Blackout
An Assessment of the Electricity Sector in Afghanistan
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Acronyms

ADB  Asian Development Bank
AEAI  Advanced Engineering Associates International
ANDS  Afghanistan National Development Strategy
AOGRA  Afghanistan Oil and Gas Regulatory Authority
DABM  Da Afghanistan Bresnha Moassessa
DABS  Da Afghanistan Breshna Sherkat (Afghan power utility)
ERA  Electricity Regulatory Authority
IPP  Independent Power Producer
MEC  Independent Joint Anti-Corruption Monitoring and Evaluation Committee
MEW  Ministry of Energy and Water
MoEc  Ministry of Economy
MoF  Ministry of Finance
MoMP  Ministry of Mines and Petroleum
MRRD  Ministry of Rural Rehabilitation and Development
NEPS  North East Power System
NIEP  National Integrated Energy Policy
NPA  National Procurement Authority
O&M  Operation and Maintenance
PPP  Public–Private Partnership
PSMP  Power Sector Master Plan
PTEC  Power Transmission Expansion and Connectivity
RoW  Right of Way
SEPS  South East Power System
SIGAR  Special Inspector General for Afghanistan Reconstruction
UNDP  United Nations Development Program
USAID  United States Agency for International Development
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Executive Summary

Afghanistan has one of the lowest per capita electricity consumption rates in the world, 100 to 186 kilowatt-hours (kWh) per person per year. This means that the average Afghan’s total energy consumption is equivalent to powering a 50-watt light bulb about 5½ hours a day. Overall, 30%–34% of the population has access to electricity. In rural areas only 11% have access that is intermittent and of poor-quality voltage. The international community has spent more than $4 billion in the electricity sector since 2002, albeit with less progress than expected. The cost of imported energy has increased by 16 times, from $16 million in 2007 to nearly $255 million in 2018. Weak institutional and human capacity, overlap and contradictions in policies and mandates, ambiguity in the role of government ministries and international development partners, and the divergence and lack of integration between development partners’ agendas and the Afghan government’s needs are among the existing challenges of the energy sector.

This research reported here studied the impact of investments and policies adopted in the past 17 years and identified policy gaps and institutional deficiencies in the electricity sector. It also assessed the performance of project implementation mechanisms and the vulnerability of the electricity sector to corruption at the national utility, procurement, and project management levels. The research used a qualitative method comprised of unstructured interviews and content analysis. Researchers conducted in-depth interviews with government employees, national utility staff, customers, contractors, and energy sector experts and accomplished a thorough content analysis of more than sixty documents, including policies, laws, reports, surveys, financial statements, journal articles, and independent analysis papers.

The report presents analyses of three project implementation case studies in the power sector and extracts lessons learned for future project implementation scenarios. The three case studies are: North East Power System (NEPS) Phase 1 and two components (a transmission line and substations) of the Power Transmission Expansion and Connectivity (PTEC) project. These case studies revealed that quality assurance and monitoring and evaluation by the Ministry of Energy and Water (MEW), Da Afghanistan Breshna Sherkat (DABS), and donors have been weak in projects implemented in the energy sector, allowing for poor quality of work by contractors that decreases the efficiency and life span of transmission lines and substations.

The report found two reasons for weak and improper quality assurance: (a) Afghan engineers and inspectors that oversee the work of contractors lacked technical expertise, and international consultants who were recruited by donors for quality assurance did not travel to work sites due to security concerns. (b) Vulnerability to corruption exists in the quality assurance process. According to some sources, contractors have pushed project engineers to overlook noncompliance and approved work that deviated from drawings and technical specifications of the contract.

The report also found that transmission line and substation projects struggled with land acquisition and resettlement issues. Project implementation progress halted when disputes arose between local residents and contractors or clients. As a result, some transmission line projects have not adhered to the right of way (RoW) clearance.

Moreover, DABS faced serious challenges in Operation and Maintenance (O&M), mainly because of the lack of technical expertise and O&M experience. Contractors delivered projects to DABS with zero to little training to DABS
personnel, and, in many occasions, O&M manuals were lost in project handover, which makes the operation or repair of equipment even more difficult.

The review found that MEW and the Ministry of Mines and Petroleum (MoMP) have a policy and planning overlap vis-à-vis coal, oil, and gas. It is unclear which agency is responsible to devise plans of utilization, and, if it is a multi-agency decision, it is not clear which planning and coordination framework should be followed to address an issue. The Sheberghan Gas to Power initiative, which is funded by the United States Agency for International Development (USAID) and started in 2005, is an example of an effort negatively affected by this overlap. For 14 years, with a significant amount of technical and financial resources spent, the project has not moved from paper to reality. Another detriment of this overlap is the lack of a single agenda agreed among development partners and the Afghan government. As a consequence, the Afghan government has had marginal to zero influence over off-budget projects that donors implemented. An example of this is the expenditure of $335 million on the Tarakhil 105 MW Diesel Power Plant, which has not been operated to full capacity. A Special Inspector General for Afghanistan Reconstruction (SIGAR) report noted that the power plant from 2010 to 2013 only produced 2.2% of its production capacity.

Furthermore, loopholes that create vulnerability to corruption in DABS and MEW, were found to require urgent reform and attention: (a) vulnerability to corruption in the bidding and contract award processes, (b) vulnerability to corruption in approval of contractors’ invoices during project implementation, and (c) vulnerability to corruption at the utility’s customer level in billing, meter installation, meter reading, and distribution network extension.

Contract termination of the engineering consultant for the second turbine for the Kajaki Hydropower Plant and the transmission line component of PTEC and the elimination of the bidding process for five substations from Ghazni to Kandahar by USAID were instances of attempted corruption in bidding and contract award processes within DABS, its consultants, and contractors. Possible collusion and lack of integrity in the tendering process of five substations in the connection between NEPS and the South East Power System (SEPS) were the main concerns that led to the elimination of the bidding process.

Contractors of MEW and DABS and sector experts interviewed for this report said that vulnerability to corruption in the bidding process was prevalent. The accessibility of members of the evaluation committee to bidders can enable collusion. Bid evaluation reports can be manipulated, or committee members can leak confidential information to bidders prior to submitting final reports. Moreover, it is noted that, with the creation of the National Procurement Authority (NPA), fraud and corruption did not disappear completely. However, another bureaucratic layer has been added. Some interviewees expressed concern about centralizing the procurement process in NPA with little or no oversight, feeling that this might increase the possibility for corruption.

Findings suggest with no strict oversight mechanisms were in place to prevent corruption, vulnerabilities to corruption during project implementation between contractors and project staff were widespread. There were reports that contractors push project staff to accept bribes, or contractors were forced to pay to have their invoices approved and disbursed. A DABS contractor said that if bribes were not paid, payment of invoices were delayed for months. On the contrary, invoices of contractors who pay employees up front were paid quickly on priority basis, without adequate quality assurance.

The report highlights key impacts that the situation of the past 17 years has had on the power sector. The first impact of the identified irregularities was the overall low electrification rate. A majority, 66%–70%, of the population in
Afghanistan still has no access to electricity, and for those who do have access, power is intermittent and unreliable. The second alarming impact was that the Afghans still heavily depend on international aid and technical assistance and are incapable of managing the sector by themselves. Capacities of civil servants in the ministries and DABS have not been built. Instead international counterparts trained mostly short-term Afghan consultants, who received higher salaries and benefits that the government cannot match. This has led to a fragile capacity of personnel in the energy ministries and created an undesirable situation in the Afghan job market.

Also, important findings of the analysis were how the absence of a proper regulatory framework and a power sector regulatory authority badly affected the sector. The inability to enact the Electricity Law on time and failing to establish the regulatory authority were manifestations of the diminished institutional capacity of the Afghan energy sector. Moreover, an obvious impact of not having a functional regulatory authority in the sector is the absence of private sector participation. Ideally, the private sector should have participated when DABS was restructured in 2008, but the Electricity Law approval took 7 years. This was a key factor that limited the participation of the private sector. Engaging the private sector in the past 3 years since the enactment of the Public–Private Partnership law is considered by sector experts as an ad-hoc solution that is unsustainable until and unless the Electricity Regulatory Authority (ERA) is established and becomes functional.

