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MARKET INSTITUTIONS, STATE OWNERSHIP AND INTERVENTION IN THE POWER SECTOR REFORM IN MEXICO



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COLABORADORES JOSÉ MARÍA VALENZUELA, *Graduate Student. Committee of International Relations. (The University of Chicago).*
COORDINADORA DRA. ISABELLE ROUSSEAU

Market institutions, state ownership and intervention in the power sector reform in Mexico

José María Valenzuela*

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* Graduate Student, Committee of International Relations, The University of Chicago. He belongs to the World Energy Council's Future Energy Leaders (FELs) as an exceptional young leader who are committed to shaping our energy future.

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Abstract

Mexico's market reform in the power sector successfully provided high certainty for private investment without compromising other policy objectives traditionally assigned to the power sector. The essay argues that contrary to the common narrative of structural economic reform, the government adopted different regulatory approaches in a segmented sector, maintaining ownership and intervention tools as a mean to nurture market competition. This was facilitated by exploiting multivocality in the notion of market reform. As a result, the notion of market institutions has evolved, incorporating state-owned enterprises and government active intervention as elements for successful market operation. In the future, cleavages over energy policy will be framed by this new institutional setting, in which the government maintain the capacity to steer the development of the sector.

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Introduction

Mexico has undergone major institutional transformation in its power sector. Between 2013 and 2015, the legal framework and structure of the Mexican power sector was entirely revised.² Contrary to historically salient experiences in Europe, the United States and Latin America,³ the Mexican power sector reform vindicated state ownership, management and intervention. These forms of state economic action have been institutionally reconstituted and are now praised as required components of a successful transition to a competitive market. This essay discusses the relationship between the technological, ideological and political conditions that make a reform politically sustainable. This new institutional environment must be understood adequately to enable productive discussion on policy challenges such as the development of industrial policy, the fulfillment of international commitments of climate change, and the use of energy services as a means of wealth redistribution.

The outcome of the reform is not a middle point between statist and free-marketers; it is something altogether new. It can be publicly acknowledged as a market, but it has been built upon the institutions that correspond to the direct provision of services by the state as much as the institutions of market competition. I argue that the notion of market acquired multivocality in the process of reform and has consequently coalesced into something entirely different from the notion that formerly prevailed in the Mexican context.

I advance an argument about the emergence of the new archetype of market that has coalesced in the public debate. As long as this archetype is stable, it will determine the arena for future political cleavages over redistribution, labor or environmental policies. We argue that liberalizing a market while maintaining a dominant fully owned enterprise in power generation and without correcting the price distortions of generalized tariff subsidies is not part of the guidebook of reform (Joskow 2008, Bessant-Jones 2016). But, by doing this, the state maintains the legal instruments to reassure private investors of their commitment to market extension. In doing so, the government guarantees a real commitment toward creating conditions for investment. This is achieved by (1) reining the company with market power, (2) bearing the costs of maintaining subsidized tariff structure for general consumer, and (3) delaying the transition towards low marginal cost technologies. In this account, functioning markets are created not by undermining, but by maintaining the state's full-fledge power to intervene.

This reform occurs at a moment in which the energy sector at global scale is experiencing significant technological transformation; it is still in the middle of a turn to natural gas, but will rapidly move toward clean technologies due to international agreements and domestic policies on

² For a thorough review see IEA (2017). The legal reform comprises a reform to three constitutional articles and 21 implementation (transitory) articles published in December 2013, a total of four laws directly affecting the power sector, and a dozens of other laws that have direct effects on the framework of operation of state ownership. The Ley de Industria Eléctrica (Power Industry Law), Ley de Órganos Reguladores Coordinados en Materia de Energía (Law of coordinated regulatory agencies), Ley de la Comisión Federal de Electricidad (Law of the Federal Commission of Electricity) were published in August 2014, while the Ley de Transición Energética (Law on Energy Transition) was not published until December 2015.

³ See Newberry (2006) for the case of England and Wales; Adib and Zarnikau (2006) for Texas and Dyer, Rango and Larsen (2006) for Colombia and Chile.

climate change.⁴ Without generalizable examples on power sector transitions to low emission technologies and uncharted challenges in power system operations (Hasselgar *et al* 2016), the future discussion on these challenges will need to correspond to the specific institutional instruments existing in the Mexican context, which are more suitable for government guided technological change.

1. *Political studies on reform and the power sector*

Previous reforms worldwide, including in Mexico, have commonly been studied from two standpoints. A first tradition is concerned with economic policies, their implementation and their outcomes as compared to models of rules and institutions associated with optimal economic results. In addition to the technical aspects of reform, studies in this tradition inquire after the role of rent seeking and investor confidence in undermining or facilitating reform. A second tradition relies on the tools of pluralist politics or institutionalist studies to describe and understand the conflict and compromise that leads to reform. Reforms are political processes and the processes, rather than the technical nature of the outcome, are what matter the most.⁵ Contrary to these perspectives, the tradition utilized in this essay inquires after the creation of new institutional models. Policy adequacy and contentious politics are still relevant subjects of study, but our purpose here is to investigate the construction of new conceptions of institutional structure, because utterly new arrangements allow us to reimagine the framework of political and policy problems.

In an allusive argument based on research and discussion that borrow elements from economic policy and political traditions, César Hernández (2007) claimed that power sector reform in Mexico was captive to control exerted by vested interests, but also captive to ideological limitations that confounded public debates.⁶ To address the first riddle, we study the politics that allowed the government to evade interests' capture, or the politics of coalitions that enabled a new president to obtain legislative support. To address the second riddle, however, the inquiry must be of a different nature; we study the way in which specific political, technical or economic problems nurture the emergence of new conceptual ideas.

A specific derivation of the economic policy studies (based on public choice methods) was developed to explain and guide structural reform process in the 1990s (Przeworski 1991). At face value, the objective of the power sector reform was no different from those occurring two decades earlier; market-oriented reforms to rationally allocate resources and make room for sound and solvent financial conditions for the state. Economic reforms, as noted by Stuznegger and Tommasi, must be viewed as “the establishment of institutions that provide incentives for individual decision makers to behave in ways that are collectively desirable” (1998: 3). This literature was written to address the problem of reform under crisis, wherein investors' trust and reform credibility were

⁴ See for example the Deep Decarbonization Pathways Project (<http://deepdecarbonization.org/>), a multi-institutional initiative to model scenarios of successful transition from major economies.

⁵ The collections edited by Siao Shansi. Fereidoon and Pgaggenberger (2006) and Victor and Heller (2006) represent both the economic policy and the politics studies. Several of the case studies are referred along this essay.

