



## Lao PDR Case Study: Électricité du Laos

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Électricité du Laos (EDL), the public electricity utility of the Lao People's Democratic Republic, has achieved remarkable institutional success over the past two decades, particularly in terms of the gains in rural electrification it has achieved in the country. EDL has distributed electricity to a steadily increasing proportion of the Lao population, with improving levels of service consistency and technical efficiency. Through the expansion of the electricity grid to remote areas and the poorest elements of the Lao population, EDL has built legitimacy for itself in the eyes of its clients and stakeholders across the country and, in turn, played an important part in building the legitimacy of the state. Its successes have, moreover, proven durable over almost four decades, across several changes in leadership and in the face of setbacks. EDL's mandate includes the essential business of electricity generation, a dimension that has provided essential financial and institutional resources to the Government of Lao PDR and has become even more crucial as the country has modernized.

This chapter examines how and why, in the otherwise challenging context of a low-income and relatively low-capacity country, EDL has been able to achieve these successes. It describes how the core underpinnings

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of this institutional success emerge in the three concentric circles constituting EDL's operating environment—the sociopolitical context in which it is positioned, its more immediate external operational relationships, and its internal institutional workings. This introduction provides some key highlights of the causal argument, with subsequent sections delivering more detail.

The sociopolitical context in which EDL is situated has enabled and laid the conditions for the agency's success (Barma and Robert Oksen chapter 4, this volume). EDL plays a unique, symbolic role in Lao PDR. It was formed before the Lao People's Revolutionary Party (LPRP) and, in the first decades after LPRP came to power in 1975, was a crucial source of revenue and foreign exchange for the government. EDL was accordingly granted a privileged status among the various organs of the new state. The Government of Lao PDR identified the electricity sector as a spearhead and crucial mechanism of socialist modernization—viewing it as essential to enabling heavy industrialization and rural livelihoods.<sup>1</sup> In addition to these economic goals, the power sector has played a major sociopolitical role, serving the government and LPRP as a crucial nation-building mechanism by physically binding together the nation with a geographically expanding electricity grid.

Likewise, the state-building function served by EDL has been crucial. For many Lao citizens, their access to the electricity grid and their interaction with EDL employees serve as their primary, and sometimes sole, tangible connection to the state. EDL's rural electrification program continues to serve these nation- and state-building imperatives, as the government uses the lure of connection to the public electricity grid to encourage remote villages to resettle and form into clusters. More recently, Lao PDR has become increasingly poised to take its place in the regional economy as the “battery of Southeast Asia,” based on its tremendous hydropower potential. The electricity sector has thus taken on even more significance, with EDL at the helm of the government's work in this area. Electricity thus continues to be an important symbol of Lao PDR's economic development and national identity, as well as an instrument for the achievement of these goals of modernity.

EDL has been adept at capitalizing on the crucial symbolic and practical roles assigned to the electricity sector. In turn, it has delivered important results for the Lao governing elite in terms of its goals of nation- and state-building as well as economic modernization. In the context of EDL's priority status, its leaders have carved out a sphere of operational independence for the agency in an otherwise tightly circumscribed and controlled governance environment, managing to insulate the agency from external

governance pressures in part by making the services it delivers invaluable to LPRP leadership. This relative operational autonomy has enabled EDL to pursue internal management strategies that are singularly focused on achieving ambitious and ever-expanding service delivery mandates.

As a state-owned enterprise, EDL enjoys relative autonomy in the manner in which it recruits, compensates, and deploys staff. Remuneration levels are high, and EDL is able to attract the country's most highly skilled and motivated workers. The organizational ethic is one that emphasizes professionalism and technical excellence. Furthermore, although the company operates in a hierarchical, bureaucratic fashion that eclipses true flexibility further down the ranks, its management systems and organizational culture are such that those workers feel themselves valued members of the institution. Such practices range from a transparent annual performance bonus system to the utility's widely respected blue-shirt uniform for all staff, including management. EDL emphasizes technical efficiency in a manner that relies on constant data usage, using a service standards manual for field operatives, operating 24-hour service hotlines for all clients, and ensuring electricity losses are minimized. The utility's considerable financial and human resources are thus marshaled toward delivering public services in a manner that bolsters EDL's and the government's connection with the Lao people and builds state legitimacy in their eyes.

The manner in which EDL has operated vis-à-vis its external partners and context complements its management of its human and financial resources, further enabling it to achieve continued success. While leveraging its relative autonomy, EDL is nonetheless adept at managing its relationships with the various stakeholders that serve as its principals and implementation partners—including donors and small and medium enterprises in the power sector—and prioritizes a close connection with its clients. The Ministry of Energy and Mines (MEM) is responsible for overall strategy and policy making in the power sector. Yet, despite its de jure agent status, EDL has a wide operational scope in the electricity sector. MEM grants EDL a great deal of functional autonomy in practice; the relationship is smoothed by the revolving door for top officials between the two institutions. MEM is represented on EDL's board of directors, along with several other important principals, such as the Ministry of Finance (MOF), and the board serves as a consensus-building mechanism such that any internal divisions are not apparent outside the agency. EDL senior management is also well-positioned in the party hierarchy and able to represent the agency's best interests in the political arena. EDL has benefitted a great

deal from the government's consistent prioritization of, and long-term strategic vision for, the development of the power sector. In particular, the policy environment put in place to position Lao PDR in the regional energy market has been conducive to EDL's success, especially since the agency has been able to adapt itself well to evolving needs and objectives.

Related in part to the organizational narrative that it is providing a crucial public service, EDL has an exceptionally strong focus on the end users of electricity, including households, commercial and industrial entities, and government agencies. EDL's targets are framed in terms of the rate of rural household electrification, and its deconcentrated planning and implementation systems are structured in pursuit of those goals. Furthermore, EDL has successfully deployed development partner assistance while remaining in the driver's seat. An early vision of the role of the power sector in Lao PDR's development trajectory was developed by its first cohort of revolutionary leaders in the 1970s and has been used as a blueprint to guide sector development over the past four decades. Subsequently, however, the contemporary power sector strategy was developed in the early 1990s in concert with donors' institutional development programs after the country embarked on economic and administrative reforms. The government has managed donor involvement accordingly, relying on multilateral development banks for assistance with infrastructure development and the rural electrification program (the Asian Development Bank in the north of the country and the World Bank in the south) and on bilateral donors, including the Soviet Union and France, for policy guidance and technical assistance.

### **Institutional Success**

EDL was founded in 1961, before the formation of the Lao PDR in 1975. It is the state-owned public utility that manages Lao PDR's electricity generation, transmission, and distribution assets across the country, as well as the import and export of electricity with neighboring countries. The EDL Decree of 1986 established EDL as a national company, requiring the progressive integration of what had been provincial public utility companies under the supervision and leadership of EDL Vientiane. EDL is officially under the management of the Ministry of Energy and Mines, which sets sector policy; in practice, EDL has a great deal of operational autonomy in terms of planning and implementing its service delivery mandate. This case study of successful institution building focuses on EDL's electricity distribution, or electrification, function, which constitutes its major public service

and developmental role, rather than its power generation business, which is more commercially oriented.<sup>2</sup> EDL has demonstrated success across the three criteria of results, legitimacy, and resilience, as is reflected in objective measures and interviewee responses.

