y viabilidad del uso de bioetanol y biodiesel para el transporte en México*, Proyectos ME-T1007-ATN/DO-9375-ME and PN04.2148.7-001.00, Mexico City, 2006, p. 8.

<sup>15</sup> *Ibid.*, pp. 10-11.

<sup>16</sup> See “Ley de Promoción y Desarrollo de los Bioenergéticos” (LPDB), 2008, [www.diputados.gob.mx/LeyesBiblio/pdf/LPDB.pdf](http://www.diputados.gob.mx/LeyesBiblio/pdf/LPDB.pdf).

<sup>17</sup> INE, *Análisis integrado de las tecnologías, el ciclo de vida y la sustentabilidad de las opciones y escenarios para el aprovechamiento de la bioenergía en México* (Mexico City: UNAM, 2008), p. 16.

<sup>18</sup> Sagarpa, *Bases técnicas para el fomento a la producción de biocombustibles en el país a partir de caña de azúcar* (Mexico City: Sagarpa, 2010), p. 66.

<sup>19</sup> *Ibid.*, p. 116.

<sup>20</sup> ANIAME, *La palma de aceite en el sureste mexicano*, Reportaje/Métodos Globales Respuestas Locales/Asociación Nacional de Industriales de Aceites y Mantecas Comestibles, A. C., Mexico City, 2006, [http://portal.aniame.com/uploads/palmadeaceiteenelsure\\_61a49\\_001.pdf](http://portal.aniame.com/uploads/palmadeaceiteenelsure_61a49_001.pdf), p. 2.

<sup>21</sup> Sener, *Prospectiva de petrolíferos 2010-2025* (Mexico City: Gobierno Federal, 2010).

<sup>22</sup> EurActiv, “Biodiesels Pollute More than Crude Oil, Leaked Data Show,” EurActiv, January 27, 2012.

## The Mexican Electricity Sector

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Article 27 of the Mexican Constitution states “it is a function exclusively of the Nation to generate, manage, transform, distribute, and supply electric power whose aim is to be a public service.” However, a lower law, like the Public Service Energy Law, contradicts the spirit of the Constitution, stating in its Article 3 that, “The following are not considered public services . . . II. The generation of electrical energy by independent producers for its sale to the Federal Electricity Commission.” This addition to the law has allowed recent administrations to substantially increase the activities of independent energy producers. During the administration of Felipe Calderón Hinojosa, that participation increased from 59.43 terawatt hours (TWh) in 2006 to 84.26 TWh in 2011; this last figure represents 33.1 percent of the country’s total electricity generation, excluding co-generators and self-generators.

It is noteworthy that the increase in private participation not only represents a deterioration of national sovereignty, but also creates operational problems, like the loss of flexibility in economical power generation dispatch, plus economic problems, since it pushes up costs for financing investment in electricity infrastructure.

The purchase of energy from foreign companies under the heading of “independent energy and self-supply producers” is a covert privatization of the electricity system. Public pol-

icy designers forgot to ask the operator of a national central dispatch control center what would happen to the electricity produced by private plants that the national grid did not re-



Alfredo Guerrero/Cuatoscuro.com

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ceive at times of low consumption. The law includes a clause according to which “the concessionaire will assure the sale of all electricity produced during the period the concession lasts to the CFE, whether that energy is required or not.” This means that generation in Federal Electricity Commission (CFE) plants will drop to favor private investors because some economists decided that “the investment risk would be assumed by the state.” What is more, a technical audit of the hydroelectric plants in Mexico’s Southeast would show the relationship this has to cyclical floods in Tabasco.

#### ELECTRICITY SERVICE COVERAGE

Article 5 of the law that created the CFE, passed August 14, 1937, states that the commission’s objective shall be to organize and direct the national system of generation, transmission, and distribution of electricity based on technical and economic principles, without seeking a profit, and with the aim of attaining the greatest yield possible to the benefit of the general interest at a minimum cost.

The Electricity Public Service Law, published in the *Diario oficial de la federación* (Official Gazette) on December 22, 1975, repeals the 1937 law, but does not directly contradict the CFE’s mission as originally stated. For that reason, the commission has attempted to plan for increasing the percentage of the population with access to electricity, despite the technical and financial effort involved in supplying the rural sector, which is very disperse nationwide. So, between 2002 and 2006, the percentage of the population with electricity went from 95 percent to 97 percent, an average annual growth rate of 0.52 percent. By contrast, the average annual growth from 2007 to 2011 was only 0.07 percent; this indicates a marked disinterest on the part of the federal government in improving the living conditions of the lowest income sectors of the population.

#### ABOUT RENEWABLE ENERGY

While the government’s 2007-2012 Sectoral Energy Program did not commit to achieving a goal commensurate with its total capacity, it did set a 2-percent-of-total-capacity goal for public service, wind-generated electricity. However, the current state of affairs is 1 percent, with the added disadvantage that 86 percent of the existing wind-generating capacity is in

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private hands. This means that the government has retreated from its responsibility of fostering renewable fuels.

But, also, in frank contradiction to the benefits of using renewables, it has granted licenses to generate electricity for export using renewable energy; today, 300 MW are already in operation. This leaves the pollution in our country and does not contribute to replacing the fossil fuels currently being used in the national electricity sector.

#### WORKERS IN THE ELECTRICITY SECTOR

The forcible take-over of the installations of Luz y Fuerza del Centro (Light and Electricity of Central Mexico, or LFC) by the army in order to dissolve the company and fire the workers is a violation of the Constitution and of several pieces of secondary legislation, with unprecedented disregard for the labor rights of the company’s 44 000 workers and 22 000 retirees.