⁶ César Hernández was appointed Head of Legal Affairs of the Department of Energy (SENER) in the incumbent administration in February 2013, and was appointed Under Secretary of Electricity in February 2014. He remained at the post by the time of the conclusion of this article.

essential. Without credibility, reforms would be self-defeating, and credibility necessitates that economic actors in specific sectors understand and trust the premises delineated in an economic program.⁷

The evidence for the existence of a crisis in the power sector is mixed. In 2013 the rate of satisfaction with the electricity service was very high. It was, at 78.3 percent, the second best-rated among 13 public services, only one percent point behind university education, and boasting an approval rating three times higher than that of street lighting, a closely comparable service (INEGI, 2013). Certainly CFE, the only surviving state-owned utility, represented a fiscal burden, but the performance had been improving since 2009, after the assets of an older state utility, LyFC, were liquidated.⁸

The reform was not crafted in the midst of a crisis, but there were significant opportunities for improving the performance of the sector, from which economic benefits could accrue to different stakeholders. Political cleavages over distributional effects would still make the reform institutions vulnerable to contestation. The sources of cleavage could be multiple. In the power sector different technologies hold affinity with different business and financing models, and a good indication of where the cleavage in the industry lays is based precisely on those differences (Victor and Heller 2006). As discussed by Jose Luis Méndez (2016) for the case of the oil and gas sector reform,⁹ the political opportunity had been craftily nurtured since the electoral campaigns of 2012 and the immediate alliances that followed the victory of Enrique Peña Nieto. The power sector reform, however, was propelled in a context of relative efficacy in power system operation, fiscal stress, and diminished labor mobilization. Political maneuvering worked.

To be clear, the purpose of this essay is not to prove that power sector reform does not conform to the definition of structural market reform, but it will become evident that it in fact does not. Likewise, neither is the purpose to claim that there was no political conflict during the time of power sector reform, but we will discuss in general terms how this reform was accommodated. The contribution of this essay is to explain the conditions for successful synthesis among market and statist economic institutions.

⁷ See the collection edited by Stuznegger and Tommasi (1998), his introductory chapter and that of Dani Rodrik, "Promises: Credible Policy Reform via Signaling" and Alex Cukiermann and Mariano Tommasi, "Credibility of Policymakers and of Economic Reforms." In a compelling argument, Brune, Garret and Kogut (2004) argue that credibility can increase the value of assets during privatization, and that one of the mechanisms for building credibility is being subjected to IMF conditional loans.

⁸ Comision Federal de Electricidad (CFE) was created in 1949. Luz y Fuerza del Centro (LyFC) became a state-owned enterprise in 1963. In the 1960s the entire electric industry dedicated to the production of energy for markets was nationalized and brought under the management of the two companies. LyFC was dedicated to servicing Mexico City and surrounding cities. LyFC liquidation has been an unfulfilled project since the 1970s, opposed by the company's union.

⁹ The Mexican power sector reform took place along with other reforms of great depth; in gas markets, exploration and exploitation of hydrocarbons in the energy sector, and in telecommunications, financial services and competition. Whereas each reform was discussed and debated publicly in its own merits, the power sector reform was packaged as a part of a larger energy reform, comprising the entire hydrocarbon value chain in addition to the power sector. As discussed in detail by Méndez Martínez (2016) in *Foro Energético* the hydrocarbon policy reform became the most politically contested amongst all others, resulting in these others becoming tokens in parliamentary bargaining.

From the perspective of economic policy studies, it is common to frame the policy alternatives as evident and specific. In political studies the emphasis on process disregards the specific nature of the content of institutional and policy reform. Both frameworks reveal little of the process of innovation and misrepresent the nature of the decision-making processes. A persuasive proposal shared by Piore and Sabel (1984) and Herrigel (1996, 2010) invites research to focus on the uncertainty experienced in the processes of political and economic change, which encompasses not only limitations in our understandings of the problems at hand, but also ways to redefine them; ways to learn and broaden the repertoire of possible alternatives.¹⁰ This academic project could be utilized to address two questions that are only partially explained by economic policy (public choice) or political discussion: why does reform diverge from a standard (optimal) proposal of reform, and why does it appear as a stable institutional arrangement?

Cristopher K. Ansell (2011) depicts large-scale institutional change as a form of constitutional process (in the Common Law sense), by which a change in higher-order concepts guides specific action in particular contexts. The multiple results of specific experiments based on higher-order concepts coalesce to then re-inform audiences about the concepts. These higher-order concepts, or meta-concepts, interact with localized experiments continuously. Experiments can then take different forms because meta-concepts are often ambiguous, creating opportunities for multivocality and allowing different audiences to understand the concepts in multiple ways. Meta-concepts can become the axis of change precisely because multivocality provides a common ground or language upon which the process of stakeholder learning can be organized. Thus, the experiences and expectations are consistently expressed in a unifying language, even if they are actually not entirely the same.

As with Mexican energy reform, the mechanisms by which change occurs depend on the relationship between the concepts and the experimentation, as described by Ansell:

“These concepts may interact with much more localized ‘experiments’ that put part of all of the meta-concept to test. If successful experiments diffuse and proliferate, broader publics may develop that can then support the further refinement and elaboration of the meta-concept. This process of interaction between meta-concepts, local experiments, and the development of publics may ultimately culminate in large-scale institutional change” (2011, 46).

In the 2010s, Mexico had garnered relative strength in public finance and was able to get significant experience from relevant domestic policy experimentation in allowing private investment and adopting new management strategies within CFE, and three decades of restructuring programs across the world. The multiplicity of experience rendered the concept of market reform less determinate, and conversely more suitable for multivocality. There was an

¹⁰ This program is labeled pragmatism, since it follows the work of American pragmatist philosophy of the early 20th century. See Herrigel’s description of the optics of pragmatist political economy: “Research should focus on uncovering, across relevant comparative contexts in both the past and the present, a wide range of relational and governance experiments. What seems to work in the contexts that actors define? What does not work? What has worked in similar situations in other places? How fungible are the experiments? Rather than blending out ‘deviant’ or ‘marginal’ practices in the present and the past through the imposition of leveling market logic or abstract typologies of complementary institutional constraint, the analytical eye should be cast very broadly across the range of social practice looking for possibility” (Herrigel 2010: 234).

unresolved tension between the label “market reform” and the fact that the changes in Mexico did not fully address two of the major propositions of the traditional reform agenda: privatization and tariff deregulation. This tension underscores the broadening of the repertoire of market institutions, based on specific political demands and past experiences in economic policy. State ownership has oddly become a market institution, as much by merit of experience as by merit of necessity. The state actively protects and nurtures power sector market.

2. *Regulatory segmentation and the evolution of the power market in Mexico*

In contemporary literature on power systems, the industry is divided into four activities: generation, transmission, distribution and retailing.¹¹ System control is a fifth activity, not normally portrayed because it is not a market segment, but a fundamental component of the actual operation of the system.

Generation refers to the conversion of natural resources into electricity through industrial technology like turbines or solar photovoltaic systems, which we colloquially refer to as power plants. Transmission refers to the transportation of electricity over long distances from large-scale generation plants to consumptive regions. Distribution also concerns the transportation of energy, but at a much lower voltage so that the energy can be received by its final consumer, usually a household or business. Retailing refers to the purchasing of electricity from the wholesale market and the selling of electricity to the final consumer, which requires metering and the provision of services to a client. Finally, system control, often conflated with some of the other activities, refers to the role of determining which power plants to dispatch based on efforts to secure stability, safety and reliability of the systems, alongside other economic goals, and in keeping with energy trading rules.¹² We generally call these actors generators, transmission system operators or transporters, distributors, retailers, and (independent) system operators. One particular type of actor is ubiquitous, and most clearly identified: the self-suppliers are generators which consume energy at the site of production and thus do not require other segments to operate. In practice, however, it is common for self-suppliers to be connected to the power grid, whereupon they at least partially engage in the power market.