Recommendations

- Clarify the roles and scope of work of government agencies in the energy sector and the national power utility. A clearly defined scope of work and mandate will prevent organizations from escaping accountability.

- Redefine and reorganize MEW and establish an independent ERA. MEW needs to act as a policymaker and not a project implementer or sector regulator. MEW should take the ownership of the national energy policy and the Power Sector Master Plan (PSMP) and provide the overall policy and planning direction to the sector. The separation of policy and planning from regulation is essential for long-term sustainability.

- Start to unbundle the national power utility (DABS). It is recommended that DABS should act as the power system operator and retain the transmission network but allow Independent Power Producers (IPPs) to generate power. Moreover, it is advised to study the option of leasing or outsourcing the five major distribution networks in Kabul, Herat, Mazar, Kandahar and Nangarhar to private companies for 15 to 20 years while DABS retains ownership of the networks. Or DABS might privatize all major distribution networks and convert them into distribution companies. Both options require consideration and further study.

- Address the nonexistence of a unified and agreed upon development plan for the sector. Bilateral agreements of development partners with the Ministry of Finance often overlook national plans, as happened with the Afghanistan National Development Strategy (ANDS).

- Create an enabling environment for the private sector and offer incentives for investing in the energy sector. An enabling environment for the private sector requires the establishment of an independent regulatory authority that will ensure transparency and fairness in licensing, return on investments, and tariffs. Insecurity of staff and machinery, issues around land acquisition, high taxes and duties on imported equipment, and difficulties in obtaining approvals from government departments are among the major concerns of the private sector that the government needs to address.
Background

Afghanistan’s electricity sector is recovering at a slow pace. Since 2001 there has been progress in addressing technical, fiscal and governance challenges. Still, there is a desperate need for more electricity for development and to grow the economy, not just to keep the lights on. Afghanistan, like many underdeveloped and post-conflict countries, struggles to supply power to its citizens. In 2001, less than 5% of the country had access to electricity (ADB, 2015). Currently 30%–34% of the total population (DABS, 2016, states 34%; SIGAR, 2019, states 30%) has access to electricity. The electrification inequality between urban and rural areas further demonstrates the challenge (United Nations Development Program [UNDP], 2015). In rural areas, coverage is only 11% (The World Bank, 2017), and 75% of Afghans live in rural areas.

Afghanistan is home to more than 35 million Afghans (The World Bank, 2017). Current domestic power capacity is 519 megawatt (MW). Of this, 51% is thermal, i.e., diesel and furnace oil, and 49% is hydropower, which is seasonal and has a capacity factor of less than 40% (ADB, 2015). The average per capita electricity consumption in Afghanistan is among the lowest worldwide. Consumption was assessed in 2015 through 2017 to be between 100 to 186 kilowatt-hours (kWh) per person per year (UNDP, 2015; DABS, 2016). According to the World Bank (2017), “average per capita consumption is about 186 kWh per year. It is estimated that the per capita energy consumption will reach 220 kWh in the near future which is significantly less than the South Asia average of 707 kWh and far below the global average of 3,126 kWh”. Per capita consumption rates of other countries in the region higher, such as Pakistan (~450 kWh), Sri Lanka (~500 kWh), and India (~700 kWh).

According to UNDP (2015), up to 85% of primary energy used in Afghanistan comes from traditional biomass (such as wood and dung), which contributes to deforestation. An estimated 97% of the rural population uses solid fuels for cooking. As a result, Afghanistan stands among the top 10 countries most affected by indoor (household) air pollution and particulate matter pollution.

The electricity sector in Afghanistan faces numerous challenges: weak institutional and human capacity; contradictions in policies, mandates, and jurisdiction; the ambiguous role of international development partners; and the divergence between development partners’ agendas and the Afghan government’s needs and objective. Some of the pressing issues of the sector are outlined below:

1. International development partners have spent $4 billion in the electricity sector since 2002 (SIGAR, 2016; Inter-ministerial Commission for Energy, 2016; Amin and Bernell, 2018). The United States alone (Department of Defense and USAID) spent nearly $3 billion on power sector projects in Afghanistan since fiscal year 2002 (including fuel cost for diesel generators in Kandahar; SIGAR 2019). The Asian Development Bank (ADB) has a current portfolio of $1.2 billion (ADB, 2017), and more than $500 million in
additional funding for the power sector has come from the World Bank, Germany, India, and other partners. Despite this investment, the national grid of Afghanistan currently imports 80% of its power from neighboring countries (SIGAR, 2019). Uzbekistan provides 35.2%, Tajikistan 30.5%, Iran 20.9%, and Turkmenistan 13.4%. The cost of imported energy increased from $16 million in 2007 to nearly $255 million (DABS Import Data) in 2018. In addition to the ambiguity in price trends in the future, the 2004 PSMP judged the import strategy unreliable in the long run because of the politically instability of its neighbors that supply power and the limited enforceability of commercial contracts. A decade of struggle to increase and improve the electrification rate and billions in expenditure beg the question of how the money was spent.

2. Besides the inappropriate prioritization, selection, and sequencing in projects and investment, the institutional and human capacity in Afghanistan’s energy sector remains weak and reliant on donors’ technical assistance and international expertise. Assessments and evaluation reports from various credible entities, such as SIGAR, UNDP, ADB, and The World Bank, assert that the institutional and national personnel capacity of the Afghan energy sector is incapable of carrying out all tasks in policy, regulation, planning, project implementation, and operation of an electric utility, among others. It took the Afghan government 7 years to draft, approve, and enact the Electricity Law. The Afghan constitution, enacted in January 2004, provided the legal ground for forthcoming laws and regulations. In the power sector until 2008, the Afghan ministries dealt with small project management matters linked to projects proposed and funded by development partners while international partners moved forward with the implementation of transmission line, substation, and distribution projects and some capacity building programs. The establishment of a sound regulatory framework that could enable private sector participation was not in the agenda, and an independent regulatory authority has still not been established by the government. Therefore, the sector relies predominantly on foreign aid and requires outside technical assistance in all its facets.

3. With regard to policies and scopes of work, there are overlaps and contradictions in mandates and jurisdictions of MEW and MoMP; MEW and DABS; and MEW, the Ministry of Rural Rehabilitation and Development (MRRD), and DABS. These overlaps and contradictions stem from inadequate institutional analysis of the sector and the lack of a holistic sector policy.

4. The important issue in relation to international development partners’ roles in Afghanistan’s energy sector is the lack of a unified, agreed upon development agenda. This leaves each development partner (donor) to pursue its own mission and development mandate in Afghanistan, and perhaps in many occasions, to give priority to its own mission instead of the Afghanistan government’s development goals, plans, and priorities. Since 2002 the international development partners have assumed roles in energy sector planning, either directly or by providing technical assistance. The role of the Afghan government in their plans was minimal. In addition, international development partners have not met expectations in institutional and personnel capacity building despite 17 years of consistent, heavy spending in this area.
Methodology

The research presented in this report studied the impact of investments and policies adopted in the past 17 years with an objective to identify policy gaps and institutional deficiencies in the electricity sector. It also attempted to assess vulnerability of the electricity sector to corruption at the national utility, procurement, and project management levels. Furthermore, it aimed to contribute to the limited literature available in the sector and to provide policy recommendations to the government, international partners, and other stakeholders in terms of proposed sector reforms and restructuring.

The three questions for this research were as follows:

1. What is the impact of investments made by international partners in the electricity sector of Afghanistan? Have the outcomes of these investments met expectations by increasing the electrification rate and providing reliable and affordable electricity to Afghans?

2. What are major policy gaps and institutional deficiencies in the electricity sector of Afghanistan?

3. What are the vulnerabilities to corruption in the electrification process and the overall institutional capacity of the electricity sector in Afghanistan?