Calderón’s arguments about the LFC’s costing the country enormous amounts because of high operating costs are full of distortions and are part of an entire scenario prepared beforehand to justify the liquidation of the union, a manifest opponent to his privatizing policies. This can be understood from a broader perspective if we look at the mechanisms for integrating the electricity industry, nationalized in 1960: the Institutional Revolutionary Party (PRI) administrations staged a strategy to eliminate any kind of progressive unionism in this strategic sector.

The majority of what were called LFC’s operating deficits can be explained by the fact that it was prevented from increasing the size of its electricity-generating installations. This forced it to purchase all the energy it distributed from the CFE at prices that not only did not allow it to make a profit, but actually caused it to incur losses. That is, the prices charged by the CFE to the LFC were higher than what the LFC could charge its customers, particularly for medium- and high-tension services.

It was absolutely necessary to fight the corruption of some of the high officials of the LFC. However, the government

never did that; quite to the contrary, it allowed those practices to grow. Later, it used this as an argument to justify to the public the elimination of the Mexican Electrical Workers Union (SME). But the result was that it also eliminated highly skilled labor. All of the work, from planning the electric public service, designing the works and installations, and the supply of different inputs (transmission towers, substation structures, grid management measuring and control panels, iron fittings for distribution, prefabricated pieces of buildings, and many others) to works for expanding the company, was done by LFC workers, with entirely Mexican engineering and highly skilled technicians trained for these jobs.

The LFC installed a fiber optic network—all the work was done by members of the SME—that was needed for internal communications in the company and for remote control of different installations and substations. However, all this technology also had the capability of offering other audio and video services; this sparked the ambitions of the media monopolies, which saw the SME as a formidable opponent to their intentions to exploit this public good for their own private benefit. Through the company Totalplay, the TV Azteca network is enjoying juicy licenses for its private benefit.

The cost of the dissolution of the LFC in patrimony and money for the nation has been very high if we take into consideration all of its effects: generating plants paralyzed, industrial facilities neglected or completely destroyed, buildings torn down, the loss of technical and historical archives, and the waste of workers' experience and operational know-how as well as of engineering and national technology, just to name a few.

The SME's demands include the possibility of an eventual re-creation of a public company to replace the old LFC or that the workers be re-hired by the CFE as their substitute employer, where they would seek to recover the most possible of the LFC's nationalist traditions. However, the government fears that the Single Electricity Workers Union of the Mexican Republic (SUTERM), which organizes CFE workers, would be contaminated by SME workers' democratic, critical, combative

habits. That fear—if not panic—is shared by the SUTERM leadership, who is pressuring against this completely legal solution to the conflict, as proposed by the SME.

Today the CFE is operating in LFC facilities using another unconstitutional, illegal concept, that of the "free loan," which is not applicable for a good which has been deemed part of the nation's strategic patrimony. It is doing this after coming to an agreement with the Management and Alienation of Goods Service (SAE), part of the Ministry of Finance and Public Credit (SHCP) and the depository of all the LFC's goods and obligations. The CFE uses this as an argument before the Labor Relations Boards to reject the proposal of being a substitute employer for the workers in resistance.

#### THE NECAXA HYDROELECTRIC PLANT

The dissolution of the LFC brought with it the abandonment of the Necaxa hydroelectric plant in the state of Puebla. This meant that one of the works that was part of Mexico's historic industrial heritage was interrupted. Its importance is not its generation capacity, which only comes to 112 MW, but its historic significance: the challenge it represented in terms of both engineering and construction.

In its time, 1906, the work required design solutions that stretched its resources to the limit. It also demanded high levels of technical perfection by the more than 10 000 workers who built it; almost all the workers came from neighboring towns. Also, the cost was considerable. In addition to the US\$17 million spent on the hydroelectric plant itself, we must add the several towns that disappeared under water when the dam was put into operation.

The architectural value, the singularity of the engineering, and the human cost should be, in and of themselves, sufficient for preserving the Necaxa plant as part of the nation's industrial heritage. But, if more arguments are needed, we should remember the social value the plant has for the community of Nuevo Necaxa, as well as surrounding towns. All of them depend economically on the work done in operating the plant.

The dams that received water from the Necaxa Dam have also been affected, and with them, aquaculture activities in the region have declined; since operations have not continued, environmental damage in the form of dropping water levels and contamination of the dams occurs. Tourism has also been hard hit by the ecological deterioration of the area. In short,

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the situation unleashed by the dissolution of the LFC in the Necaxa region not only contravenes the promises made by Felipe Calderón during his presidential campaign, among them job creation and the promotion of regional economic development, but have also complicated living conditions for Necaxa residents.

Among the threats to Necaxa are the following:

- 1) *Risks due to inappropriate operation of the electricity system.* Irreparable damage to the hydraulic infrastructure; economic losses due to lack of regulated, on-going generation of electricity; in addition to the severe or irreparable damage to electrical and mechanical equipment because of lack of maintenance.
- 2) *Damage to the environment, society, and the economy.* The change in the operation of the hydroelectric plant and the lack of regulation during the rainy season could result in an unmanageable flow of water, with the con-

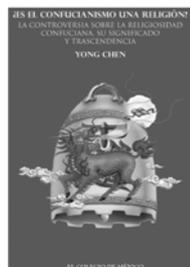
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- sequent damage both to neighboring communities and to environmental resources in the case of flooding.
- 3) *LFC land being taken over or usurped by outsiders.*
- 4) *Indirect effects on the region's residents.*

The operation of the Necaxa hydro-electric system is not only necessary for the good of the communities surrounding it, but is also affordable thanks to the great experience of its workers. Rehabilitating the generators would be a much more prudent solution than abandoning them. **M**

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