¹¹ Wolak (2014) does not consider control to be a different industrial activity, but subsumed in the interaction between generation and transmission. However, more recent literature is concerned with the emergence of low carbon technologies and diversity in the dispatching policies (the rules that determine who is allowed to generate at any point in time) due to the existence of technologies that can generate costless energy at any given point, once the plants have been built—essentially creating renewable energy like wind turbines and solar photovoltaic systems.

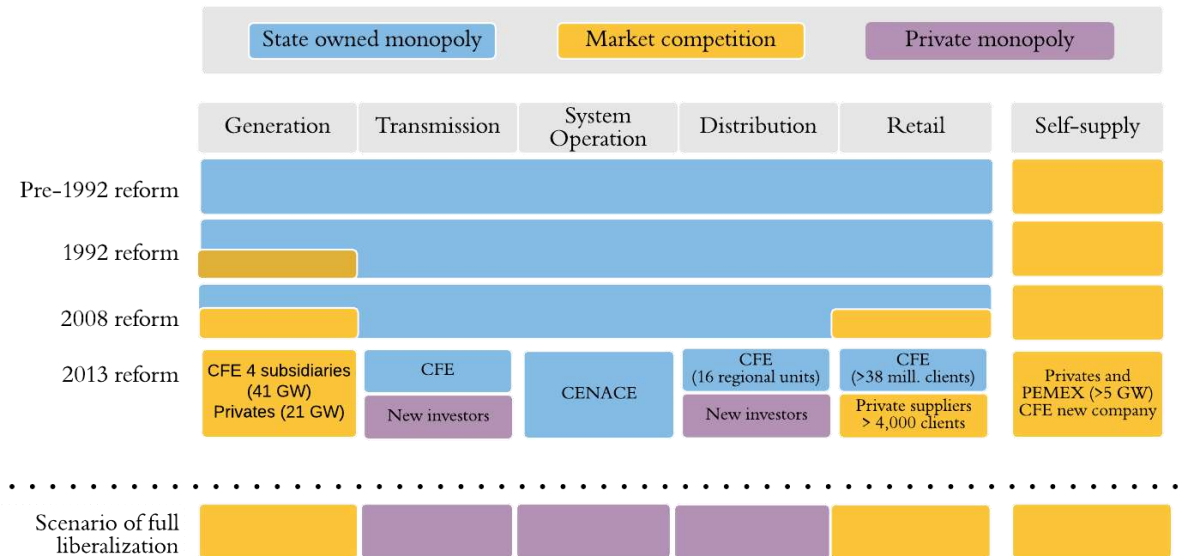
¹² System operation is imperceptible in the analysis of power markets, because system operation organizations are supposed to be instruments of whatever market or bureaucratic rules exist. But commonly, as in the case of Mexico, they are the visible bureaucratic hand that makes market transaction a reality. We borrow the sensibility of Donald MacKenzie in *An Engine, Not a Camera. How Financial Models Shape Markets* (2006) to underscore the importance of the bureaucracy, as well as the facilities, rules, and models that have been created for it. Future research must concern itself with the way in which these rules, embodied in formulas, create and direct markets, rather than simply assuming that they are practical instruments in an independent market.

Segmentation has become a legal feature constructed upon the technical characteristics of the power system, and its applicability derives from the possibility to measure the electricity produced, traded and consumed at different relevant points of exchange, for example with a meter that is placed between a building and a power distribution grid. What is politically salient is the possibility of adopting regulatory and policy frameworks that are guided by distinct logics. This characteristic is central to understanding why market multivocality so effectively enables the construction of parallel processes of political, regulatory and technical debates so as to determine what constitutes a market in the energy sector.

As synthesized by Wolak (2014), reformers face two types of challenges in determining the rules of a market: “the first is the extent to which market mechanisms versus regulatory processes are used to set the price consumers pay. The second is the extent to which market participants are government versus privately owned” (2014: 220). What is most relevant about regulatory market segmentation is that it provides governments with the possibility of adopting policies that address these challenges independently. In addition, these concern different groups of stakeholders based on the relative autonomy between the segments. Stakeholder groups are formed based on these boundaries; for instance, the power generation segment and large consumer segment are both concerned with wholesale market rules and thus comprise one stakeholder group, whereas the general public is concerned instead with tariff policies.

The power sector reform had been preceded by multiple failed attempts at swift liberalization. In contrast to other sectors that had experienced rapid privatization in the 1990s, the power sector experienced a slow transition process that began in 1992 with reforms to the Ley del Servicio Público de Energía Eléctrica (LSPEE) and continued under this legal framework until, the approval of constitutional reforms in 2013, and the publication of the Ley de Industria Eléctrica (LIE) in the summer of 2014 that superseded LSPEE. One way to understand the institutional transformation of the power sector in Mexico is from the perspective of this segmentation. Figure 1 represents the different configurations that the power sector has embodied since the early 1990s up until the 2013 reform. This diagram synthesizes two of the relevant criteria identified by Wolak: property and the use of mechanisms operating under market or regulated monopolies. From this perspective we see where state owned monopolies have become increasingly complemented by private market competition. Figure 1 provides also the representation of the scenario of full liberalization that would most appropriately represent the ideal of structural reform.

Figure 1. Comparison between the characteristics of reform



Source: Own elaboration. Note: The diagram excludes local self-supply which refers to generation at the site of consumption.

Before the LSPEE was enacted in 1992, the government owned enterprises that operated the power sector, with some self-suppliers. The LSPEE opened up investment opportunities; although the state continued to provide energy to the general public, maintaining responsibility for generation, distribution and retail of electric service, the CFE and LyFC were able to enter into contracts with private generators (Independent Power Producers, IPP), and consumers were allowed to generate power for their own consumption with less constraints (Carreón *et al.* 2006). The intent was to enable the state to rely on private investment for increased power supply, allowing energy intensive industries to more efficiently utilize their energy inputs.¹³ The next important legislative reform proposal was presented and debated in 1999 and 2000. This reform intended to take the country much closer to the ideal model of reform, even considering a plan for partial privatization of state owned companies, as had been done with other public companies (Tellez 2000, Hernández 2007). The attempt, however, was unsuccessful.

Based still on the regime created by the LSPEE, regulatory innovations in 2005 and 2007 were further strengthened by reforms made in 2008, increasing the range of business models that would fit under the definition of self-supply. New rules and tariffs for the use of transmission and distribution infrastructure were established to foster the use of a self-supply model, and as a result

¹³ When the Energy Regulatory Commission (CRE) was created in 1994 the organism had received 68 permits from the previous self-supply legal regime. By 2000 182 permits had been issued, and before the new laws were published in August 2014 the number had increased to 1,260 (CRE 2015). The actual number of functioning power plants is less than the total number of permits issued, but the number is still indicative of the relevant growth in private investment even before the reform.

the sector observed a significant increase in investment.¹⁴ Many more companies, including public and private behemoths, began to augment or purchase energy from private companies, for instance PEMEX on oil and gas, Wal-Mart on retail, Peñoles on mining, and CEMEX on cement (Valenzuela and Studer 2016). This new segment would not encompass all consumers, not even all large consumers, however, for the business and financing model required projects to leverage the credit rating of the companies purchasing energy, and only a handful could provide such credit ratings who were also willing to sign 20-year supply contracts (Valenzuela and Studer 2016).