A qualitative method was chosen comprised of unstructured interviews with government employees, national utility staff, customers, private investors, contractors, and energy sector experts and a thorough content analysis of more than sixty documents, which included policies, laws, reports, surveys, financial statements, journal articles, and independent analysis papers. The list of documents reviewed is in Annex A. Due to sensitivity of corruption, fraud, and integrity issues, the identity of interviewees is kept anonymous based on their request.

The author was provided a dataset by Integrity Watch Afghanistan that included three technical inspection reports of the North East Power System Phase I and PTEC projects—both funded by the US government. These reports analyzed and evaluated issues pertaining to project implementation, contractors’ performance, and quality assurance by the client. The reports scrutinized two transmission lines (Arghandi to Puli Alam 220 kilovolt [kV] line and Arghandi to Ghazni 220 kV line) and three substations (Puli Alam, Sayed Abad and Ghazni substations). Thirty-four survey responses and short interviews with project beneficiaries were included in the dataset. The author treated the results of these three inspections as case studies in the power sector and extracted lessons learned for sector stakeholders in project implementation scenarios.

For the literature review, documents obtained from government and international development partner sources and an in-depth review and institutional analysis were examined to understand the scopes of work of various actors in the sector. The legal framework of the sector was analyzed based on the review of enacted laws, approved policies, and plans devised by government ministries and development partners.

This report has four sections:

• Section one provides an assessment of project implementation scenarios in Afghanistan and an analysis of the three selected case studies. This section also highlights lessons learned from project implementation in the power sector of Afghanistan.

• Section two elaborates on the institutional and legal framework of the electricity sector in Afghanistan. It outlines potential policy gaps and overlaps in mandates and, in some occasions, contradictions in the scopes of
work of government ministries, including DABS.

• Section three highlights and discusses three practices that introduce vulnerabilities to corruption in the power sector and summarizes vulnerability to corruption in DABS and its potential impact on the electrification process in Afghanistan.

• Section four summarizes results of the analysis and provides policy recommendations.
The Current Structure of the Energy Sector

Five government ministries and the national power utility make up the institutional framework of Afghanistan’s national energy sector. According to the National Energy Policy, as shown in the chart below, MEW is in charge of the sector, including electrical and thermal energy. However, responsibilities for renewable energy initiatives that have up to 200 kW installed capacity are shared between MEW and MRRD. For renewables, MEW has oversight responsibility, creates policies, and implements regulation and master plans, but MRRD is responsible for off-grid projects and initiatives. At the same time DABS, which is completely state owned, is the sole operator that generates, transmits, and distributes energy throughout the country.

Preparation of feasibility studies of hydropower plants is a core component in MEW’s scope of work. In collaboration with MoMP, MEW provides estimates of the overall natural resources available for energy production, for example, coal, gas, oil, hydro, solar, wind, biomass, geothermal, and so forth. MEW is also responsible for updating the PSMP that was completed in 2013 (Amin and Bernell, 2018). The PSMP forecasts demand and outlines plans for optimal, feasible projects for power generation and transmission network expansion and optimization.

With regards to enacted laws, the Minerals Law, Hydrocarbons Law, and hydrocarbons regulations were drafted, approved, and enacted by the government in 2018. Both laws mandate MoMP to devise policies for the mining and hydrocarbons sectors. In the Minerals Law, the MoMP is designated as the implementing agency and prime custodian. In the Hydrocarbons Law, AOGRA, a new institution established by this law, is the implementing body. The two laws also envisage the creation of a Hydrocarbon High Board for the hydrocarbon sector and a Technical Committee for the mining sector to assist the ministry and the regulatory authority in their activities. The Hydrocarbon High Board is mandated to oversee the process of tendering and to report to the cabinet on AOGRA’s performance. The Technical Committee is to provide technical assistance to MoMP and update the High Economic Council on overall mining sector performance (Ministry of Justice, 2018a; Ministry of Justice, 2018b).

To address rural electrification the MRRD was mandated with planning, implementation, and oversight of all development programs in rural Afghanistan. Part of MRRD’s scope of work and responsibilities includes supporting energy infrastructure in rural areas. In each provincial office MRRD has a liaison with the provincial
government (Amin, 2017). It manages the Citizen Charter through which traditional local *jirga* and *shuras* form Community Development Councils (CDCs). These councils are trained and empowered to undertake local development projects and co-implement them with MRRD and MoF. The National Solidarity Program (NSP) supported energy access to rural areas through the installation of micro-hydropower plants, solar home systems and diesel generators. Currently MRRD, with the help of UNDP, launched the Afghanistan Sustainable Energy for Rural Development program to provide electricity to 19,500 households (almost 3.2 million people) in 194 rural communities in Afghanistan (UNDP, 2019).

The Role of the Private Sector

The private sector could not invest in the energy sector of Afghanistan until recently. In 2011 first efforts for private sector involvement in the Sheberghan IPP were made outside of the regulatory framework. In 2011 and 2012 private companies started to approach MEW directly asking for a generation license. MEW could not issue licenses because the Electricity Law was not approved, and there was no legal basis for MEW to proceed without a regulatory framework. A number of generation licenses were issued on an exceptional basis when MEW got instructions from a cabinet meeting decision in 2014. However, the ERA, which was stipulated in the Electricity Law, has still not been established by MEW, and the private sector has not been able to make a significant contribution to the sector.

In late 2016, the Afghan government approved the Public–Private Partnership (PPP) Law that was conceived to enable private sector participation. The PPP department started its activities in MoF in 2016. A few PPP projects that emerged include: The Kandahar 10 MW and 30 MW projects, Mazar 50 MW IPP (International Finance Corporation and Ghazanfar Group), Sheberghan 40 MW IPP (Bayat Power), and Kajaki II 100 MW Hydropower Plant (77 Construction). Details of power purchase agreements and modalities of tendering, licensing, and regulation of the mentioned projects are not clear since the ERA is not in place, and ministries and the national utility directly engage with the private sector.

The current legal framework of the power sector

The current legal framework of the power sector has seven components: (a) the Electricity Law, (b) the Hydrocarbons Law (c) the National Integrated Energy Policy (NIEP), (d) the National Renewable Energy Policy, (e) the National Infrastructure Plan, (f) MEW’s PSMP and 5-Year Plan, and (g) DABS’s Business Plan. MEW, with the help of Deutsche Gesellschaft für Internationale Zusammenarbeit (German Corporation for International Development), developed its 5-year plan (2016–2020). The plan is summarized in three pillars that have outcomes as results, outputs as progress, and tasks as projects completed. Pillar I is called “energy supply, security and equity—which is focused on delivering affordable, clean energy to all of Afghanistan’s residents”. Pillar II is “economic institutional and education development—which focuses on public sector institution reform, promotion of the private sector, and integration and development of energy sector research and education”. Pillar III is described as “international trade and cooperation—which focuses on Afghanistan’s relationships with other countries (MEW, 2016).

The MEW plan envisages that by 2020 80% of the urban population and 50% of the rural population will have access to modern energy. Furthermore, the plan states that 2,300 MW domestic capacity will be added into the power system by 2025, of which 550 MW will come from renewable energy. Also, 1,500 MW of power generation will be added under public–private partnership models by 2025. This expansion will create 20,000 jobs in the energy sector, and 60,000 jobs will be enabled through improved energy access (MEW, 2016).
DABS, with the help of a consulting firm, developed a business plan in late 2016. DABS’s Articles of Association and Bylaws required a business plan to provide the strategic direction for the sustainable growth of DABS. The plan (DABS, 2016) acknowledged that “increased dependence on imported energy, lack of adequate generation capacity, poor O&M of existing assets, inadequate access to electricity, high network losses, rampant theft, poor quality reliability of power, and unmetered supply” were among the key challenges facing DABS. It stated that 34% of Afghanistan had access to electricity, and 17 out of 34 provinces were yet to connected to the grid or have power supplied through transmission lines. The document stated that technical and commercial losses were around 36%. The business plan estimated that the electrification rate would increase by 11% in 2020, and technical and commercial losses would decrease from 36% to 25% by adopting initiatives of meter replacement and network augmentation.
Assessment of Project Implementation Scenarios in the Energy Sector

Energy project implementation in Afghanistan has struggled with inconsistency in various phases of a project cycle, including project preparation, design, quality assurance by the client, land acquisition, resettlement, and compensation. A lack of coordination among too many stakeholders in the sector has reduced the efficiency of project implementation. More than 10 donors in the sector adopted different project procurement, execution, and quality assurance mechanisms. From the Afghan government side there is no central project implementation unit in the sector. MEW and DABS have two separate departments dealing with project implementation that use two different ways to assure quality and evaluate contractors’ work.