### *Results*

EDL has achieved several tangible successes in terms of its major objective of expanding reliable access to electricity throughout the country. First and foremost is the remarkable growth in the country's electrification rates through extension of the electricity grid and household connections to it, especially across rural areas. The Lao government and EDL have emphasized distributing electricity to rural areas for more than 20 years, setting target electrification ratios over time and coordinating donor support to achieve improvements in rural access to electricity. In 1995 the Minister of Energy and Mines declared electrification targets of 70 percent by 2010 and 90 percent by 2020. EDL has steadily worked toward achieving these targets and, as a result of this concerted effort, Lao PDR's electrification ratio has increased an average 4 percent annually since 1995. Over 15 years, the number of household connections more than quadrupled from about 120,000 households (15 percent) in 1995 to more than 700,000 households (almost 70 percent) in 2009 (World Bank 2012). Access to electricity increased especially rapidly in the latter part of the past decade, with the ratio of households connected to the EDL grid climbing from 45 percent in 2005 to 72 percent in 2010. Currently, over 80 percent of households have access to electricity (including off-grid solutions) and the government is well on the way to meeting its 90 percent target (see table 5.1). Remarkably, Lao PDR has achieved its electrification ratio at a relatively low level of per capita income and at a more rapid pace of implementation in comparison with other countries that have also carried out successful electrification programs (World Bank 2012, vii).

**Table 5.1. Household Electrification Ratio, 1995–2010**

*Percentage of all households*

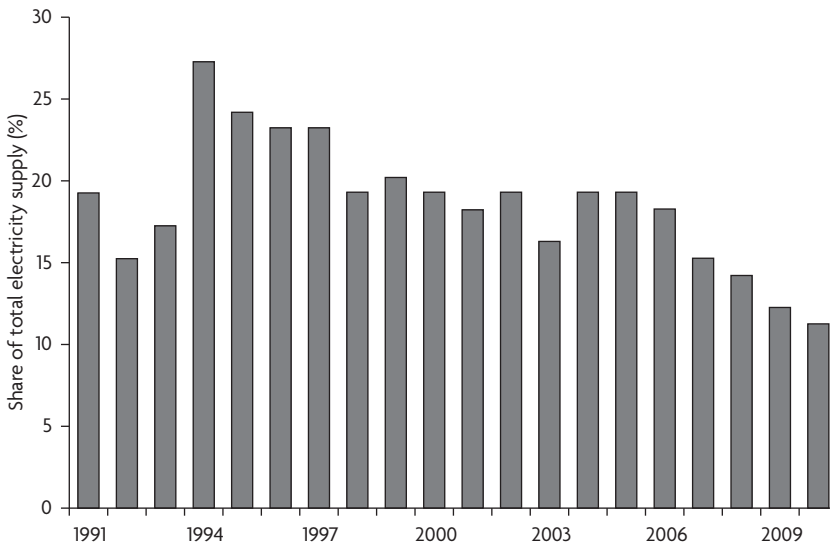
	1995	2000	2005	2010
Electrification ratio (households with access to EDL system)	12	33	46	73
Electrification ratio (households with access to any system)	15	36	48	80

*Source:* Robert Oksen (2012), derived from MEM Statistical Yearbooks.

Most recently, in support of the goal of 90 percent electrification by 2020, EDL has implemented the Power to the Poor (P2P) Program in partnership with donors. P2P is intended to provide access to the poorest households that have remained off the grid because they cannot afford grid connection fees. The program provides an interest-free credit to poor households for the connection fee (averaging 700,000–850,000 kip), which the households then pay back to EDL in small installments as part of their monthly electricity bill over three years.<sup>3</sup> The monthly payments are roughly equivalent to what poor households would be spending monthly on inferior energy sources, such as batteries or diesel lamps.

In addition to improving the nation's electrification ratio, EDL has also improved the quality of the electricity supply. It has managed to reduce its technical losses over the past 20 years (figure 5.1) through improvements in the utility's technical capacity and knowledge. Households and corporate clients agree that the reliability and quality of the electricity supplied to clients has improved, with the frequency of blackouts decreasing and EDL being able to restore interrupted power supply more quickly. Many clients noted satisfaction with EDL's service responsiveness (especially its 24-hour service hotline) and the professionalism of the billing and service staff.

**Figure 5.1. Historical Records of EDL Losses, 1991–2010**



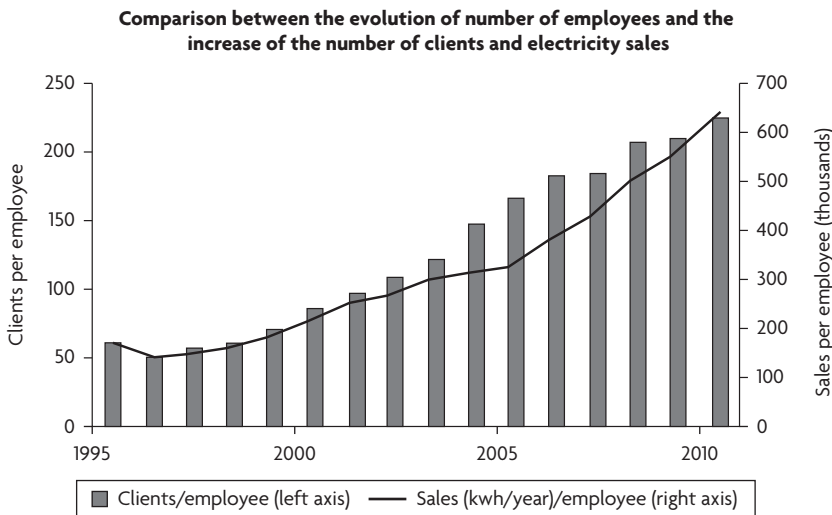
Source: Robert Oksen (2012), derived from EDL Annual Reports.

Some clients noted, however, that voltage drops during peak periods are common in the villages and power shortages are still a problem.

EDL has grown, almost doubling the employee roll from 1,983 to 3,522 over the past 15 years. And it has increased the efficiency with which it provides electricity services, with the number of clients per employee and the electricity sales per employee increasing fourfold over 15 years (figure 5.2). As it has achieved these results, EDL has moved toward adopting international standards for a public electricity utility—for example, recently being granted ISO certification 9001 in recognition of the “International Standard Quality Management Systems” of EDL and its general efforts in aligning with international practices.

EDL has also demonstrated results in terms of its generation capacity, playing a crucial role in increasing Lao PDR’s electricity generation by an average of 3 percent per year since the early 1990s.<sup>4</sup> Because of the significant and steady increase in domestic electricity consumption (which increased by a factor of 14 over those 20 years), EDL’s electricity exports have fallen an average of 3 percent and Lao PDR’s electricity imports have increased to reach 45 percent of domestic electricity consumption. The import of electricity is a sensitive issue in Lao PDR, since there are varying views even within government on the relative merits of EDL continuing to export electricity versus ensuring the country’s power self-sufficiency.

**Figure 5.2. EDL Efficiency Gains, 1995–2010**



Source: Robert Oksen (2012), derived from EDL Annual Reports.

Power imports are, in part, a geographical necessity. The power transmission lines from the country's main generation plants are oriented toward export to neighboring countries, and electricity must be imported into other regions of the country. There are also advantages to an export orientation: it brings benefits, such as foreign investment, technical assistance, skills, and technology that have assisted EDL in its goal of becoming a state-of-the-art electricity company. EDL's mandate has always incorporated electricity generation but donor recommendations in the early 1990s, as well as the regional power sector context, contributed to the dissociation of electricity generation and distribution, along with an overall trend toward the privatization of power generation in Lao PDR. While EDL remains the main agency charged with the rural electrification mandate, the responsibility for power generation and export is shared among other power sectors stakeholders, such as the Lao Holding State Enterprise, MEM, and independent power producers that are typically joint ventures between Lao and other regional interests.