The depth of reform in 2013 is particularly prominent with regard to generation. All generators have to rely on the wholesale power market, either pooling energy in day-a-head or real time markets, or by taking part in financial commitments for load serving when bilateral contracts are signed between generators and final consumers (IEA 2017a). It is less radical in the segment of retail. CFE will maintain the role of providing retail services to the majority of users under regulated tariffs, by the name of “universal basic service”. For the domestic and agro consumers these tariffs incorporate significant subsidies. The main difference is the relevance acquired by the independent regulatory making under the responsibility of CRE.

In 2014, 42 percent of energy was already generated by the private sector, about 13 percent belonged to arrangements made between producers, consumer and exporters, and 29 percent was being purchased by CFE in long-term IPP contracts (SENER 2014). In August 2016, only two years after the new legislation had been issued, CFE held 161 permits with an installation capacity of 43,016 MW. There were also 135 additional permits for newcomers and previous permit holders that decided to move into the new legal framework, with authorized capacity for 12,489 MW.¹⁵

From the perspective of consumption, SENER reported, based on data from 2015, at least 39.6 million users currently have contracts with CFE (SENER 2016). Most of those users correspond to the close to 32 million families that enjoy electricity. The remaining users are businesses and government agencies across the country. Likewise, CRE, with data from 2014, identified at least 4,100 consumers that could be considered participants in deregulated power transactions with other companies, including privates and CFE specialized units. These comprise the largest consumer group and a concentrated 33 percent of the energy delivered by CFE in 2014 (Madrigal 2016). But, as described above, the retail market has already started to grow for large consumers. By the same year there were already 868 permits that would be serving at least the same number of large users. In this regard, liberalization had already begun to make significant inroads, providing experience on the suitability on the use of mixed regulatory principles.

¹⁴ The years with most permits issued are, in order, 2005, 2007, 2014, 2013, 2008 (CRE 2016).

¹⁵ Permits do not reflect actual installed capacity. There were other 1,070 permits granted (CRE 2016); and even though all of the formal permits authorize a total capacity of 109,114 MW, the Department of Energy (SENER) reported an installed capacity of only 68,044 MW and their system is not expected to surpass the 100,000 MW threshold until the second half of the 2020s (SENER 2016).

3. *The reform model and its variance in Mexico*

Paul Joskow, a scholar at the forefront of market reform since the early 1980s (cf. Joskow 1979, 1983, 2006, 2008), has been straightforward in his call for full-fledged reform: “The textbook model of restructuring, regulatory reform and market design is a sound guide for successful reform [...] Departing significantly from the textbook model of restructuring, competitive market institutions and regulatory reform is likely to lead to performance problems” (2006: 20).

There are several country cases where textbook reform has occurred only partially, or has unfolded in a different direction. There are also cases where evidence uncovers attempts made to retreat from past restructuring.¹⁶ It is recognized that some features might have much more significant economic benefits than others, and that some might require a set of institutional capabilities to access the full potential benefits of reform (Besant-Jones 2006, Hunt 2002, Díaz Bautista 2005). The contrast is especially important between wholesale and retail markets. The benefits from reforming the former will not necessarily reflect on the later. It is common that the benefits for retail clients concentrate on improve quality of service, rather than the reduction in its cost (Joskow 2008). However, there is a widespread sense that coherence is important, explaining differences in implementation are adequate based only on differing structural conditions in markets (e.g. the types of energy resources available).

There are three principles on the economic mechanisms that require privatization and deregulation and that are sustained by the beacons of power markets, like Joskow and Wolak: adjusting the price system so that consumers pay for the marginal cost of energy supply, enabling the emergence of a profit motive to increase efficiency in production, and fostering competition to create incentives for investment and the reduction of energy prices.¹⁷ In the following section we will discuss how these three principles of reform play out in the Mexican case.

¹⁶ Some countries, like the Nordic cases, do not rely on full privatization (Amundsen, Bergman and von der Fehr 2006), others did not develop a centralized authority for system operation as in the case of Germany (Shah *et al* 2016). On discussion about retreats, see Borenstein and Bushnell (2015) and Wolak (2014) for United States, and Davidson *et al* (2017) for China. Besant-Jones (2006), and Victor and Heller (2006) incorporate the idea of diversity as a natural feature of reform.

¹⁷ “First, with regard to overall allocation of resources, making consumers pay at the margin what it costs to produce and supply them is expected to achieve a better economy-wide use of resources. [...] Second, the profit motive gives a stronger incentive for efficient use of inputs—both lower-cost combinations of inputs and reductions in inputs—required to produce a given output, than any incentives offered by an enterprise controlled and managed by a bureaucracy. [...] Third, competition, where it is possible, provides the most likely means to reduce supply costs and pass benefits on to consumers. If the power sector can be made to cover its costs and be profitable, firms will have an incentive to invest, and they will also have an incentive to seek out new markets that can be profitable” (Besant-Jones 2006: 10).

3.1. Adjusting the price system

Under reform, consumers would pay the marginal cost of electricity. In practice this would mean substantial portion of consumer's access prices under market base mechanisms, and not through regulated tariffs as defined by the authority.

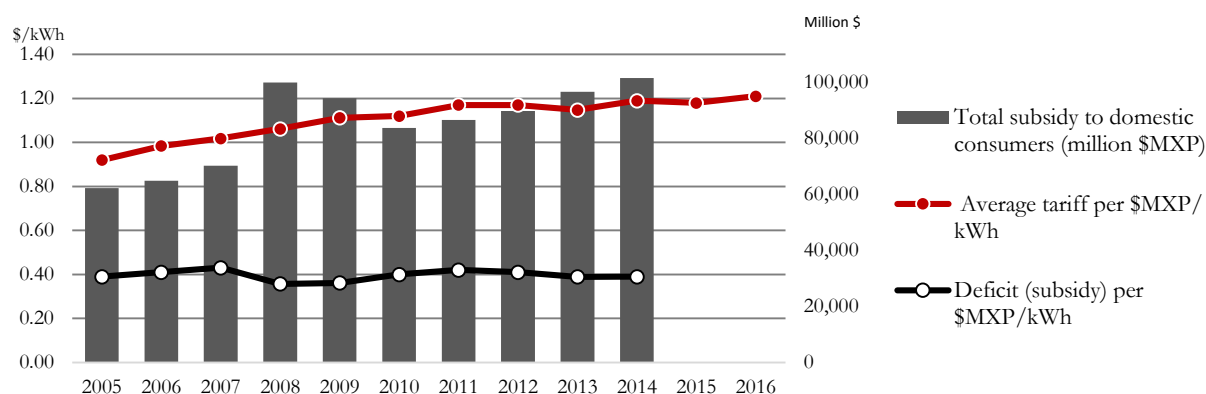
In Mexico, with the reform, large consumers are entitled to take part in the market instead of being subjected to regulated tariffs. Based on estimates from the Energy Regulatory Commission (CRE), the users that would be participating in this unregulated market framework would represent one third of all electricity consumption (Madriral 2016). It could still grow significantly if CRE were willing to further push the threshold that divides deregulated from regulated consumers. While they would be participating in a model that corresponds to full reform, still two thirds of consumers would not take part in this market, at least not until new regulation is issued. For both technical and economic reasons, the smaller the consumer the harder it is to take part in a market; therefore small consumers, in aggregate representing most energy consumption, can be subjected to regulated tariffs. This is the case for residential consumers and most businesses, and as long as it is the best solution under technical constraints this is coherent with a full market reform.