In this section, we look into three case studies (two 220 kV transmission lines and three 220/20 kV substations) to highlight the obstacles in project implementation:

**Case Study 1: North East Power System Phase 1**

The first phase of NEPS included installation of a 70.6 km of a 220-kV transmission line from the Arghandi substation in Kabul to the Puli Alam substation in Logar and the construction of the Puli Alam substation. Eight major deficiencies were identified, which primarily resulted from noncompliance with project technical specification and lack of project oversight and quality assurance. The most significant one related to the clearance of RoW of the transmission line. The technical team of Integrity Watch concluded in their technical inspection report (Integrity Watch, 2018a) that the RoW clearance should have been executed before the start of the construction. Instead, when the transmission line’s construction was completed, the RoW was still not clear; land acquisition and resettlement issues were still pending with the government.

The reason cited by the technical team of Integrity Watch for this specific problem was a lack of coordination between the US Army Corps of Engineers, the donor and client for the project, and MEW, the responsible government ministry. The report pointed out that the minimum clearance for RoW and resolution of land acquisition and resettlement issues were essential for proper and adequate future O&M of the project.

Apart from the RoW issue, the Integrity Watch report found that none of the doors installed at the Pule-Alam substation had manufacturer
information or labels to indicate the type of fire rating they offered. Furthermore, the report found that all of the fire extinguishers installed were counterfeit and carried a single serial number. The third major deficiency observed was poor-quality concrete in the substation boundary fence and tower foundations. The concrete had visible crack. It was not well vibrated and had segregations. The reasons cited in the report for these deficiencies were a failure of the contractor to fulfill the project technical specifications and a lack of oversight by quality assurance engineers assigned by the client.

**Case Study 2: Power Transmission Expansion and Connectivity Project—Transmission Line**

PTEC is a USAID-funded program that has three components. Its overall objective is to expand and improve Afghanistan’s electric transmission system that would provide affordable and reliable power to Afghans. We looked into the component that aimed to expand, strengthen, and integrate NEPS and SEPS. These improvements would include a 110.5 km transmission line from Arghandi substation in Kabul to Sayedabad substation in Maidan Wardak and to Ghazni substation in Ghazni and construction of two substations, namely Sayedabad and Ghazni.

![Figure 4 Puli Alam Substation of NEPS I. Door does not have manufacturer label. On the right, crack visible in the boundary fence foundation. Photos from Integrity Watch’s Report](image)

![Figure 5 PTEC Transmission line route is not cleared and the land is being used for agriculture proposes. Photos taken from: Inspection Report of Integrity Watch.](image)
The technical team of Integrity Watch carried out a technical inspection of the transmission line and reported (Integrity Watch, 2018b) that “safety clearances are not well considered and the transmission line route is not cleared from the trees and other obstacles. In addition, the land around the foundations of 5 out of 17 inspected sample towers is currently being used by land owners for agricultural purposes”.

Figure 6 Towers have holes without nuts and bolts. Installation of the wrong type plates/or wrong installation of the members. Photos taken from: Inspection Report of Integrity Watch.

The Integrity Watch technical team’s inspections of a sample of towers in the line found excessive holes without nuts and bolts, and there was soil settlement around foundations of some towers. These defects, among others, appeared to be failures on the part of the contractor to comply with technical specifications, poor workmanship in backfilling the material, and water penetration when farmers irrigated the land near the transmission line towers.

Figure 7 Settlements around the foundations of Tower in PTEC Transmission line. Photos taken from: Inspection Report of Integrity Watch.

Case Study 3: Power Transmission Expansion and Connectivity Project—Substations

PTEC constructed two substations, Sayedabad substation in Maidan Wardak province and Ghazni substation in Ghazni province. The Integrity Watch inspected the substations in May and June 2018 and concluded (Integrity Watch, 2018c) that the construction of both generally met the contractual requirements. However, the inspections identified nine construction deficiencies in the Sayedabad substation and 12 construction deficiencies in the Ghazni
substation. These deficiencies showed noncompliance with actual drawings and technical specifications and inadequate quality assurance on site. Among the deficiencies identified in both substations were the installation of non-fire-rated doors instead of fire-rated doors, and access road storm water drainage inlets at the wrong elevations on walls of the drainage ditches.

The technical team of Integrity Watch also identified 14 O&M deficiencies in the Sayedabad substation and six O&M deficiencies in the Ghazni substation, including: Search lights in guard towers were not functional, access doors of all switchgears were in the open position, and some compact fluorescent lamps were missing.

**Lessons Learned from Project Implementation in Afghanistan**

Four essential points require immediate attention from government officials and development partners vis-à-vis project implementation in the energy sector:

a) There is confusion and inefficiency as MEW and DABS both undertake project implementation in the power sector. The Ministry of Finance receives budget requisitions for transmission lines and substations from MEW and DABS at the same time. Shall they both continue to implement projects separately, or should there be one agency to consider power system planning, project selection, and prioritization based on technical issues? The existing structure has allowed development partners to choose with whom they want to work and even to propose projects to MoF...
directly, bypassing both MEW and DABS. The two-agency implementation mechanism has created difficulty in the project handover process. All projects implemented by MEW should be handed over to DABS and reflected in DABS’s balance sheet. According to DABS officials, the handover of several transmission lines and substations took place without due process and proper documentation.

b) Quality assurance and monitoring and evaluation by MEW, DABS, and donors have been weak and not up to the mark. This led to poor quality of work by contractors and decreased the efficiency and life span of products. We found two reasons for weak and improper quality assurance. First was a lack of technical expertise in Afghan engineers and inspectors to oversee contractors’ work, and international consultants recruited by donors for quality assurance operated from Kabul due to security concerns and did not travel to work sites. Secondly, there was a vulnerability to corruption in the quality assurance process. Contractors could push project engineers to overlook noncompliance and approve work that deviated from drawings and technical specifications of the contract. This vulnerability to corruption in project implementation is discussed in detail in the ‘Assessment of Vulnerability to Corruption in the Power Sector’ section.

c) Land acquisition and resettlement issues delayed or stopped progress. Transmission line and substation projects struggled to overcome land acquisition and resettlement issues. Project implementation was delayed or halted by disputes between local residents and contractors or clients. As a result, transmission line projects did not adhere to RoW clearance.

d) DABS, as the sole operator of the power system in Afghanistan, faced serious challenges in O&M. This was mainly because of lack of technical expertise and O&M experience. Contractors delivered projects to DABS with zero to little training to DABS personnel. On many occasions O&M manuals were lost in handover from contractor to DABS, making the operation or repair of the equipment difficult.
Assessment of Policy Gaps and Institutional Deficiencies

In this section, we pinpoint instances where policy gaps and institutional deficiencies have plagued the electrification process in Afghanistan.

Ambiguity and Overlap in Scope of Works

There are overlaps, ambiguity, and contradictions in mandates of government ministries and the national power utility. For instance, mandates for MEW and MoMP overlap. There is a policy gap vis-à-vis coal, oil, and gas. It is unclear how and when resources like coal, oil, and gas should be used. Similarly, who should devise the plan and which agency makes final decisions? If it is not a single ministry decision, then on what coordination framework should planning and project prioritization be streamlined? These ambiguities have created problems and will likely create more challenges in the future (Amin, 2017).

The Hydrocarbon Law restricts policy making for the hydrocarbon’s upstream and midstream to MoMP. However, NIEP does not mention MoMP as a policymaking body for oil and gas and gives MEW the upper hand to devise polices and plans in this area. The legal and regulatory framework overlooks gas-fired and coal-fired power plants in their documents. This is a policy and institutional gap in the sector.