### *Legitimacy*

By increasing the Lao population's access to electricity, EDL plays a crucial role in serving the government's overall socioeconomic development objectives. In turn, EDL enjoys a high degree of legitimacy in the eyes of the population and contributes to building the overall legitimacy of the state. For many Lao people, access to the public electricity grid is one, if not the only, tangible way in which they interface with the state. In turn, their interactions with EDL employees on grid connection, billing, and service calls are a major aspect of how they experience the state in their lives. EDL benefits from a certain aura in the eyes of the population, delivering as it does the essential public service of electricity. Users typically perceive EDL as "a company serving the development of the nation" and as "a service provider."<sup>5</sup> A large measure of EDL's legitimacy arises from its particular mandate to fulfill the government's pledge of electricity access to all villages. Delivering on this mandate is enabled by unique operational factors, such as EDL's monopoly in service provision as well as the public subsidies that maintain low electricity prices and facilitate household connections to the grid even in remote areas.

The level of public trust in EDL is relatively high. A majority of electricity users in focus groups report their overall level of trust in EDL as *medium* and evaluate the institution's technical capacities and equity in service delivery as *trustworthy*. One area of lower trust is in EDL's ability



to supply stable and high-quality power. The results on trust are corroborated by levels of reported client satisfaction. A majority of users rate EDL services and communication as highly satisfactory; but five focus groups of twelve rated their satisfaction as medium-low, demanding a higher-quality power supply even as they recognized that capacity was being stretched because of new users.

### *Resilience*

EDL predates the formation of the Lao PDR and it has been adept at navigating and adapting to sociopolitical changes, macroeconomic and institutional reforms, and even financial crisis. Throughout its more than 50-year history, it has been recognized by the Lao people as an important service provider and by the government as a crucial symbol of modernization and vehicle for economic development. Its role as a central revenue source for government, through the generation of hydropower, has contributed to its durable institutional success.

EDL has been headed by several managing directors over time and handled leadership transitions well. Top management at EDL typically rises through the organization's ranks and provides important continuity. In addition, the revolving door in top management between EDL and MEM along with EDL's board structure, comprising representatives from all major ministries, contributes to its sustained role as a major, well-resourced state agency that provides an essential public service in close coordination with other government entities.

EDL has also survived a recent crisis, albeit with the financial intervention of the government. Between 1997 and 2001, EDL's financial performance was significantly affected by the depreciation of the kip (a result of the Asian Financial Crisis) because the company was borrowing almost all its debt in foreign currency. The International Monetary Fund's structural adjustment evaluation underlined that EDL had generated nonperforming loans to such an extent that its restructuring was unavoidable. In essence, MOF "recapitalized" EDL to prevent its bankruptcy. The government signed a financial recovery program that committed EDL to restoring its financial viability and improving its capacity to generate funds to meet future investment needs. EDL also signed a performance contract with two key principals, MOF and the Ministry of Industry and Handicraft (MEM's precursor). The contract established targets for EDL's technical, commercial, and financial performance; reorganized the utility into profit centers; and instituted formal audit practices and accountability mechanisms

(Government of Lao PDR 2001). These reforms subsequently positioned EDL to recover its operational successes.

### **Institutional Sociopolitical Context: Electricity as a Leading Edge of Modernization**

The power sector has consistently been strategically emphasized as an important symbol, major priority, and crucial tool of the Lao socialist modernization and development trajectory. Current development of the hydropower sector still follows components of the Mekong Committee's development projects in the 1950s as well as a national assessment first completed in the 1960s (Robert Oksen 2009). The power sector was seen as central to the country's push to industrialize and to take its geographic place as a crossroads for trade. EDL, which was formed in 1961 well before the LPRP came to power, serves as an important symbolic role in the country's modernization. Furthermore, in the first decades after the declaration of the Lao PDR in 1975, EDL was a central source of revenue and foreign exchange for the government, which faced acute current account and budget deficits, and was granted a privileged status accordingly. EDL, in turn, has benefitted from its state-granted monopoly over the production and supply of electricity. It has taken advantage of the opportunities offered by economic reform and increasing regional interconnectedness, in particular through building a cohort of skilled managers and engineers who rely on their international network to focus the EDL mission on professional standards.

#### *Governing Elites and the Power Sector*

EDL was established as a state-owned enterprise in 1961 in the context of a broader vision placing the power sector as central to Southeast Asia's push to industrialize and identifying Lao PDR, with its rich hydropower potential, as a key electricity supplier for the region. EDL thus received the early support of nations from both Cold War blocs to install the first Lao power plants and to develop the power transmission network. During its early years, EDL was a microcosm of wider political rivalries (Robert Oksen 2009). For example, although the utility's director was a core member of the neutralist faction of the Royal Lao government, EDL managers and technical staff formed a labor union supporting the revolutionary Pathet Lao. This period endowed EDL with a pool of skilled engineers and

managers, educated in the colonial era and through key power development projects (mainly the Nam Ngum Dam). These skilled EDL engineers earned the trust of the leaders of the LPRP as a result of their support during the revolution. The engineers also offered the country's new political elite the crucial technical and administrative skills necessary to deliver electricity and the financial resources that came with the country's early investment in the power sector (Robert Oksen 2009).

EDL was, crucially, able to generate revenue and foreign exchange for the government until the late 1980s. It was thus essential in helping the new LPRP regime to establish its legitimacy and ability to govern and was granted a privileged status accordingly. In addition, electricity has served LPRP and the Government of Lao PDR as a nation-building mechanism, physically binding together what has been in its contemporary history a regionally, ethnically, and geographically fractured country (Barma and Robert Oksen chapter 4, this volume). The rural electrification program continues to serve this nation-building imperative, encouraging village clusters to form to take advantage of power infrastructure and speeding the relocation of remote villagers in mountainous areas (where many tribal and ethnic minorities continue to live) to more densely populated areas in the lowlands.

Furthermore, the power sector was envisioned by the revolutionary leadership as a tool for development, providing electricity supply to households and enterprises; and it was seen as a core industry itself, driving and representing Lao developmental achievements. The original LPRP leadership recognized relatively early that growth and development would be central to their legitimacy and the long-term stability of the country under their rule. A common refrain today is that Lao PDR wants to be like its Association of Southeast Asian Nations (ASEAN) neighbors in terms of economic development and social modernization. Electricity continues to be used as both a symbol of this development and a crucial vehicle for its achievement. In addition, the delivery of pro-poor public services such as electricity is a central element of LPRP's strategy for retaining popular support and solidarity with the Party. EDL itself was embedded in an integrated vision of sector development in the earliest days of the Lao PDR (Robert Oksen 2009, 2012; Larsen 2001). It has, in turn, benefitted from its state-granted monopoly over the production and supply of electricity, notwithstanding the structural reforms toward privatization of the electricity market since the mid-1990s. In addition, the government has resourced the sector, in financial and human terms, in line with its importance.

*Reform and New Opportunities*

An important turning point in Lao PDR's development trajectory was the government's 1986 decision to embark on the New Economic Mechanism (NEM), a program of market-oriented economic reforms accompanied by significant administrative reforms (Barma and Robert Oksen chapter 4, this volume). Several interviewees identified this reform program as central to the subsequent success of the power sector—not least because it was under this set of reforms that state enterprises, including EDL, were granted operational autonomy and market accountability. In addition to providing greater autonomy to EDL in terms of its management, this reform opened the way for skilled engineers and managers educated abroad to reintegrate into the company. These reforms, in turn, made it possible for EDL to enter the regional electricity market as a supplier of affordable hydropower (Robert Oksen 2009).