Residential consumers deserve further mention because they currently enjoy significant subsidies and because there is no indication of any change in governmental policy. The existence of segmented markets allows the government to maintain the subsidized structure and, what's more, to collaborate with local governments in reducing the level of tariffs in specific regions.¹⁸ The government has stopped reporting the amount of subsidy corresponding to domestic and agricultural tariffs, but in 2014, the last year when the data were provided, the total cost of subsidies was historic, 101.5 billion pesos for the domestic sector and 13.4 billion pesos for agricultural producers.¹⁹ As presented in Figure 2, domestic users on average paid only 39 percent of the cost of the energy consumed, and agricultural producers paid only 29 percent (Presidencia de la República, 2016). In that year, domestic sector consumption accounted for 26 percent of power sold by CFE with over 35 million users, while agricultural producers accounted for 6 percent of the consumption with only 127 thousand users (SIE, 2016).

¹⁸ The state of Chihuahua for example, committed its federal funding to pay CFE for increased subsidied in the state. This agreement was developed with the acquiescence of the federal Department of Finance (SHCP), public version of the agreements between the states of Chihuahua and Sonora and CFE can be consulted in the Portal Nacional de Transparencia (www.infomex.org.mx) under folio number 1816400183616.

¹⁹ For reference, in the same year the power sector contribution to the GDP was 330 billion pesos at current prices (2008 Presidencia de la República 2016).

Figure 2. Subsidy to domestic consumers between 2005-2014 Total and per kWh



Source: Based on Presidencia de la República (2016) and SIE (2016).

The subsidy, which benefits 98.2 percent of consumers (96.1 percent in 2002) (SIE 2016), is allocated based on consumption levels and through a differentiation criterion of regional average temperature. The tariff structure consists of different rates based on geographical location and season of the year, with variations in cost per kWh within different ranges of consumption. Seven different houses located in seven different regions would observe four steps in price per kilowatt-hour, which would change in tandem twice a year (because of the warmer season) (SHCP 2015).

As debated by Komives *et al.* (2009) and Hernández (2006), the subsidy resulted from opposing political pressures to decrease or increase subsidies. Compared to a simple subsidy per kWh, this structure has limited regressive effects and has also contained the growth of household consumption above a defined (unsubsidized) threshold, but it is still generalized.²⁰

There is widespread optimism that wholesale market reform will reduce the amount of subsidies basically by costly power generation was itself one of the key factors for the need of a heavily subsidized tariff. In addition, CFE has been investing successfully in the modernization of distribution infrastructure to reduce technical and non-technical losses, from levels above 16 percent in 2010 to 13 percent by 2015 and a target of 10 percent (SENER 2016).²¹ Already by 2007 Hernández (2007) had argued that the problem was not the subsidy but the cost of energy production. Komives *et al.* (2009) agreed with this perspective only partially, as it would be a challenge to sustain the argument that an efficient market would be able to reduce the cost of servicing energy to the necessary level to simply make the subsidy disappear.

²⁰ Because of this structure, the average price of each kWh consumed by residential users has indeed increased by 2.3 percent in real terms since 2013 to the first semester of 2016 (SIE, 2016)—a positive direction but not at a scale comparable to the depth of the reform.

²¹ By comparison the average losses in OECD countries is 6.6 percent (IEA 2016: 21).

The government has explicitly expected a reduction in the cost of power generation by between 26 percent and 48 percent (SENER 2015).²² According to IEA statistics, the wholesale price of electricity in Mexico decreased by more than 14 percent between the last quarter of 2012 and that of 2015 (IEA 2016b). This is the same wholesale price IEA expects to be maintained by 2040 (IEA 2016). However, this change is not a direct result of the wholesale market — which has been operating only since 2016 — but rather the result of a structural transition toward consumption of natural gas and modest growth in renewable energy, both of which allow for a significant reduction in the cost of fuels for power generation (CFE 2016, IEA 2016). In fact, as described by Pollit (2012), surveying the evolution of the cost of electricity across restructured markets, the international comparative evidence does not conclusively prove that lower rates follow market restructuring. Cost reductions are rather based on the change of other structural conditions, facilitated but not entirely created by a wholesale market.

The amount of subsidy will be reduced as long as the cost of fuels remains low, but the tariff levels will be maintained and the policy principle will not be modified. But this has not undermined the credibility of the reform, despite recommendations based on the standard approach to power sector reform. This regulatory segment, that of household retail and additional users that currently accrue support, is presented as a matter for the state to manage and the risk of soaring energy prices and the burden of potential increments in subsidies are only a risk of the public budget. Contagion to the private sector is controlled by public ownership.

3.2. Creating the profit motive

The second premise is that efficiency is a result of an enterprise profit motive. This implies private ownership and management, either from new investors or through the privatization of state assets. Leaving aside the question of whether private companies have a profit motive, the question is whether state-owned companies can behave in such a way, and the effect that this behavior may have on the performance of other market participants.

Reformers determined not to privatize CFE, but to give the company a certain amount of flexibility in strategic decision-making (IEA 2017a, LCFE 2014). The main transformation regards administrative autonomy, organizational restructuring and partial legal unbundling. CFE is being separated into separate companies: one holding firm, six generation companies, one transmission company, one distribution company, one retailer for general service, and one retailer for qualified users. Despite the partial unbundling the subsidiaries will remain under the leadership of one CEO and subjected to an integral business strategy (SENER 2016b, García 2016). These firms are necessarily state owned. But CFE has incorporated other companies that allow for the participation of private partners, one to deal with IPP contracts, another to develop business with self-suppliers, one for domestic fuel trading, and another for international trading. Except for those of transmission, distribution, IPE contracts, and retail for the general service, all companies will

²² The government has been cautious not to release the numbers to a wide audience. These were presented as part of the official consultation process to publish the new Market Rules that will apply to the wholesale electricity market. (SENER, 2015).

engage directly with competitors, mostly private, but also PEMEX; in the case of generation, subsidiaries will be competing amongst themselves, or this is supposed to be the case.

CFE and its subsidiaries will be run by boards of directors comprising four independent members appointed by the President with the ratification of the Senate, along with five members from the federal government, and one member of the Union (LCFE 2014). Independent members are expected to play a relevant role in informing the business direction of the company and subsidiaries.²³

There is one segment in which CFE will play no role in the power market: system operation. As discussed previously, system operation comprises management of energy dispatch and supervision of the operation of the grid. In the case of Mexico, it also included the management of market operation, the clearing floor. Dispatching and system monitoring was performed by CFE's specialized unit Centro Nacional de Control de Energía (CENACE). CENACE expertise has been recognized to be particularly valuable for the transformation of the power system, and its engineers have been characterized as the people best equipped to plan and assess the needs of a future technological transition (Watson *et al.* 2015, Shah 2016).