Sheberghan Gas to Power Project

The Sheberghan Gas Power Project, initiated and funded by USAID, illustrates consequences of policy overlap. In 2005 USAID mobilized a consulting firm, Advanced Engineering Associates International (AEAI), to undertake a feasibility study for a gas-fired power plant in the Sheberghan gas fields in northwest Afghanistan. AEAI’s 2006 feasibility study concluded that “the project is an excellent opportunity to gain high impact results consistent with the strategic objective of USAID/Afghanistan and other donors in Afghanistan” (AEAI, 2006). The feasibility study was presented to MEW, but the role of MoMP was overlooked, an example of confusion in multiagency coordination. In 2010 USAID again mobilized AEAI to do a second set of studies to evaluate the feasibility of the Sheberghan Gas project. This study proposed changes in the original model, suggested that IPPs invest in the project, and increased the proposed capacity from 100 MW to 200 MW. This time the report was presented to MoMP, but USAID and AEAI completely ignored MEW (Amin, 2017).

Figure 10 A Gas Well in Sheberghan. Source: MoMP Presentation

It has been almost a decade since the second report, and the Sheberghan gas to power project, though still discussed in meetings, has not become a reality. The question is: Why after 14 years has a 200 MW gas-fired power plant not been built in Sheberghan? SIGAR, in an investigation report to the US Congress, highlighted the following: “the US government did not have a unified strategy for the development of Afghanistan’s extractive industries and it lacked adequate communication with MoMP and their stakeholders regarding development strategy...
and goals; instead USAID and Task Force for Business Stability Operations which is a US Department of Defense Division, pursued divergent approaches to guide their initiatives” (SIGAR, 2015). The report further criticized the task force and USAID’s strategy regarding Afghanistan’s hydrocarbon sector and highlighted a failure to conform to an operational principle of USAID’s 2011-2015 Policy Framework, which was to build sustainability from the start of a program. That is, to build skills, knowledge, and institutions and to promote incentives that make development processes self-sustaining. The Sheberghan Gas project, as a USAID initiative, lacked the operational principle of building capacity in the Ministry of Mines and Petroleum to sustain the project. Thus, the 14-year-old Sheberghan project still exists only on paper.

In another example of overlap and contradiction, the scopes of work of both MEW and DABS include surveying, designing, and project implementation of transmission lines, substations, and distribution networks. However, neither the Electricity Law, NIEP, nor any other energy policy delegated project implementation, design of power systems, or surveying to MEW. These activities will eventually be assumed and maintained by DABS. This contradiction between jurisdiction and scopes of work has created a challenge to the proper handover of power projects. MEW faced logistical problems and delayed handover of implemented transmission lines, substations, and distribution projects to DABS (Amin, 2017). All transferred projects were supposed to be registered as DABS assets and be reflected in DABS balance sheet. DABS is still trying to include all its assets in the balance sheet.

**Delayed Project Handover from MEW to DABS**

The ADB-funded Afghanistan - Tajikistan Regional Power Transmission Interconnection Project was initiated in 2007 (ABD, 2014). MEW was the executing agency. DABS was not yet established, and its predecessor, Da Afghanistan Bresnha Moassessa (DABM), operated the power system. DABM was assigned to assume O&M responsibility after projects were completed. Once established, DABS commissioned the Afghanistan-Tajikistan transmission line on October 27, 2011 and took over the project for commercial operation. Due to the urgency to provide electricity to customers, DABS took over three transmission lines of 157 km from the Sherkhan border of Tajikistan to Puli-Khumri substation and three substations in Kunduz, Baghlan, and Puli-Khumri from the project According to the ADB (2014) completion report, the assets registry, proper documentation, spare parts, and O&M manuals for the project were not handed over properly to DABS. The assets of the project were not reflected in DABS’s balance sheet until 2018. This project is just one instance. Almost all off-budget
power system projects implemented by development partners through MEW have suffered similar problems (Amin, 2017).

A third overlap and policy gap is the location of Water and Engineering Power Company of Afghanistan (WAPECA) within the MEW’s structure. WAPECA, is an engineering, survey, and design consulting firm for the government that in the 1970s and 1980s provided electrical engineering services to MEW and DABM, which was fully government-owned and government-run. WAPECA has expertise to survey and design distribution networks with medium level voltage (0.4 kV to 20 kV). MEW and DABS have not discussed how to transfer the WAPECA department to DABS, and it seems that MEW wants to retain it under its structure. Resolution on whether WAPECA should remain in MEW’s structure is an important outstanding institutional and policy decision (Amin, 2017). Given that MEW has no role in distribution networks, and that existing and forthcoming distribution networks will be operated by DABS, can WAPECA be an independent government-owned consulting firm in the energy sector? If yes, then how will MEW and DABS reorganize their structure and planning activities?

The Caretaker of Renewable Energy Projects

The fourth policy gap and institutional deficiency in the energy sector concerns overlap and contradiction among DABS, MEW, and MRRD with regard to renewable energy projects’ implementation, operation, and maintenance. The Renewable Energy Policy stipulates that projects with more than 200 kW installed capacity fall within the jurisdiction of MEW. However, MEW does not have the required staff to operate and maintain those projects. Unlike DABS, MEW and MRRD do not have the technical manpower to operate and maintain renewable energy projects, including deploying technicians to numerous sites in remote areas of the country, distribute energy bills and collect revenue.

MRRD, through its rural development programs, implemented 4,549 off-grid renewable energy projects in Afghanistan from 2002 to 2016. Of these 2,186 are mini-hydropower, 2,358 are solar, and five are wind energy projects. These small-scale, off-grid projects added 55 MW to Afghanistan’s rural areas (Inter-ministerial Commission for Energy, 2016). Off-grid projects of less than 100 kW in installed capacity were intended to supply power to local communities. Because of the conflict in mandates, DABS cannot extend its scope of work to remote areas to operate and maintain projects of less than 100 kW because these small projects cannot generate enough revenue to cover O&M costs.

Lack of a Unified Development Agenda among International Partners

Another policy gap that has hurt the energy sector is the absence of a unified development agenda for actors in the sector. Each development partner (donor) has pursued its own agenda. This may be, in part, from the
inconsistency and overlap of mandates of the Afghan national agencies such as MEW and DABS (Amin and Bernell, 2018). With prevalent confusion and lack of coordination in the sector, donors were unable to identify the right counterparts. So, they selected and implemented off-budget projects that, more often than not, did not align with the national development plans.

**The Tarakhil 105 MW Diesel Power Plant**

The ANDS called for greater development of hydropower plants that offer a long-term, sustainable energy solution for Afghanistan to help mitigate concerns about potential shortfalls in available power resulting from natural disasters or from neighboring country decisions to reduce power exports. Afghanistan has great potential of hydropower (23 GW) (ADB, 2013), but in July 2007 USAID opted to build the 105 MW Tarakhil Diesel Power Plant on the outskirts of Kabul (Amin and Bernell, 2018). Fuel for this mega power plant had to be imported from outside.

USAID budgeted $95 million for the Tarakhil Power Plant but spent $335 million (SIGAR, 2015). According to SIGAR (2015), assessments performed by USAID consultants (Tetra Tech Inc.) highlighted that the Tarakhil power plant was designed to be a base load plant that would operate 24 hours, 7 days a week, but later it operated to support peak load only. USAID, MEW, and DABM thought that the power plant, with 18 diesel engines continuously generating energy, would significantly reinforce the power available on Afghanistan’s national power grid. The SIGAR report states that the project was plagued by cost overruns, poor contractor performance, and delays. The power plant was ultimately handed over to DABS in June 2010. SIGAR found that between July 2010 and December 2013, the plant only produced about 63,000 MWh of energy, just 2.2% of its production capacity during that period. The report further says that the underuse of the plant apparently resulted in the premature failure of equipment, which will raise O&M costs significantly. Today, 9 years after the Tarakhil power plant’s completion and considering the $335 million that was spent on the project, one could ask whether it was worthwhile to build a diesel power plant of 105 MW that produces only 2.2% energy of its capacity?