The EDL Decree promulgated with the 1986 NEM reforms aimed to rebuild EDL as a national company, requiring the progressive integration of the provincial public utility companies under the supervision and leadership of EDL Vientiane (Robert Oksen 2012). This centralization process illustrates many of the core underpinnings of EDL's continued success. The policy proved difficult to implement at first but became easier from the 1990s onward, as provincial power systems (beginning with Luang Prabang) were connected to the central (Nam Ngum) grid. The support of development partners in transmission and distribution projects was essential in the centralization of the various existing electricity systems.

A new generation of power sector managers was trained in the first crop of international, independent power projects in Lao PDR, such as Nam Ngum, Xeset, Houay Ho, and Theun Hinboun. The leadership of this cohort was crucial in integrating and managing the new national company. They facilitated the process of centralization and the standardization of procedures in the new, national, state-owned enterprise (SOE) through effective delegation of their authority to an increased number of deputies across technical departments, with an emphasis on professional standards. This deconcentration of implementation capacity—whereby departments, branches, offices, and projects were responsible for day-to-day tasks—also contributed to EDL's increasing reach and ability to deliver services to local communities.

Structural adjustment triggers in the 1980s, as well as the regional trend toward privatization of the electricity sector in the 1990s, pursued

an emphasis on increasing transparency in the financial relationships between SOEs, including EDL, and the government. In turn, these reforms improved the operating efficiency and financial footing of many SOEs and put them on a gradual path toward increased commercialization. EDL was no exception and was reorganized as a commercial enterprise in the late 1990s, with the introduction of a board of directors and a managing director. This major structural change coincided with the increased influence of a newer generation of managers, many professionally trained by, and networked into, projects funded by international investors and development partners.<sup>6</sup>

More recently, the government's emphasis on the power sector has continued with a slightly different cast, as Lao PDR is becoming more deeply integrated into the Mekong subregion. Electricity remains central to developing the country's trade connections, in particular with Thailand, Vietnam, and China, which in turn have delivered large financial flows and numerous advantages in terms of economic development. This is evidenced by the impressive growth of the provinces most closely connected economically with neighboring countries, especially Champassak and Phongsaly. Representatives of the power sector expressed a conscious pride in their role in facilitating economic livelihoods and trade, powering other sectors, and being a key to economic development. Furthermore, Lao PDR has become increasingly poised to take its place as the "battery of Southeast Asia," based on its tremendous hydropower potential. The electricity sector has taken on even more significance, especially as large international power producers have struck major power deals with the government, supported by development partners (such as the Nam Theun II hydropower project).

EDL has demonstrated over more than five decades the ability to retain its core mandates and position as a leading edge of Lao socioeconomic development and modernization. To that effect, the capacity to adapt its organizational structure to its sociopolitical context as well as proactive responses to emerging opportunities have been essential. Moreover, it has protected itself from demands for state-owned enterprise reform as the Lao economy has become increasingly marketized and globally connected. This adaptiveness is a hallmark of the institution's durability and resilience. Its institutional success in terms of delivering results and earning legitimacy rest on two sets of core underpinnings. One is a high degree of operational autonomy that enables an emphasis on technical and practical choices geared toward achieving its service delivery targets.

The other is the astute management of its connections with Lao stakeholders, EDL's end-user clients, and its implementation and development partners. The next two sections discuss each of these sets of causal explanations of success in turn.

### **Results through Operational Autonomy**

Électricité du Laos has built its institutional success by capitalizing on its priority sector status and resourcing privileges to carve out a high degree of operational autonomy for itself. In turn, it has channeled this autonomy into a focus on achieving its service delivery mandate through astute management. It has pursued strategic and balanced sector planning in the context of the broader socialist planning system; cultivated a strong corporate and professional identity along with a service-oriented work ethic and organizational culture; built a reliance on data and cutting-edge technical standards to aid organizational performance; and emphasized professional and technical standards through relative autonomy in and attention to personnel management. In turn, its cumulative success in delivering various forms of results for the Lao political elite has garnered the agency even more operational autonomy over time.

#### *Sector Prioritization and Planning*

The overall stability of the Lao governing regime, along with the sustained emphasis it has placed over time on the power sector and rural electrification, were identified across the board as core contributors to EDL's success. The government's prioritization of the power sector and its clear and consistent policies for the sector are signaled by the steady support (financial and nonfinancial) provided to EDL and by the important position the agency occupies within the power structure of government. In turn, EDL's success in delivering electricity throughout the country has contributed to the government's cumulative legitimacy. EDL's success has thus been built on the layered combination of political resolve to provide national electrification as a public good, clear targets for electricity access, the necessary policy and financial commitment to achieve the goals set, and the establishment of positive and long-standing relationships with regional power sector stakeholders and international donors (World Bank 2012, 7).

The power sector's priority status is not necessarily reflected in direct resourcing by the government. Since 2000, government spending on the

combined mining and power sector has been between 1 percent and 5 percent of total public expenditures.<sup>7</sup> The government contributed more direct funds to EDL in the 1990s—including a great deal of public investment in the power sector and loans from development partners to build high-capacity transmission lines. Today, EDL can and does turn to commercial sources of funding, especially for hydropower generation and transmission. The rural electrification program, however, remains publicly funded and is reliant on the support of donors.<sup>8</sup>

The government's nonfinancial support of EDL, by contrast, has been consistent and essential. From a policy environment perspective, the government has acted to protect the company from demands for structural changes and to create favorable conditions for the nascent electricity market. In particular, government policy was crucial in creating the favorable conditions for foreign direct investment and the technological transfers that came with it. Massive investments were required for Lao PDR to become the “Battery of Asia” that neither the government nor EDL itself, on the basis of its own revenue stream in a limited market, could afford. Sector reforms in the 1990s focused on the privatization of power generation with the proclamation of the Electricity Law (1997) and the amended Investment Law (1994), which endorsed the build-own-operate-and-transfer model for independent power producers. The government maintained its participation in the new hydropower plants through EDL. Several interviewees noted that the government views the energy sector as serving as a demonstration effect for international investors, showing that it is not too risky to invest in the country.

The National Socio-Economic Development Plan, the government's five-year planning system, and the annual planning mechanisms are crucial in terms of overall sector strategy, resourcing, and operational targets for any government agency. The annual planning process is facilitated by the Ministry of Planning and Investment. The process begins bottom-up, with needs articulated at the district level, collated at the provincial level with the supervision of the provincial governor's office, and passed up the vertical line to the agency in question. Prioritization takes place at the top level, with discussions over strategy conducted at the highest level of government. Resources are then allocated through the ministries to the provincial and district levels. As an SOE, EDL's interests in the planning system are represented by its principals, MOF and MEM, which directly allocate resources to EDL headquarters. EDL is then responsible for resourcing each of its branches according to their plans. De jure, nothing can be implemented

without being incorporated into the plan; de facto, this means that the plan is amended throughout implementation to incorporate new projects that are developed when new sources of funding emerge. For example, if a village raises funding for a grid connection in collaboration with a private sector provider, permission to establish the connection must be granted at EDL headquarters and reported in the revised provincial-level plan.