CENACE was separated from CFE and granted technical and administrative independence, but remained as a government body. CENACE was provided an autonomous personality, enjoying a special status of financial autonomy based on fees to market participants and a governance structure in which independent board members played a significant role (LIE 2014, Chapter II). It is relevant to note that CENACE was not privatized, but rather its responsibilities were increased in order for it to become the centerpiece of the new power market. This need not be the case; in other jurisdictions, as in Germany, China and different jurisdictions in the United States, system operation has remained a part of transmission companies (Joskow 2008, Borenstein and Bushnell 2014, Shah 2016, Davidson 2017). Under the technical leadership of CENACE, grid expansion planning will be based on a combination of market drive and governmental strategic decision-making (Shah 2016), a combination that can seemingly only be achieved through the appropriation of the skills of CENACE staff by the centralized administration in the federal government.

3.3. *Fostering competition*

Finally, competition as an organizational arrangement to trade should allow for cost reduction and for these cost reductions to be transferred to the consumer. Besant-Jones (2006), Wolak (2014) and Borenstein (2000) agree that in the history of wholesale electric markets the most fundamental challenge to adequate market operation has been the incentive for a dominant market player to increment its economic rent by directly influencing the clearing price. Besant-Jones, for example, claims that if the priority was competition, privatization could be only a secondary goal. While this might seem to lead to incoherence about claims of restructuring, Wolak more clearly addresses the issue by stating that the challenge is not necessarily that privatization undermines competition,

²³ The role of the independent members has already been contested, with the introduction of two initiatives to augment the public accountability of these board members, one initiative presented by the federal government itself; the objective of these initiatives is to address concerns about conflicts of interest, in particular about commercial relations with CFE (Meana 2016).

but rather that a lack of regulatory capabilities enables privatized companies to build market power and use against consumer welfare.

The subsidiaries still remain under one single corporate leadership, which could place substantial concerns over the operation of the company, against the adequate development of competitive market. The IEA (2006) has explicitly called for the existence of “Chinese walls” to be placed between subsidiaries, but it is not clear there actually exist. To be sure, the law provides SENER and CRE with substantive power to monitor the market, sanction wrongdoers and to mandate further unbundling or privatization of parts of CFE (SENER, 2016, LIE 2016, OECD 2017).

A second concern for competition is the use of CFE depreciated assets that are still relevant sources of power, like the nuclear, coal and hydropower fleets of the company. These plants produce energy at low marginal price and represent more than 18 GW or about 26 percent of the total installed capacity, producing above 75 GWh or 24 percent of the electricity in Mexico in 2015 (SENER 2016).

The importance of this can be shown through a hypothetical situation in which CFE is able to allocate its power production assets freely amongst the segmented markets. Having a legal monopoly in the market of small consumers, CFE could allocate its most expensive fleet to produce energy for this captive market, while using its most competitive (low marginal cost) power plants to compete in the open market for bilateral contracts with large consumers. In this scenario investors would find it very challenging to compete with CFE, and the cost of serving energy to the general population would increase. This scenario is precisely the opposite of that which is expected from the reform.²⁴

Reformers have mandated that the lowest marginal cost power plants from CFE be assigned to service the general population (LIE 2016, XVII Transitory Article), leaving the company with its least competitive units to compete with the private sector for bilateral power contracts. This market then would be contested by new market entrants, reducing the overall cost of power consumption in Mexico, and forcing CFE either to invest or allow its market share to recede.

One of the key features of the segmented market in Mexico is the use of auctions, which are intended to provide CFE as a retailer with mid- and long-term contracts. These auctions will provide tariff stability and reduce the risk of fuel shortages. This is a common feature among regulations that link the mechanism of wholesale power markets with regulated retail services to hedge against price instability. Based on a regulated tariff, companies that face rapid changes in the cost of generation could find themselves in financial problems, and for this reason, when tariff structures are inflexible (are not allowed to change immediately with costs), it becomes convenient for companies to lock in the cost of the energy that will be sold at least for a few years (Bazillian and Roques 2008). Among the auctions, long-term auctions stand out because they seem to respond not to the evolution of a power market, but to external policy requirement, in particular Mexico’s climate policy.

Long-term auctions drive the system toward a different path than do wholesale markets because they do not allow competition to occur on a sustained basis (e.g. every day or every hour).

²⁴ A similar scenario is described by Bowler and Fuentes (2014) to illustrate the dangers of maintaining a CFE monopoly over retail business.

Competition occurs during the auction, locking a price and a quantity to be delivered. These contracts do not work well for technologies that experience variation in the cost of fuels (coal, gas, oil), but are ideal for renewable energy, which has little if any variable costs. That is why these contracts were intended to be deployed for the expansion of renewable energy in particular.

4. *Management of public commitments and multivocality in markets*

Essentially, the reform was allowed to offer multiple messages and to construct an institutional framework that could deliver these promises through both private markets and state intervention while still maintaining the notion of the market. A precedent to this move was already clear years earlier, as reflected in the work of Hernández (2007) already discussed, but also in other examples. De Rosenzweig (2007) develops the concept of constitutional paradigm to argue that a legal regime that established complementarity between public and private investment is indeed coherent with the overall principles of state economic role embodied in the constitution. This was an attempt to open up a new opportunity for thinking about institutional reform.²⁵

Market reform meant different things to different stakeholders and contexts, and four meanings stand out. A market reform meant simultaneously an increase in private investment, a reduction in cost, the completion of the transition to a natural gas supply, and the expansion of clean energy sources. In fact, these were presented as mutually reinforcing and coherent. And fulfilling these has been intrinsically linked to the maintenance of state intervention in subsidies, investment orchestration, and mandates to privates.

The objective of the energy reform was to foster productive investment in the modernization of the power sector, which in turn would allow the industry as a whole to provide electricity to consumers at more competitive prices, without compromising the value of the state's assets and probably increasing the solvency of the federal government. But this implied different results for different stakeholders. The overarching promise from the government was that the cost of energy would be lower, a promise that remains an official message (Presidencia de la República 2016).

To be sure, during the last two decades different countries have confronted the problem of insufficient investment leading to periods of high cost of energy.²⁶ However, this concern was not acute in Mexico, as the country was not under the threat of supply disruption. In fact, Mexico had favorable structural conditions. In 2012, Mexico had a reserve margin of 21.6 percent, significantly higher than international standards and higher even than Mexico's policy prescriptions of 13 percent (CFE 2014), which meant that the system had extra capacity to cope with technical disruptions, unexpected rapid growth of demand, and lack of interest from investors in entering the Mexican market. With a longer term perspective the reform incorporated instruments to secure sufficient capacity in the system, specifically to call for capacity auctions that provide CFE, as

²⁵ De Rosenzweig was appointed Under-Secretary for Foreign Trade from 2011 to September 2016.