![Figure 15 Tarakhil Power Plant, located on the outskirts of Kabul. Source: OIG/USAID](image)

**The Afghan Human Resource Capacity**

Various development partners have made efforts to build institutional and human capacity in the energy sector. The US government implemented various on- and off-budget capacity building projects. From 2004–2008 USAID funded the $74 million AEAI-implemented Afghanistan Energy Assistance Project (AEAP). This project aimed to provide technical assistance to the energy sector government agencies in renewable energy and gas
institutional and human capacity building (AEAI, 2007). In 2008 USAID initiated another program through AEAI called the Afghan Energy Capacity Building Program for Human and Institutional Capacity Building for Afghanistan Energy and Natural Resources (AEAI, 2011). This program supported MEW, DABS, and MoMP in drafting the Electricity Law, training staff, planning the distribution system, assisting university electrical engineering departments in curriculum development, and sending students to India for postgraduate training in hydropower plants and transmission planning (Amin, 2017).

In 2009 the US government invested nearly $88 million off-budget in a DABS commercialization project to build capacities for corporate governance, to increase revenue collection efficiency, and to enable DABS to function as a self-reliant and sustainable commercial utility. According to SIGAR (2013) USAID spent $61 million in Economic Support Funds for commercialization efforts in Kabul and Kandahar. For Kabul-based efforts $53 million was allocated to support the commercialization of DABS through the Kabul Electricity Services Improvement Project (KESIP) and more than $670,000 was granted to Etisalat to aid DABS-Kabul’s revenue collections via mobile bill payment. For Kandahar-based efforts, a joint venture of Louis Berger Group Inc. and Black & Veatch Special Projects was awarded a contract of $6.8 million to support commercialization activities such as, performing baseline studies related to revenues and losses, installing boundary meters, and developing a customer meter installation plan (Amin, 2017).

These projects improved commercialization efforts in DABS; however, the $88 million project did not achieve the desired outcome vis-à-vis personnel and institutional capacity building. Thus, in 2013 USAID decided to provide another $157 million fund toward commercialization of DABS and utility corporate governance, and this project was to be implemented on-budget. High salaries, travel, and security expenses of the international consulting firms increased the project costs (Amin, 2017). It took 8 years for basic commercial processes to become institutionalized in Kabul and even longer in the provinces. Provinces still face challenges in billing and revenue collection performance, and technical and commercial losses are higher in provinces compared to Kabul.

The Impact on the Afghan Job Market

The short-term boost in the Afghan job market created by international assistance did more harm than good; it distorted the market. The development partners and international companies paid higher salaries, especially to their local staff, that were more than what the Afghan government is still unable to afford. Due to relatively lower government salaries, Afghans who worked with international companies or development partners were, and still are, unwilling to work as civil servants. When offered a government job they demand higher salary and benefits, or they look for similar short-term opportunities that pay more. This situation significantly led to a ‘diminished institutional capacity’ in the energy sector. Civil servants, by and large, were not part of the planning, implementation, and decision-making processes of development projects. Development partners hired consultants to fulfill these roles. The short-term Afghan consultants’ capacities advanced, and the civil servants’ capacities remained where they started. The consultants were expected to transfer knowledge from the international experts to the civil servants and facilitate training, but instead they acquired and retained the required knowledge and expertise, without sharing (Amin and Bernell, 2018). In short, the development partners’ technical assistance built only the capacities of temporary staff and not those of permanent government civil servants.

Energy Sector Projects Selection and Prioritization

The important process of selection and prioritization of energy projects is complicated and confused among DABS, MEW, and development partners. DABS and MEW both
send budget appropriations, also called ‘budget allotments’, to the MoF for various power system projects such as generation, transmission, and distribution. Without expertise and due diligence, the MoF’s criteria for selection and inclusion of a project in the national budget is unclear. In the national budget for fiscal year 2017, DABS had 22 development projects approved (ranging from generation to transmission to distribution; MoF, 2017) and was allocated $450.5 million. DABS was not able to spend the allocated budget and transferred $376 million to the next year’s budget. Similarly, MEW transferred $83 million from FY 2016 to its FY 2017’s budget. This practice of budget requisition and allotment continued in a similar fashion for FY 2018 and FY 2019. MEW added more solar PV projects with capacities of 5 and 10 MW in different provinces (MoF, 2019). However, the handover processes and asset transfer to DABS was unclear. There was no understanding between the two agencies about who would operate the plants once implementation was complete.

Development partners interact with and officially sign grant and loan agreements with the MoF, but the MoF does not have adequate technical expertise to prioritize or select projects for financing. MoF is in a decision-making role while other ministries, such as MEW, MoMP, and DABS, act only as executing agencies (Amin, 2017). Documents are shelved, and decisions are made without following a framework. This has created a gap in the institutional and policy framework in the energy sector and undermined strategies like ANDS, National Priority Programs (NPPs), the PSMP, and the Gas Sector Development Master Plan.

The complex process of bureaucracy is not the only culprit that leaves the Afghan energy sector fragile and incapable of carrying out its responsibilities. Despite almost 18 years of involvement of international development partners, the energy sector and related entities still lack technical capacity to select, prioritize, synthesize, rehabilitate, monitor, evaluate, or even maintain the facility and networks. After almost 2 decades striving to improve the energy sector and its supply and to increase the electrification rate, why is there still a giant gap of technical capacity in the energy sector?

Financial investment coupled with capacity building of energy line ministries and its technical teams would have a stronger impact than would simple procurement of energy utilities without training technicians on how to use or maintain them. The lack of technical capacity could be one factor that has led the private sector to maintain a sort of laissez-faire approach. The international development partners have decades of experience in post-conflict societies like Afghanistan. So, why in Afghanistan have they not focused on capacity building and development trainings before or during project execution in the energy sector?
Assessment of Vulnerabilities to Corruption in the Power Sector

DABS as the sole national electric utility with more than 1.4 million customers (out of which 1.3 million are residential customers in 31 provinces) is vulnerable to corruption. According to MEC (2017), although DABS has made some important reforms in the last 2 years, the lack of a regulatory framework, sub-optimal revenue collection, outdated and poorly maintained equipment, and losses of 30-35% (DABS, 2016; USEA 2018) impede private sector participation and competition in the sector.

With losses as high as 35%, it will be difficult for DABS to maintain its financial and operational sustainability (USEA and USAID, 2018) or effect large-scale expansion. DABS is undergoing reforms focused on raising revenue to recover costs. Various commercialization initiatives seek to reduce technical and commercial losses to reduce losses to 25%. Losses primarily result from overloaded, outdated, and poorly maintained transmission and distribution networks. According to the DABS 2016 Business Plan, electricity theft and improper metering, billing, and revenue collection have created inefficiencies in the commercial process that add to the losses (DABS, 2016).

To improve the electrification process and support private sector participation, areas that are vulnerable to corruption highlighted by the MEC report and assessments by international development partners require immediate attention. Responses to a set of unstructured interviews conducted with sector experts; current and previous employees of DABS and MEW; customers; and private contractors revealed three types of vulnerabilities to corruption:

1. in procurement, bidding and contract award processes of power sector projects.

2. in approval and processing of invoices of contractors and suppliers during project implementation.

3. at the utility’s customer level, in billing, meter installation, meter reading, extension of distribution networks, transformer installation, fault correction, and application of load shedding.

Vulnerability to Corruption in Bidding and Contract Award Processes

According to people interviewed, instances that illustrate a vulnerability to corruption when GFA Consulting Ltd was contracted as a supervision consultant for the Kajaki 2nd Turbine Installation and engineering supervision consultant for the PTEC transmission line component (Arghandi to Ghazni 220kV transmission lines project). Both of these projects were funded by the USAID through on-budget scheme with DABS. The DABS audit report of 2017 states that the USAID withheld payment of invoices of the consultant of the Kajaki Hydro Power Plant project to undertake an investigation of possible collusion during contract award. Under question were costs of $7.66 million. A SIGAR audit (2018) found that a DABS subcontractor, 77 Construction Company, which worked on the Kajaki 2nd Turbine Installation, could not provide documentation to support competitive procurement or sole source justifications, bringing into question costs of $8.8 million.