A problematic aspect of the centralized planning process is that although, in theory, inter-ministry coordination is supposed to occur bottom-up through the local development plan, in practice there is little coordination at the provincial level between the technical staff or even the middle management of various government agencies. A core advantage of the planning system, nevertheless, is that EDL's annual operational targets are extremely clear, and the organization can and does work toward them in a focused manner. Furthermore, the lack of inter-ministry coordination and of human and financial resources at the local level has created space for EDL to progressively gain autonomy in its management. Committed to achieving the overall sector targets as defined by the party and the state administration, EDL relies on a data-based system to define priority areas of intervention. For example, the rural electrification planning process has become a multiyear expansion plan running alongside the broader plan system: "It takes into account the financial and economic viability of every investment and incorporates a project selection methodology that prioritizes areas and villages to be electrified to maximize social impact, within the constraints of available resources." (World Bank 2012, 10)

### *Data-Based Organizational Performance and Cutting-Edge Standards*

EDL maintains a thorough data collection and analysis system, with operational decisions made on the basis of these relatively sophisticated tools. In other words, the agency practices evidence-based decision making and emphasizes the institutionalization of systematic tools for effective management. This behavior is illustrated by Champassak province's success in addressing its electricity losses, which fell from 26 percent in 2006 (then the highest level of provincial losses by far) to 5 percent in 2011 (the lowest level of losses by far). The root of this dramatic success in dealing with the technical problem was a concerted strategy implemented throughout the EDL hierarchy in the province. Data analysis revealed that sources of electricity losses were faulty conductors and equipment, inadequate switching stations, and stealing of electricity through unauthorized connections to the grid. A meeting of all district branches within the province was held to



discuss these reasons and elaborate on a strategy for addressing them. The necessary equipment was purchased from neighboring countries; a training manual was developed for service-unit technical staff to assist them with equipment maintenance; and a new system of checking client usage against billing records was established. Moreover, implementation of the strategy was concerted—district branches drew up their own plans of action, the management team at the branch office handled prioritization and supervision of the strategy, and EDL headquarters assisted as necessary with training.<sup>9</sup>

Other signs of a data-enabled focus on performance exist. EDL frontline service providers work with a service manual, with precise instructions on steps to take for conducting assessments, equipment installation, maintenance, and so forth, as well as a protocol for when decisions need to be elevated up the chain or when assistance is required. EDL also functions on the basis of service standards and maintains detailed logs of all service calls, recording the request, the action taken, and the response time. At headquarters, data records are everywhere in evidence and by all accounts thoroughly used to improve the organization's technical efficiency and service standards. Whether EDL is a “learning” organization is a bit more difficult to say. A true learning organization would likely be more flexible in adapting to incoming information than EDL, which does seem to have relatively rigid, albeit efficient, channels for response.

Several senior officials at EDL and MEM observed that the nature of the power sector—more specifically, the need to be competitive in order to attract international investment—simply demands cutting-edge technology and an emphasis on standards. As a result, EDL is at the vanguard of technology, including administrative techniques, within government. Interviewees pointed out that this emphasis on standards includes the imperative for staff to be up-to-date in their education. The fact that EDL was recently granted ISO certification 9001 in recognition of its “International Standard Quality Management Systems” demonstrates that EDL emphasizes and has moved toward international standards for a public electricity utility.

The efficiency and financial sustainability of EDL operations are key motivating factors, as indicated by the strong commitment to reducing technical losses and improving bill collection and recovering arrears. Individual performance is measured in addition to that of the organization through a personnel performance evaluation system. On that basis, EDL also has a performance-based incentive system where work teams

are financially rewarded if they reach their targets and individuals receive annual bonuses on the basis of performance. Weekly meetings are organized at the district branch level to monitor the achievements of front line staff, and monthly meetings are held between managers at the provincial branch to report challenges and discuss performance.

### *Corporate Identity and Service-Oriented Organizational Culture*

EDL exhibits a strong corporate identity.<sup>10</sup> The utility's employees, all the way up to the managerial ranks, wear a distinctive blue shirt uniform, which is reported to bring instant respect and status for EDL employees in the field. Professionals in the organization, as well as across the energy sector, share training backgrounds and a strong professional identity as power sector engineers, which contributes to an organizational mystique and sense of belonging. EDL emphasizes the importance of skilled professionals with formal engineering training and, from its founding, served as an incubator of Lao capacity and technical knowledge in the power sector. Today's senior officials in EDL and MEM's Department of Electricity (DOE) come from an original cohort of engineers trained in the Soviet Union and Eastern Europe that was later joined by engineers trained in Japan and Western Europe. In addition, many current EDL and MEM managers come from the cohort that worked on the Nam Ngum Hydropower Project, the first major power generation project in Lao PDR. Some members of these engineering cohorts are now on the private industry side, and DOE officials observed that their continuing professional association with their colleagues was an important source of new, innovative engineering systems and principles of competition and efficiency.

The organization is imbued with a shared sense of purpose that is well-understood and absorbed throughout the hierarchy. EDL does not appear to have a clearly articulated mandate in a typical form, but employees quite far down the ranks are able to recite the core goals and objectives of the organization and share a sense of pride and commitment to the mission—with a clear emphasis on accountability for collectively achieving results. In interviews, that mission was phrased as “delivering socioeconomic development,” “bringing civilization,” and “delivering the government's message in remote areas.” Staff across EDL pointed to rural electrification and grid extension as a core EDL goal, emphasizing the importance of “providing services to the client” and “supplying quality, affordable, and reliable power” for industrialization and modernization, as well as “exporting electricity to generate state revenues.”<sup>11</sup> To stimulate an esprit

de corps, EDL rewards staff performance and commitment through financial bonuses, promotions, and training, along with annual recreational events focused on team building.

EDL is a relatively centralized agency, with traditional, hierarchical implementation systems. Provincial and district units essentially function as frontline service delivery providers, responsible for implementing the precise plans established at the central level in concert with DOE. The district units are crucial, representing EDL at the local level and functioning as service centers. The district units work with clients to monitor payment and provide service (24-hour response), installation, and maintenance. Regular management meetings are held throughout the organization to ensure that goals are shared across the hierarchy, including weekly meetings of technical unit heads at the district level and monthly meetings of district unit heads at the provincial branch level. Provincial EDL branches are responsible for the implementation of electrification targets, improvements in customer service, and reduction of technical losses. Branch offices are empowered with the systems and management to achieve these tasks, along with a “highly professional and motivated staff, who take pride in their mission and mandate” (World Bank 2012, 10). The organizational structure thus reinforces the emphasis on accountability for results generated by the corporate culture.

### *Autonomy in Personnel Management*

EDL handles its own personnel management, as is its statutory right as a state-owned enterprise. It has developed a competitive and systematic recruitment process that includes centrally administered technical entrance exams, in-house and field-based training, and probation procedures for new hires. The Central Committee of the Lao People’s Revolutionary Party appears to be encouraging a general reorientation in the civil service and senior managerial ranks toward more technocratic, professionalized cadres. EDL has emphasized more meritocratic recruitment and career advancement for some time, and is often mentioned as a model for the public sector as a whole.

Interviewees at all levels expressed trust in the institution’s practice of career advancement on the basis of merit, with respondents confident that anyone can take their career to the management level.<sup>12</sup> Long-time Managing Director Khammany Inthirath (who was promoted to vice-minister of MEM in 2012) worked his way up through the organizational ranks from more junior field-based and management positions. More generally, the majority of senior staff is reported to have done grassroots

work, essential for “understanding people’s needs, and the organization’s roots.”<sup>13</sup> The institution deploys its staff with attention to local-level cultural and linguistic issues. In particular, native-language speakers are used in remote, tribal, and ethnic areas—and typically district and provincial branches—are staffed with individuals from those localities. EDL employees have access to continued support in terms of education, training, and capacity building and, as with all other government employees, EDL staff receive political training, organized by provincial and district MEM units.