²⁶ Under a basic model of market competition, cycles of hiking prices are followed by investment that finally reduces prices in a cyclical manner. But such cyclical variations are politically unacceptable because of the potential to damage the household economy and the competitiveness of local firms during scarcity periods.

retailer for the universal public service, with the capacity requirements mandated by the government.²⁷

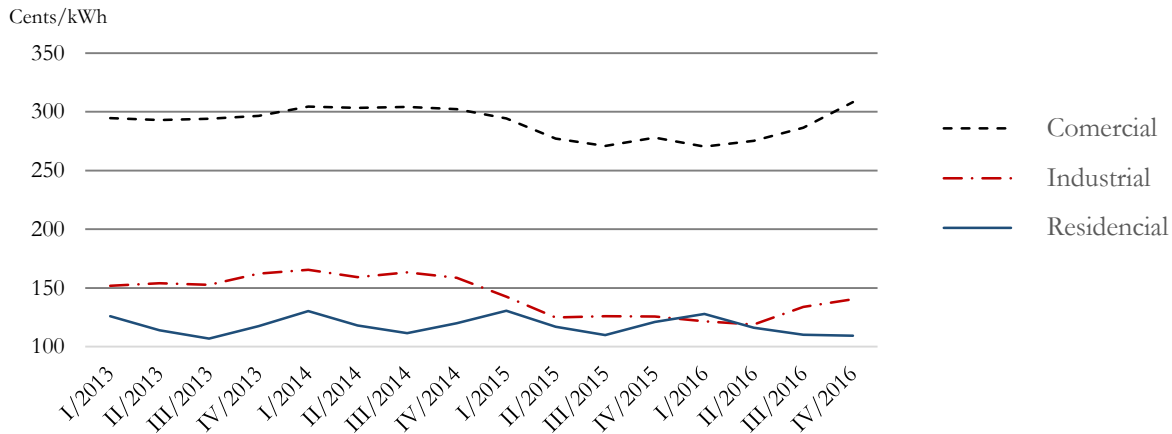
But the need to need to secure investment to produce the desired reduction in production costs still remains a challenge in the short term. In the period between the publication of the constitutional reform and the implementation of laws, Bowler and Fuentes (2014) foresaw chances for investment to fail to materialize. Their recommendation was very precise: “Reserving expected demand growth in the industrial and commercial sector, so that it could only be met by new entrant IPPs, would provide confidence to investors. Removing CFE as a competitor would reassure investors that there would be a market for their capacity of whilst ensuring at the same time competitive market prices” (2014: 15).

The reform created the first condition, in providing a space for competition to occur in specific segments, but did not create the second, which is to prevent CFE from engaging as a competitor in such a market. As discussed previously, by being forced to dedicate the lowest marginal cost power plants to deliver energy to the general service, the potential for CFE to outcompete privates is seriously hampered. However, it is still important to explain how a dominant SOE is not only acceptable, but even promising as an instrument used to enhance the credibility of the reform.

The President’s promise of a decrease in the cost of energy was purposefully ambiguous; while the cost of producing energy could be reduced, as discussed above, it does not entail any reduction in regulated tariffs, nor does it insulate non-regulated consumers from price volatility. For the general domestic consumer, a cost reduction would mean a reduction in electric power bills, despite the fact that they already enjoy significant subsidization. But, as seen in Figure 3, the cost of electricity for domestic consumers has until now followed the seasonal variations that are common based on the specificities of the tariff structure. Despite the government’s assurances, until now there have only been minor changes made to subsidized tariffs, which means that effectively the power market has been entirely insulated from further variations (positive or negative) from the reform (see *supra* 4.1).

²⁷ The purpose is to pay for the installation of generation capacity that can be made available during a number of hours of a number of days in the year that are considered to have the highest levels of demand. These auctions could rapidly secure investment in specific power plants, a feature not widely used worldwide, but which was not contested in Mexico. This topic has become especially important in the context of renewable energy expansion, for there is no consensus about the convenience or necessity of these mechanisms. For the view that a successful market would only trade energy and other specific services actually delivered, with capacity markets considered a solution for market failure, see the discussion in Baritaud’s *Securing Power Transition. Generating Investment and Operational Issues in Electricity Markets with Low-Carbon Policies* (2012).

Figure 3. Average electricity price by tariff sector



Source: Based on SIE 2016.

In the case of non-subsidized consumers, the results point in a positive direction, but as explained previously the structural changes that allowed this to happen did not occur directly because of the market. In fact, the most recent devaluation of the Mexican peso against the dollar has significantly reduced any gains that consumers received from the previous price reduction, as seen in Figure 2, and spurred a backlash from the business community (Reforma 2016). This has also affected exporters, for whom a relevant indicator is the cost structure of competitors outside Mexican borders; this leads us to the second specific expectation, the transition to a comprehensive natural gas supply.²⁸

The opinion is widespread that Mexico should enjoy the economic benefits from the supply of low-cost gas produced from shale oil and gas camps in the United States. Natural gas prices in the United States have remained significantly low for the entirety of the 2010s, and are expected to remain comparatively low in the near future, a prediction which has created a sense of political urgency to allow Mexican consumers in the power and manufacturing industries to benefit (cf. COMEXI 2013). The IMF (2015), for example, has estimated a 3.6 percent increase in economic output from manufacturing industry, an estimate premised on access to additional imports of natural gas from Texas.

Between 2011 and 2012 Mexico experienced shortages of natural gas. A historical price drop in those years, created by the glut in production of shale oil and gas, increased the Mexican demand for fuel and hurt the competitiveness of domestic gas production by PEMEX (SENER 2013).

²⁸ Many of these companies are also some of the largest energy consumers in the country, and therefore the reform also offers new business avenues. In fact, the experience of the self-supply mechanism has already provided many of these companies with the experience to move into the new wholesale power market. AHMSA, the largest domestic steel production company, has announced additional investment in power production facilities for self-supply and intent to participate in the wholesale market (Valle 2015). CEMEX, the largest domestic cement company, created a subsidiary to operate its existing energy assets and to engage in future business opportunities (CEMEX 2015).

During stages of significant stress, “critical alerts” were issued, rationing the supply of natural gas to many of the largest consumers, but primarily CFE. Hence, the system stress in natural gas supply came at a substantial cost to industrial users, self-supply power producers and the entire power generation system (ASF 2014).

In 2013, the incumbent government responded to the challenge of natural gas bottlenecks by using its state-owned enterprises to mobilize investment rather than waiting for reform. CFE and PEMEX instrumented the largest expansion of the natural gas pipeline system in the history of the country, intended to more than double the available capacity for importing natural gas from the United States, SENER 2013, SENER 2014). By the end of 2016, Mexico would have already imported more than twice as much natural gas from the US as it did in 2013 (EIA, 2016).²⁹

The increase in access to natural gas in the power industry was the industrial policy and investment muscle of the state-owned enterprises. This feature has been vindicated also in the new institutional framework, through the role of the newly created National Natural Gas Control Center (CENAGAS) as owner of state infrastructure on gas pipelines and orchestrator of new investment. For the Mexican government to maintain responsibility for developing infrastructure meant that they recognized that the institutional arrangement for fostering private investment existing since the 1990s had barely worked.