Moreover, the temporary suspension of the contract for the implementation of the NEPS–SEPS Connector (220kV transmission line from Ghazni to Kandahar) and the elimination of the bidding process for five substations by USAID were primarily related to corruption and integrity issues within DABS and the overall process of procurement by the Afghan government. People interviewed said that
collusion in the tendering and contract award process of the mentioned projects were the main concerns raised by USAID. Furthermore, interviewees who were aware of the matter said that when President Ashraf Ghani was informed of the details of the procurement process, he asked the previous CEO of DABS to immediately resign. Due to these integrity issues, the completion of the NEPS–SEPS interconnector was delayed by 2 years, and USAID modified the on-budget arrangement of PTEC with DABS. The USAID opted to continue the procurement of five substations through an off-budget scheme (Press Statement by the US State Department (https://www.state.gov/statement-on-accountability-and-anti-corruption-in-afghanistan/).

Contractors of MEW and DABS and sector experts interviewed for this report said that vulnerabilities to corruption in the bidding process are prevalent. The easy accessibility of members of the evaluation committee to bidders enables collusion. As a result, bid evaluation reports can be manipulated or committee members can leak confidential information to bidders prior to submitting final reports.

The role of the National Procurement Authority

The Procurement Law of Afghanistan stipulated the creation of the NPA to primarily oversee, facilitate, and provide technical assistance in procurement proceedings to government ministries and other procurement entities (Article 56, Procurement Law of Afghanistan. Published in the official gazette no (1223) dated September 17, 2016). The NPA also acts as a secretariat to the National Procurement Commission (NPC), which is chaired by the President of Afghanistan and comprised of members of the MoF, Ministry of Justice, MoEc, the parliament, civil society and donor agencies.

According to energy sector experts interviewed, the establishment of NPA and NPC has restricted the level of corruption and fraud in the sector. However, it has not eliminated it nor decreased it by a large extent. The Procurement Law allows ministries and other procurement entities to assign and undertake bid evaluations and send evaluation reports to NPA for review and cross-checking. It does not prevent bid evaluation committee members from colluding with bidders and/or leaking confidential information.

President Ashraf Ghani, through a separate decree, ordered all procurement entities to hand over bid evaluation processes to NPA from the start of the fiscal year 1398 (January 21, 2019) and authorized NPA to evaluate and declare responsive bidders. This was an effort to centralize the whole procurement process of medium to large scale projects in Afghanistan in all sectors. Experts interviewed for this issue questioned NPA’s technical expertise and also expressed concern about centralizing the procurement process in NPA. They feared that with no or little oversight this might increase the level of vulnerability to corruption. Hence, the NPA process on bidding decisions and possible challenging positions should be extremely transparent and continuously monitored by independent actors.

Vulnerability to Corruption During Project Implementation Phase

After contract award, vulnerabilities to corruption during project implementation between contractors and project staff are evident, and no strict oversight mechanisms are in place to prevent corruption. There are opportunities for contractors to push project staff to accept bribes as well as opportunities for project staff to force contractors to pay to get invoices approved and disbursed. A DABS contractor said that if bribes were not paid, payment of invoices were delayed for months. On the contrary, after bribes were paid to employees, invoices of certain contractors were paid on a priority basis, without adequate quality assurance. This type of vulnerability to corruption is found at different levels starting...
from project sites and field employees. The daily interaction among client supervisors, quality assurance engineers, and contractors’ site managers paves the road for bribes and favors. Daily reports and invoices are first reviewed and approved by project engineers of DABS or MEW on site, then they are sent to headquarters for payment processing. This site-level approval by site employees (of clients and contractors) allowed them to negotiate bribe and favor terms. One interviewee said that DABS cannot control or oversee how their project engineers at site deal with contractors. Report indicate that contractors paid client project engineers on a monthly basis or per invoice approval. Contractors also paid for quality assurance, personnel travel, and accommodation costs and take site employees out for dinners and in return, ask for flexibility in approving daily reports and invoices.

At headquarters the contractors have also negotiated with project managers and finance officers of client and financial controllers of MoF to expedite payment processing. Otherwise, according to a sector expert who was interviewed, the invoice would be delayed for months without any reason, or the invoice amount or project code would be intentionally mistyped on payment request forms. One contractor said that it was necessary to chase an invoice step by step to make sure it is sent to MoF for disbursement.

Vulnerability to Corruption at Customer and Utility Level

Given that DABS deals with 1.4 million customers the chances of corruption are high, however, the magnitude of the vulnerability at the customer level is small compared to the other types of vulnerabilities discussed above. Vulnerabilities at this level mainly rise from the street-level discretion of transformer operators, customer service, meter installation, and billing personnel of DABS.

In 2017, MEC conducted structured interviews with 292 customers of DABS, of which 81% expressed opinions that tariffs were not fair, 76% thought that the billing process in DABS was imprecise and not on time, and 64% judged the power distribution process as not transparent (MEC, 2017).

Vulnerabilities to corruption in DABS found at this level also stemmed from weak institutional infrastructure. For instance, when a new customer submits an application form to get connected to the network, a technical team reviews the request and approves the connection. Then the customer service department must process the request within 24 hours after the approval by the technical team. If the connection is technically not feasible because the transformer is overloaded, then the application is put on a waiting list until a new transformer is installed in the area or the current transformer is upgraded. Findings of the MEC (2017) report show that among the pending applications, those given priority were those who paid customer service and meter installation staff. In other instances, when the technical team had to visit the customer’s residence, the technical team prioritized those who paid them or arranged their transportation and food. In Balkh, based on MEC’s findings, a new customer has to wait to get connected to the distribution network because the local DABS offices can only install a limited number of meters per day. This opens the door for bribes by rich and powerful people to speed up their connection and meter installation process.

MEC also reports that DABS has failed to carry out its responsibility to extend distribution lines from poles to meter boxes. In provinces like Nangarhar and Balkh customers were asked to purchase poles and cables at their own cost and pay for the installation expenses, too. In provinces like Parwan, the MEC (2017) stated that, due to local influential people’s interference, distances between poles and meter boxes exceeded 600 meters, which leads to high distribution losses.
Assessment of DABS’s Financial Situation

In November 2018, DABS signed a partnership agreement with MoF to restructure DABS’s debt to MoF as equity shares that are conditioned on performance improvement. According to the World Bank report (2018), DABS’s outstanding debt to MoF was $1.86 billion in principal and interest payments. The World Bank financial analysis of DABS indicated that “the working ratio of DABS increased from 84% to 108% while the operating ratio increased from 93% to 124% between FY2014 and FY2016, warranting urgent action to enhance DABS’s financial strength”. In early 2018 DABS’s receivables surpassed 12 billion Afs, accounting for over 6% of its total asset. This partnership agreement temporarily saved DABS from a precarious financial situation; a 2018 financial analysis showed that without the agreement DABS would not have been able to meet its operating and capital expenses.

This agreement contains 40 reform actions to be taken by both DABS and MoF. These action reforms have specific target deadlines in (i) Governance, ii) HR management, iii) Implementation and monitoring, iv) Customer services, v) Communication, vi) Finance and Accounting, vii) Reduction of technical and commercial losses, viii) Revenue collection, ix) Billing, and x) Restructuring of DABS debt, converting $1.86 billion of DABS debts into the equity of MoF. Most of the target deadlines are no later than December 31, 2020, according to the report (The World Bank, 2018). The conditional debt will push DABS to improve their commercial performance and transition to financial viability. However, strong oversight and supervision are required by the DABS Board of Directors to ensure enhanced performance by the utility.

Overall, it can be observed that DABS’s revenue from sales of electricity have increased from 15.5 billion Afs in 2015 to 25.4 billion Afs in 2018 (DABS Audited Financial Statement, 2018). This is a 61% rise in revenue. However, the excessive direct costs (cost of electricity) and indirect costs (operating expenses) put the business into losses. Figures from DABS’s 2018 financials show that it lost 4.7 billion Afs, and the cost of electricity accounted for 66% of the total costs. Looking at past financials of DABS, this loss trend was not new; it was building for years.