EDL maintains a salary scale different from that of the Lao civil service, with higher salaries for all ranks of employees, although EDL remains within the government system. In practice, this means that EDL employees are among the best-paid workers in Lao PDR, and jobs in the company are extremely sought after.<sup>14</sup> This relatively high level of remuneration is seen as central to attracting and motivating top-quality employees, as well as to building a sense of organizational pride and legitimacy in external eyes.

EDL has an annual performance bonus system that is handled at the provincial level, whereby all employees receive a one-time bonus of at least 50 percent of their monthly salary, and the top performers in the most successful provinces can receive a bonus of up to 200 percent of their monthly salary.<sup>15</sup> Human resource management is structured on the basis of team assignments to specific tasks, within the context of the hierarchical organization. Each head of department, branch, office, and project is responsible for implementing strategy by supervising and allocating tasks and resources to teams. Individual motivation on the basis of performance bonuses is important; but team work, solidarity, and equality are core values in the organization.

### **Mandate Implementation through Partnerships**

Although EDL has created and benefited from a high degree of operational autonomy, it has also prioritized its relationships with clients, implementation partners, and stakeholders in building its successes. It has carefully managed its relationships with its principals and peers in government, placed a singular operational emphasis on concerted attention to client needs and levels of satisfaction, and built coordinated service delivery partnerships with donors and the private sector.

### *Relationships with Government Stakeholders*

EDL is officially under MEM management, yet in practice it has a great deal of operational autonomy. Many interviewees pointed to a functional working relationship between EDL and MEM as the sine qua non of EDL's success. The Minister of Energy and Mines himself employed a telling analogy in describing the relationship, noting that he held a string connecting EDL to the ministry but that he gave that string a great deal of slack, empowering EDL to manage itself in delivering on its mandate.<sup>16</sup>

EDL must cooperate closely with MEM's Department of Energy for all aspects of its operation; this relationship is delicate but not contentious. DOE was established as part of institutional reforms in the power sector in the late 1990s, staffed and managed by Lao engineers who had returned from overseas training.<sup>17</sup> One particular DOE division was assigned responsibility for rural off-grid electrification, marking the significance of this part of the mandate. DOE takes on key strategic roles related to the power sector—overall sector policy, planning, and regulation; coordinating with donors; and communicating sector strategy to the government and national assembly. Senior DOE officials noted that this enables EDL to focus exclusively on the quality and efficiency of day-to-day operations and service delivery without needing to worry about long-run strategy. Thus, although EDL does not have policy autonomy and is in this respect an agent of MEM, it has successfully maneuvered for itself a great deal of scope in terms of operational autonomy.

Close cooperation between EDL and DOE has been facilitated by transfers of senior officials between the two agencies. For example, the DOE director-general at the time of research was a member of EDL's board of directors and had previously been EDL's managing director. EDL's board has also been an important mechanism of close interagency collaboration, with the current board comprising senior officials from MEM and the Ministry of Finance. A strategic approach to overall staffing across the power sector also emerges because each of these senior individuals, as is typical across government, is nominated by the prime minister and vetted by the Party's Central Committee.

A senior DOE official remarked that the power sector needs an “interpreter” to talk to politicians, a function the minister serves well because he knows the technical and political contexts. This communication is especially important because there is sometimes a tension between the interests of DOE and those of the party as represented in the higher government

ranks. Party officials, for example, are typically more interested in energy self-sufficiency, and do not understand the practice of exporting electricity from some locations and importing it at higher rates from others. The minister is thus a crucial champion of EDL in the broader government. EDL and MEM are headed by individuals who are increasingly senior members of the party's Central Committee, a reflection of their individual success as well as the significance placed by the party on the power sector.<sup>18</sup> Observers noted that leaders in the sector have been adept, over time, at building just the right degree of momentum for innovation and reform without running into political constraints. This ability is facilitated, in part, by the connections of power sector leaders to the technical network of the broader regional and international power sector. For example, retired EDL leaders have joined independent power producers as advisors while maintaining their ability to lobby in the Lao political arena, emphasizing their technical expertise and support from their external network to influence government decision making.

Staff revolves between EDL and MEM constantly, including at the uppermost echelons of management. MEM and EDL share one Party Secretariat, an important factor in a country in which the party exercises political and administrative control. Yet this close cooperation appears to break down somewhat below the central levels. Several power sector stakeholders expressed the sense that coordination between EDL and DOE is weak at the provincial and district levels. For example, the two agencies sometimes have different lists or maps of which villages are electrified; and there are often delays (up to six months to a year) in when data transmitted to Vientiane by one agency are shared at higher levels with the other. Provincial-level EDL and MEM branches share political training through the horizontal connection to the provincial administration, but the management of EDL's provincial branches and district service centers is centralized under EDL headquarters. Provincial EDL units follow direction from this vertical line, which manifests as a high degree of EDL operational autonomy at the subnational level.

### *Client Connection*

Related in part to the organizational narrative that it is providing a crucial public service, EDL has an exceptionally strong focus on the end users of electricity, including households, commercial and industrial entities, and government agencies. The target of 90 percent electrification by 2020 is expressed in terms of households connected, which means in turn, that a

great deal of attention is paid to satisfying the energy needs of the population. The district branch of EDL serves as the crucial point of interface with the population, essentially functioning as a service center.<sup>19</sup> District branches represent EDL at the local level, conducting billing, carrying out maintenance of transmission lines, and working with clients on service requests, including installation and repairs. Each EDL district branch staffs a 24-hour service hotline, which focus group respondents pointed to as a crucial recent improvement in client responsiveness.

EDL pays particular attention to its relationships with its clients, ensuring that households understand the principles of its contracting system. Staff often mentioned the time dedicated to explaining to clients matters such as billing details and how to save energy. EDL employs an interesting billing model at the village level, outsourcing the collection of household payments to local people, such as students or villagers, who get paid 1,500 kip per bill collected. This has enhanced payment levels and would seem to represent an important mechanism through which EDL ensures sensitivity to local cultural practices and language in its client relationships.

Two aspects of the Lao electricity tariff structure are of particular note (see table 5.2, which breaks down the major categories of electricity users and illustrates how tariffs have evolved in recent years). First, residential electricity is heavily subsidized by the government, with the poorest households (consuming the least electricity) subsidized the most; and irrigation, an important service for subsistence agriculture, is also heavily subsidized.<sup>20</sup> In practice, the poorest consumers of electricity in Lao PDR have been subsidized by other customer segments (World Bank 2012, 19). Second, during 2005–10, electricity tariffs remained relatively stable (with only the heaviest subsidies being reduced slightly), even as the Lao hydropower sector began to take off. This will likely change since, under the planned gradual tariff adjustment process, most customers will be paying tariffs that exceed the marginal cost of supply (World Bank 2012, 19).

Although EDL works with MEM to build strategic plans for grid roll-out based on viability studies, provincial governors and their administrations serve, in practice, as an intermediary for village households and hence represent an important group of principals that EDL must work with effectively. EDL's budget is allocated by headquarters, on a negotiated basis between MOF, MEM, and EDL, yet strategic decisions about geographic locations for grid extension, which EDL must then implement, are coordinated by MEM and the provincial governors' offices. EDL appears to play this agent role effectively, coordinating with provincial and district

**Table 5.2. Electricity Tariffs, 2005–10**

Electricity prices (Kip/kWh)	2005	2006	2007	2008	2009	2010
<i>Residential</i>						
0–25 kWh	114	132	152	177	203	269
26–150 kWh	265	273	281	293	301	320
> 150 kWh	765	765	765	773	773	773
<i>Embassies and international organizations</i>						
Low voltage	990	1066	1066	1077	1077	1077
<i>Entertainment businesses</i>						
Low voltage	1095	1095	1095	1106	1106	1106
<i>Agriculture and irrigation</i>						
Low voltage	295	310	325	345	362	399
Medium voltage	251	263	276	293	308	340
<i>Industry</i>						
Low voltage	636	627	618	616	607	591
Medium voltage	541	533	526	524	516	502
<i>Commercial businesses and services</i>						
Low voltage	826	826	826	835	835	835
Medium voltage	702	702	702	709	709	709
<i>Government offices</i>						
Low voltage	706	696	686	684	674	656
Medium voltage	600	592	583	581	573	557

Source: Robert Oksen (2012), derived from EDL Annual Reports, 2005–10.

administrations where necessary, but essentially retaining a focus on implementation rather than negotiating on strategy. EDL's relative autonomy notwithstanding, its provincial and district units sometimes work closely with local authorities to build good relationships with the client. EDL can rely on its financial resources as well as the company's aura to build good relationships with villages; at the same time, EDL relies on advice from local authorities to tailor service appropriately.