Simultaneously, the reform provided a new framework to address the challenge of achieving Mexico’s commitments on clean energy deployment. Between 2010 and 2012 long-term legal mandates on clean energy deployment were enacted, in particular in the General Law on Climate Change, which established a target of 35 percent minimum share of clean energy sources by 2024 (from 15 percent in 2012). During the constitutional reform and the later implementation of the legislation, the federal government did not adopt any new policies nor did it change these or other established legal mandates. However, more significantly, the reform created new mechanisms to ensure that the existing mandates would actually be fulfilled (Valenzuela and Studer 2016).

The reform included a Clean Energy Certificates mandate system. Shah *et al.* (2016) argue that this policy evolution is an exemplar in the sense that the renewable energy expansion is seen as an organic part of the power system. The market design recognizes that either the wholesale market system is not well suited for the development of renewable technologies, or these technologies are not price competitive but meant to be fostered for non-economic motives. In either case, the federal government maintains full authority to determine the minimum rate of growth in the deployment of clean technologies. The mandate system allows the government to establish a minimum number of certificates that must be held every year by consumers in the wholesale market. Certificates are awarded to clean energy generators, which means that any given year there must be enough clean energy generation to fulfill the demand for certificates.

Long-term energy auctions were created to facilitate compliance with the mandate system. These auctions are based on CFE-retail need to buy energy and certificates to comply with the government mandate. And because this process is public, one of the benefits of auctions is that it allowed market participants and the public in general to know about the current cost competitiveness of different clean energy technologies. Unexpectedly for many, the mechanism has delivered record-

²⁹ In just one year, between 2015 and 2016 the share of imported natural gas into the total gas supply in the country increased from 30.7 percent to 37.3 percent (IEA 2017b).

breaking prices far below what was expected by energy planners in Mexico, contributing to lower electricity prices in the long-term.³⁰

As we mentioned, these four features were promoted as results of the reform agenda, investment, cost reduction, increased gasification and increase share of renewable. Investment in particular seems consistent to the rest of the objectives, except clearly, for the market segment of subsidized retails business. And in the short term all of the multiple objectives seem to be adequately managed by the government. This will not necessarily be the case in the future.

In the short term, in 2018 to be precise, the government's new tariff structures will be authorized by CRE and the government will engage in an exercise to determine if it is willing to maintain the same subsidized tariff structure or to redraw the way in which the subsidies are provided. The subsidy topic will become an issue at hand for discussion in the legislature, and therefore also in party politics, independent to the discussion about the future and performance of CFE.

In the long term, there will be tension between the need for fostering investment in low-carbon technologies and natural gas. When Victor and Heller (2006) compiled the national case studies cited in this essay, the dominant force was the technological drive to expand natural gas against incumbent sources of energy (heavy fuel oil in Mexico). That transition has essentially occurred, and there is already pressure to move into a subsequent transition period, of similar depth and speed, to expand the use of renewable energies in order to reduce greenhouse gas emissions.

Concluding remarks: the future of political cleavages in the power sector

This article underscores a significant shift in the understanding of market institutions in Mexico, in particular the incorporation of state-owned enterprises and government active intervention as necessary elements for successful market operation. The emergence of an institutional arrangement that combines private investors, market mechanisms, and state ownership and management is in no way unique to Mexico. Countries like China (Davidson 2017) or South Africa (Baker 2016), to name two examples, have implemented distinct models showing varying degrees of success or failure in fulfilling the political and economic expectations that engender them.

The rehabilitation of the state enterprise is the product of needs that are particular to the reform. The federal government, mainly through keeping CFE under the control of the central government, guarantees three functions. First, for private investors, there is certainty that the dominant market player (CFE) will have limited capital to compete in important market segments. Second, there will remain the capacity to mobilize strategic investment when needed. And third, tools for avoiding undesired distributional outcomes will remain at the discretion of the state, including

³⁰ A result of the first auction, which finished in March 2016, was the awarding of a total of 16 new wind and solar plants to be built and operational by 2018, accounting for 2,085 MW. The second auction, which finished in September 2016, awarded contracts that entail the construction of additional 2,871 MW. The average price in the second auction was 33.47 US dollars per MWh, 30 percent lower than the average price of the first auction. As reported by IEA (2016) the average cost of electricity in 2015 was almost 70 US dollars per MWh. With these contracts CFE is locking competitive prices for 15 years, starting in 2018.

subsidies. At the same time, even when CFE might be found impaired to compete because of internal inefficiencies of financial caps, CFE will represent a minimum performance benchmark for the rest of market participants. For the government and consumers in general this guarantees that private investment will improve the overall performance of the system, rather than simply capturing the economic rents that would accrue from modernizing the power system.

The idea that CFE and strong government intervention are essential for the good operation of the market has gained currency rapidly. It was not an obvious, or the only possible, outcome. It derived from experience in the use of regulatory segmentation that allowed the government to adopt policies that point in different directions, sacrificing coherence on the market reform paradigm for practical viability. The reform created safe spaces for investment both for private and for state-owned companies. This was the result not of transactional bargaining between the state, political actors and investors, but rather the result of the notion of market reform use as an all-encompassing concept serving to articulate what would apparently seem incoherent understanding of role of the state in economic activity.

State officials and private investors have learned about the functionality of state-owned enterprises as resilient —although not necessarily efficient— actors, able to mobilize investment in ways that the private sector would find much more difficult, in particular when challenges arise from the inadequate design of market rules or when there are not robust market conditions (as in the case of natural gas transport). Legal and institutional changes take a longer time to occur, and are less certain than the actions of a state-owned enterprise under the full control of the federal government.

One way to reframe the tension that seems to have been resolved in the Mexican reform process is through distinguishing external and internal regulatory making. In external regulatory making the subjects of regulation are private actors that reflect pure profit motives. External regulation is devised by governments, and especially independent collegiate bodies, like CRE. Internal regulatory making would correspond to the role that the government play in managing the behavior of the state owned enterprise and bodies like CENACE. Clearly, this would not be called regulation in the standard policy dialogue, but the state does chose to make use of its role as an asset owner to regulate the functioning of the market.

As a result of this morphed notion of the market, we can expect to see a new mode of articulating political demands regarding the cost of energy for households, the deployment of clean energy technologies and the role of power sector infrastructure within the larger framework of social infrastructure development. We have argued that, for now, the notion of the market has coalesced in what is practically a negotiated framework of market competition and reformed state management, which has adopted features designed specifically to foster private investment in generation. New policy decision will be formed with the participation of different types of stakeholders, old and new, associated to opened market segment and specific policy tools, for example, including new private suppliers lobbying to increase the share of their segment, new renewable energy developers under long-term auction contracts, and the old public opinion and state-level politicians regarding the level of tariffs and subsidies.

In the future, the government will not be less burden than before because of the preeminent role that the state maintained in conducting the evolution of the power sector. Under the new institutional synthesis, the government could likewise deflect public pressure through a narrative about the preeminence of market institutions, or actually adopt activist policies to steer investment

on different direction or increase state intervention under the same appeal to the importance of market institutions. Nowhere will this debate be more evident than in the future debates over the tariffs and the expansion of renewable energy.

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CONTACTO: programaenergia@colmex.mx SITIO WEB PROGRAMA DE ENERGÍA: <http://programaenergia.colmex.mx/>

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