Given that DABS was incurring losses, it was still obliged to bear 17.3 Million Afs as finance cost. The interest-to-cover ratio suggested that there was no profit available to pay. The situation was worrisome, with long-term debt rising from 7.9 billion Afs in 2015 to 25.9 billion in 2018 (Figure 17). Also, the debt-to-equity ratio increased from 39% to 62%. There was also the issue of repayment of the principal amount, and the current asset-to-long-term liability ratio was only 40%.

DABS has also performed poorly in receivables, which increased from 7.28 Billion Afs in 2015 to 12.99 Afs billion in 2017, with a slight decrease in 2018 to 12 Afs billion (See Figure 18). DABS should be aware of the fact the more receivable it has the greater the risk of recoverability.
Conclusion

The energy sector urgently needs to redefine its institutional roles and responsibilities and strengthen its capacity and capability to take on utility, regulatory, and project management functions. The first impact that the irregularities had on the sector was the overall low electrification rate. The majority of the population in Afghanistan still has no access to electricity. For those who have power, access is intermittent and unreliable. More importantly, the sector’s mismanagement and low electrification rate most affect Afghans who live in rural areas, where coverage has not surpassed 11%.

The second alarming consequence of mismanagement is that the Afghans remain heavily dependent on international aid and technical assistance. Afghans are incapable of managing the sector by themselves or to carry out tasks such as policy development, sector planning, project design, procurement, supervision, monitoring and evaluation, and O&M of the national grid without the help of international expertise. Expensive capacity contracts awarded to international consulting firms did not achieve the desired outcomes. Transfer of knowledge did not take place as planned, and frameworks and processes were not institutionalized (Amin, 2017). For instance, the report of an independent audit of DABS’s financial statements stated that DABS had no reliable information on the existence, accuracy, and completeness of data on property, plant, equipment, and inventories, and that DABS lacks a reliable system for determining amounts receivable (SIGAR, 2016). This indicates poor capacity building on the part of international and local advisors and suggests mismanagement of consulting services contracts.

Another important finding of the analysis was the lack of a proper regulatory framework and the absence of a power sector regulatory authority. It took 7 years for MEW to draft and enact the most important law of the sector, that is, the Electricity Services Law. A group of consultants with their Afghan counterparts drafted the Electricity Law for the Afghan power sector in 2008, but the law was not enacted until August 2015, and the most important article of the law, the establishment of the ERA, is yet to be achieved. The inability to enact the law on time and the failure to establish the regulatory authority are manifestations of the diminished institutional capacity of the Afghan energy sector.

An obvious impact of not having a functional regulatory authority in the sector is the absence of private sector participation. Ideally, the private sector should have been able to participate when DABS was restructured in 2008, but without an approved Electricity Law and ERA, their participation was limited. ANDS (2014) highlights that “there is a weak legal and regulatory infrastructure in place to support and monitor investments. Potential investors cite unclear policies and corruption as a barrier to investment”. The report further states that “the majority of services are provided by the 11 State Owned Enterprises (SOEs) and three budgetary units that support energy operations could be implemented by the private sector in ways that are more cost-effective and technically efficient.” Engaging the private sector in the past 3 years, after the enactment of the Public–Private Partnership Law, is considered by sector experts as an unsustainable, ad-hoc solution to the absence of the ERA.

Policy Recommendations

- The vision and strategic goal for the sector defined by the ANDS in 2008 has not been achieved in 11 years. A strong recommitment by policymakers is required to achieve the ANDS goal to build “an energy sector that provides drivers of growth in the economy with long term reliable, affordable
energy based on market-based private sector investment and public-sector oversight” (ANDS, 2014). In order to achieve this goal, we propose the following policy recommendations to sector leaders and stakeholders. These recommendations are based on the analysis undertaken for this report and conclusions derived from other studies and reports.

- Clarify the roles and scope of work of government agencies and the national power utility in the Afghan energy sector (Amin and Bernell, 2018). For the sector to operate effectively, the existing overlap, confusion, and contradiction of mandates of actors have to be addressed. A clearly defined scope of work and mandate for each organization will prevent them from escaping accountability. The sector needs a clear mandate, to provide reliable and affordable electricity, and a framework of accountability for policy makers, executives, and sector leaders. Coordination among ministries in policy, planning, and project implementation cannot be omitted entirely. Thus, mechanisms for coordination among relevant actors should be defined in all laws, policies, and regulations pertaining to the energy sector. Ambiguous coordination mechanisms in the sector will lead to overlap, less accountability, and delay in achieving sector goals.

- Redefine and reorganize the MEW. The current structure of MEW, which has departments for project implementation and WAPECA, does not help advance toward the sector goal. MEW needs to act as a policy maker, not a project implementer or sector regulator. MEW must take ownership of the National Energy Policy and the PSMP and provide the overall policy and planning directions to the sector. The existing Electricity Law stipulates that the ERA will work under MEW. In order to attract private investment and ensure fairness between producers and consumers, it is recommended that the ERA function independently. The separation of policy and planning from regulation is essential for the long-term sustainability of the sector, especially when access to capital and private investments is important. Nonetheless, the establishment of the ERA should be the number one priority for the sector.

- Commence to unbundle the national power utility (DABS). There are various models for unbundling a monopoly national grid company like DABS. It is recommended that DABS should act as the power system operator and retain the transmission network, but that IPPs should be allowed to generate power in future power plants. However, a study is required to make an informed decision about existing power plants. Should they be privatized for IPPs to operate or continue to be owned and operated by DABS? Regarding the distribution networks across Afghanistan, two options are recommended: Lease or outsource the five major distribution networks in Kabul, Herat, Mazar, Kandahar and Nangarhar to private companies for 15 to 20 years while DABS maintains ownership or convert all major distribution networks into private distribution companies. By choosing the second option, more capital and investments can be brought into the sector, which will accelerate the electrification rate and bring efficiency in operation by reducing technical and commercial losses. The transition from DABS’s current monopoly status to allow other state-owned or private companies to participate in the distribution network is illustrated in Figure 19. By unbundling DABS, O&M of the power system, a major challenge for DABS, could become a localized responsibility of the distribution companies while DABS, as a power system operator, would focus on the O&M of transmission network.
Address the nonexistence of a unified, agreed-upon development plan and agenda for the sector. Most of the time, bilateral agreements of development partners with the MoF overlooked the national plans, as happened with the ANDS. It would be for the betterment of the sector for all development partners and relevant government ministries to agree on a single national development plan for the energy sector. This would reduce time for budget allocation, prioritization, and project preparation and also omit overlap and confusion in the coordination of plans. The Self-Reliance through Mutual Accountability Framework and Afghanistan’s National Peace and Development Policy Framework provide common ground on which the Afghan government and the international community can act. The National Infrastructure Plan and the previous NPPs, also called the National Energy Supply Program, are considered as national development plans for the energy sector by the Ministry of Finance. In addition, MEW and DABS have their own 5-year development plans.

This is apart from the Power Sector Master Plan, which is owned by MEW and requires updates every 2 years. These plans require harmonization and internal discussion amongst government ministries so that a unified development agenda can be presented to international development partners.

Create an enabling environment for the private sector and offer incentives for investment in the energy sector. An enabling environment for the private sector requires, first and foremost, the establishment of an independent regulatory authority, the ERA, which will ensure transparency and fairness in licensing, return on investments, and tariffs. Other major concerns to the private sector that must be addressed include land acquisition and fair, efficient processes to obtain approvals from government departments. The private sector expects to see some relaxation in taxes and duties on renewable energy equipment and energy efficient appliances and subsidies in land acquisition. More importantly, the Afghan government should pay attention to assuring the security of the private sector’s staff, field workers, equipment, and plants.

The government should hinder the easy access of evaluation committee members to the bidders for decreasing the chances of corruption in the contract awarding process. Similarly, strict oversight mechanisms need to be introduced for reducing corruption in the project implementation phase including the interaction between the site engineers and the contractors, and timely payment of invoices. In addition, the DABS must ensure that there is transparency in the distribution and installation of electric meters for the customers.
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