### *Implementation Partnerships with Donors and the Private Sector*

The Lao power sector, and EDL in particular, have benefited from early and sustained partnerships with donors. Many observers noted that donor commitment to rural electrification was a major factor in delivering successes in this area. The Asian Development Bank (ADB) and the World Bank initiated their project portfolios in the Lao power sector at the beginning of the 1980s. Aid to the power sector represented about 15 percent of total overseas development assistance to Lao PDR from the late 1990s to the mid-2000s and has since declined to about 6 percent.



The World Bank estimates the total cost of the rural grid extension rollout from 1987 to 2009 as costing about US\$600 million, about 75 percent of which was financed by concessionary loans and grants from multilateral and bilateral agencies and the balance predominantly from EDL's hydro-power export revenues (World Bank 2012, 15).

Until relatively recently, however, only a few international partners were engaged in the power sector and, in an interesting twist on donor harmonization, their contributions were geographically bounded and dedicated to specific objectives. The delimitation of donor support was largely based on the donors' regional and country strategies, but the Government of Lao PDR appears to have played a coordinating role as well. ADB has typically prioritized power generation projects for export, with a geographic focus on developing the Greater Mekong Subregion to the north. The World Bank has focused its support on building mechanisms for the efficiency and sustainability of EDL as well as more generally reforming the power sector. Hence, ADB primarily concentrated its interventions in the North, while the World Bank (along with the Swedish International Development Cooperation Agency) principally supported rural electrification in the South. De facto, then, aid was relatively coordinated and efficiently allocated in the sector in that there was little overlap between key donors. Smaller donors and international nongovernmental organizations have also been central in assisting EDL and DOE in expanding access to electricity, especially via off-grid and pico (small-scale) solutions, and thereby accelerating the pace of rural electrification. Of today's 70 percent national coverage, about 2.5 percent of households receive access through off-grid solutions.

Donor representatives concur that the government's ownership of power projects and energy sector strategy is high. In part, this has been maintained through continuity in staffing key donor counterparts on the Lao side. Since the party supervises the careers of senior officials, they can remain designated counterparts even when moving across positions in the sector (e.g., from MEM to EDL or vice versa). In addition, the government has demonstrated a long time horizon and strategic vision in defining and remaining committed to its core goals in the power sector. All government agencies attract investments and support in alignment with the strategic objectives defined by the party, and the government has demonstrated that it will delay reforms that are not in line with strategic goals. The Power Development Plans and the recent Rural Electrification Master Plan clearly demonstrate this coordinating vision in the sense that they are actually built as a list of potential projects. Nevertheless, projects at the local

level are sometimes competing and overlapping, even if the national-level coordination of development partners appears strong. The overlap is especially acute between EDL's grid extension projects, and the off-grid projects supported by DOE and local authorities, reflecting the relative lack of on-the-ground coordination and cooperation between these agencies.

EDL has been oriented toward electricity exports to Thailand since the 1980s, when approximately 75 percent of the country's hydropower production, mainly from the Nam Ngum plant, was being exported to Thailand. During this time, electricity exports made up more than 50 percent of Lao PDR's exports and served as crucial revenues for the government. In the 1990s, Thailand's sustained economic growth and increasing electricity consumption, particularly for industrial development, helped make Lao electricity exports even more successful (Robert Oksen 2012). Although electricity generation and export are beyond the scope of this study, it is crucial to note that the Thai power sector was privatized during this period, having a major demonstration effect on the structure of the Lao electricity sector and the operations of EDL itself.

The role of regional bilateral partners, especially the Chinese government, has become increasingly significant since the mid-2000s. There are no detailed records of this support, but interviewees reported, for example, that the Chinese government provides grants and soft loans to the power sector, principally for the expansion of transmission and distribution. In the specific area of hydropower project development, Chinese contractors are increasingly competing with Thai investors. The Chinese government has recently invested a great deal in EDL itself, assisting with the building of EDL's new headquarters building and, as did Thailand earlier, influencing the way in which EDL does business.

Thus, there appear to be isomorphic influences in the power sector, driven by the advice of development partners and market-oriented models and, more recently, by newly important regional bilateral donors, especially China. Lao PDR aims to position itself strategically in the regional energy market and, therefore, needs to align its policies, regulatory framework, and operations with international practice, especially on the generation and transmission side. One senior DOE official stated that the "nature of the industry pushed us to do things right from the beginning;" it was not necessarily that government officials and EDL managers were "so clever." Because important stakeholders in the sector—from Nordic partners, to Thailand, to China—have had such diverse practices, EDL's adoption of varied practices has also meant, interestingly, that there has

been continuous experimentation with organizational models in the sector.<sup>21</sup> Thus, the government has been able to test EDL's evolving structure against its development objectives, choosing to stick with practices that serve its developmental and political objectives and jettisoning those that are less aligned.

Private sector partners have also been crucial in the Lao power sector. Independent power producers (IPPs) play a dominant role in electricity generation and transmission and are crucial revenue sources for the state in terms of taxes, royalties, and dividends from the government share of concessions. IPPs have been central in setting financial as well as social and environmental standards in the sector.<sup>22</sup> In terms of the rural electrification side of EDL on which this chapter focuses, IPPs have played a crucial role in training a large proportion of EDL and MEM managers, many of whom began their careers in the power sector working on early IPP installations, such as Nam Ngum, Xeset, Houay Ho, and Theun Hinboun.

Small and medium enterprises (SMEs) have been more significant on the electricity distribution side, at least since the early 2000s. For example, a World Bank program encouraged the creation of small local companies to install solar home systems. These companies do not work directly with EDL but as contractors and implementing partners of DOE projects. DOE has an established pre-electrification strategy, in which connection to an off-grid system presents an opportunity to test villagers' ability to pay for electricity services before EDL invests in grid extension. In this sense, the public-private partnership between DOE and the SMEs in the sector supports EDL in achieving its mandate to increase access to electricity in remote areas.

In a relatively new aspect of electricity distribution prompted by the push to reach 90 percent electrification by 2020, provincial governments have begun contracting private companies to extend the grid to remote areas. Companies install and operate these systems for five years, at which time the infrastructure reverts to government ownership upon repayment of the investment along with a reasonable return. Although these partnerships represent increased participation of the private sector in power distribution, especially in remote rural areas, the electricity law states that all electrical systems shall be handed over and administered by the provincial government even if they were built by MEM. Moreover, although these partnerships have provided access to electricity in remote areas, SME development and expansion in the power sector has potentially been undermined by a bias—in terms of policy as well as in client preferences—in

favor of public grid extension and thereby access to subsidized electricity tariffs. In this respect, the state monopoly over the domestic production, transmission, and distribution of electricity is being preserved.

## Challenges

EDL's record in achieving results has enabled it to build institutional legitimacy. Yet, this may be challenged by the growing expectations of high-quality services, the meeting of which in turn rests on the company's ability to generate the resources necessary to meet the growing demand for electricity. Several senior managers and principals of the utility stated that the lack of self-sufficiency in power generation is constraining EDL's commercial development. The interviewees drew attention to the need to increase technical capacities in power generation. EDL's development plan for 2011–17 is thus strongly focused on increasing its generation capacity, at an estimated cost of US\$3.3 billion (Électricité du Laos 2010).

Over the course of its history, EDL has managed a complicated, bifurcated mandate—on the one hand, electrification (distribution); on the other hand, generation and transmission (or production and export), which also entails acting as the government representative for international power projects. A recent major institutional change for EDL was the separation in 2010 of its electricity distribution functions (retained in EDL) from its generation functions (now listed separately as EDL-GEN). Two interrelated reasons were mentioned to explain this split. One was the increasing commercialization of the utility and power sector management writ large and the government's (and key partners') desire for Lao PDR to position itself more astutely in the context of the evolving regional energy landscape and increasing demand for energy. The second reason was financial viability. A recurrent concern for the government and its development partners has been that the institution's debt has been a major challenge to the sustained commercialization of EDL. The split enabled the debt to be contained in one agency, with EDL-GEN then being poised to become a profitable commercial entity, albeit one that is still owned by the state.

Many are concerned that the split weakens the ability of EDL itself to deliver on rural electrification. Electricity tariffs do not cover the costs of electricity generation and supply to the country's rural areas. In the past, EDL was able to employ a cross-subsidy model with funds from generation to plow back into and subsidize electrification. The strategy was

encouraged by donors and international power purchasers. In other words, large hydro-generation projects for export that generate sizeable, predictable, and sustainable cash streams were the key to successful rural electrification over time, along with international development financing. Yet, this model worked best when electrification rates were low and there were easy-access distribution decisions to be made that did not hurt EDL's bottom-line profitability as much.<sup>23</sup> The final push on electrification is much more expensive at the margin—the average cost per grid connection almost doubled from about 4.2 million kip (US\$500) in 2005 to about 7.7 million kip (US\$900) in 2012—and more difficult for EDL to finance now that the split has occurred. Achieving the target of 90 percent household electricity access by 2020 will require at least a threefold increase in access provided by off-grid solutions and will be a central implementation challenge going forward.

## Conclusion

The power sector and hence EDL itself have been consistently prioritized and supported by LPRP and the government, as a spearhead and symbol of the Lao modernization and development trajectory. EDL has been adept at capitalizing on the crucial roles, symbolic and practical, assigned to the electricity sector. In turn, EDL has delivered important results for the Lao governing elite in terms of nation building and economic modernization goals. The significance of the power sector and the reigning model for its development and expansion have evolved over time—from a revolutionary-era blueprint to more donor- and private sector-oriented norms and practices—and EDL itself has transformed accordingly.

In the context of the agency's priority status, EDL leaders have carved out a sphere of operational independence for the agency in an otherwise tightly controlled governance environment, managing to insulate the agency from external governance pressures in part by making the services it delivers invaluable to elites. This relative operational autonomy has enabled EDL to make operational choices and pursue internal management strategies that are singularly focused on achieving ambitious and ever-expanding service delivery targets. The institution enjoys relative autonomy in the manner in which it recruits, compensates, and deploys staff, and it is imbued with an organizational philosophy that emphasizes corporate professionalism and

technical excellence. EDL thus marshals its financial and human resources to deliver the public service of electricity to the population in a manner that bolsters EDL's and the government's connection with the Lao people and builds state legitimacy in their eyes.

The astute manner in which EDL has operated vis-à-vis its Lao stakeholders, clients, and donor and private sector implementation partners complements its service-oriented organizational culture and structure, further enabling it to achieve continued success. Related in part to the organizational narrative that it is providing a crucial public service, EDL has an exceptionally strong focus on the end users of electricity. In achieving its electrification targets, the institution has successfully deployed development partner assistance while remaining in the driver's seat. Over time, EDL has experimented with diverse organizational models and practices, retaining those practices that serve its developmental and political objectives and jettisoning those that are less aligned.

## Notes

1. The other four sectors LPRP viewed as pillars of socialist modernization, to which all villages should have access, were roads, health, education, and water.
2. Although we do not examine the results of the EDL generation function, we do explore the role this mandate played in the power sector's early priority status.
3. For more details about P2P, see World Bank (2012, 20–26).
4. This is outside the explanatory scope of this chapter, which focuses on the electrification (distribution) side of EDL's business, but worth highlighting as part of this brief snapshot of EDL's success as an institution.
5. The quotes are from focus groups of EDL clients conducted on behalf of the study by Indochina Research Limited (Laos).
6. Robert Oksen (2012) notes that these new managers were still appointed by the party, signaling that the Party was gradually introducing more autonomy and commercial orientation in EDL's activities, as well as pushing to attract greater foreign investment through managers more conversant with regional and international power sector stakeholders.
7. A comprehensive record of government expenditures is only available from 2000/01 onward.
8. Program evaluations by development partners have consistently underlined the lack of transparency in the flow of funds between the government and EDL, providing additional justification for separating generation from transmission and distribution activities.

9. Group interview with leadership of the Champassak Province EDL office.
10. See also World Bank (2012, 9–10).
11. The quotes are from EDL and MEM officials and EDL frontline staff.
12. As with all other government agencies, promotion to managerial levels (deputy division head and above) is overseen by the Party.
13. EDL official.
14. Civil service compensation is on par with private sector pay in the country and additional benefits—pensions, health insurance, job stability, prestige—associated with government employment make it extremely attractive. See World Bank (2010).
15. By contrast, the provincial departments of MEM have certificates of appreciation for top performers but cannot afford financial rewards.
16. Interview with H.E. Mr. Soulivong Daravong, Minister of Energy and Mines, February 9, 2012.
17. DOE was established as the Hydropower Office in 1997 and reorganized later into today's Department of Electricity.
18. The relevant minister has, over time, always been in the top half of the Central Committee's ranks.
19. Interviews with EDL provincial and district branch officials, Champassak and Xekong provinces, February 2, 2012.
20. There is a significant difference between the average Lao electricity generation price (about 240 kip per kilowatt-hour) and the average price of electricity purchase from Thailand (about 560 kip per kilowatt-hour); the latter is the price at which 60 percent of domestic usage is provided. Subsidies for poorer households are not high in relation to the Lao generation price, but they are in terms of the import price.
21. Robert Oksen (2012) points out that these varied organizational models have come with diverse developmental visions for the sector (on the part of international stakeholders and Lao power sector players), which have competed with each other over time.
22. These IPPs are outside the scope of this report. They are nonpublic entities that own facilities to generate power for sale to the public utility (EDL) and other end users (e.g., the Electricity Generating Authority of Thailand). An important example (and an unusual one, because it is not wholly privately owned) is the Nam Theun Power Company, a joint-venture IPP that was granted the concession to build-operate-and-transfer the major Nam Theun 2 Hydropower Project. The project has served as a major driver of momentum in the Lao power sector because it formalized and standardized procedures for foreign direct investment, with development partners, including the World Bank and ADB, playing crucial roles in providing risk guarantees to investors and securing some measure of social and environmental responsibility through project safeguards.

23. This cross-subsidy model along with the challenges associated with the increasing marginal cost of grid expansion are described in more detail in World Bank (2012, ix, 8, 15–16, 30).

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