



Power sector reform in Afghanistan: Barriers to achieving universal access to electricity

Mohsin Amin¹, David Bernell*

School of Public Policy, Oregon State University, 300 Bexell Hall, Corvallis OR 97331, United States

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ABSTRACT

The electric power sector in Afghanistan suffers from numerous challenges. Roughly 70% of the population has no access to electricity, and 90% of those without electricity live in rural areas. The vast majority of its power is imported from neighboring countries, and is often subject to outages. Since 2002, more than \$4 billion has been spent on Afghanistan's electrification in cooperation with international funders, yet this has not increased electrification to the level anticipated, particularly in rural areas. This study uses the Institutional Analysis and Development framework to examine the policy and institutional barriers to expanding the power grid. Looking at major laws, policies and actors that comprise the energy sector, and the patterns of interaction among them, this study finds that ambiguity, overlaps and contradiction in the scope of work of five government ministries exacerbates the current challenges. Moreover, the lack of a coordinated development agenda among the government of Afghanistan and international partners has led to fragmented planning and implementation of projects, inadequate prioritization of investments, and much of the work being done by consultants or short-term contractors. The result has been low rates of electrification, diminished institutional capacity and minimal private sector involvement in the energy sector.

1. Introduction

The electric power sector in Afghanistan suffers from numerous challenges. Decades of instability and conflict have constrained the country's development, leaving more than one-third of its 32 million people below the poverty line, while 70% of the population has no access to electricity, including 90% of people living in rural areas (ADB, 2015; World Bank, 2015). The average per-capita electricity consumption is between 100 and 150 kW-hours (kWh) per person per year, ranking it among the lowest worldwide (UNDP, 2015). In addition to lack of access, the country's electric power sector is also plagued by reliance on imports, high consumer costs, and unreliability. Roughly 81% of its power is imported from neighboring countries – Uzbekistan provides 35.2%, Tajikistan 30.5%, Iran 20.9%, and Turkmenistan 13.4% (DABS, 2016) – and the cost of imported energy has increased from \$16 million to nearly \$224 million between 2007 and 2015 (ADB, 2015). Of the 519 MW of installed domestic capacity, 51% is thermal (diesel and furnace oil) with a generation cost of \$0.25–\$0.35 per kilowatt hour, which is nearly 4–5 times the cost of imported power. The remaining 49% is from hydropower, a seasonal resource with a capacity factor of less than 40%. No new hydropower, gas or coal

generation has been added since the 1980s (ADB, 2015). In addition, Afghanistan's power grid is quite complex. It operates in nine different “islands” that are supplied by different sources, and these are not interconnected or synchronized (Amin, 2015). The quality of power distributed is also weak, with fluctuating voltages and frequent power cuts, forcing industries and commercial customers to maintain backup in the form of diesel generator sets. This further raises the cost of energy.

Afghanistan is seeking to rebuild and modernize its energy sector, and with the support of the international community, the country has made providing energy to its population a focus of its development efforts. Since 2002, more than \$4 billion has been spent on Afghanistan's power infrastructure and electrification (SIGAR, 2016a). In 2001, it was reported that about 5% of Afghanistan's population had access to electricity with less than 100,000 households connected to the grid, and by 2016, 30% of Afghans have access to electricity, with 1.2 million households connected to the grid (ADB, 2015). The investments made have extended electricity to many people that previously lacked access. This has been largely in urban areas, where roughly 30% of the population lives. The larger challenge involves extending electricity to rural areas, and in building domestic capacity to reduce the reliance on

* Corresponding author.

E-mail addresses: mohsinamin.ice@gmail.com (M. Amin), david.bernell@oregonstate.edu (D. Bernell).

¹ Present affiliation: State Corps Inc., Karte Char, Kabul, Afghanistan. (<http://www.statecorps.com>).

imports in all parts of the country. To that end, significant deficiencies and obstacles to further progress in electrifying the country remain. This is in large part due to institutional, policy and planning problems in the energy sector that have inhibited the goal of achieving universal access to electricity.

Examining the policy and institutional constraints that pose barriers to expanding electrification, this study applies the Institutional Analysis and Development (IAD) framework to understand how the key actors, laws and policies, and patterns of interaction have impacted power sector development and reform in the country. Our findings reveal significant policy and institutional barriers that inhibit progress. First of all, policy ambiguity, mission overlap and contradiction in the scope of work and mandates of five government ministries have exacerbated the current challenges. Second, the lack of a unified, harmonized and co-ordinated development agenda that is also influenced, and often driven, by more than ten international development partners in the power sector have led to poor coordination, along with inadequate and sometimes counterproductive investments. These developments have resulted in low electrification rates, poor prioritization of investments, diminished institutional capacity, and a lack of private investment in the electric power sector.

2. Institutional analysis: a framework

To analyze Afghanistan's electric power sector, this study employs Elinor Ostrom's Institutional Analysis and Development (IAD) framework. The IAD framework is considered to offer an excellent fit with which to examine this problem, which focuses on the institutional arrangements and interactions that affect the electricity sector. There are a number of interpretive lenses that serve to clarify the analysis of public policy formation, such as Multiple Streams Analysis, Advocacy Coalition Framework, Narrative Policy Framework, Rational Choice Theory, and Punctuated Equilibrium Theory (Sabatier and Weible, 2014). Each of these provides alternatives to focus on particular elements of how public policy is adopted and implemented. However, the focus here is on the institutional elements of electricity policy in Afghanistan, not interest group coalitions, public opinion or participation in policymaking, or the role of key individuals ("policy entrepreneurs") in driving policy formation and adoption. For this reason, IAD is the most appropriate framework to employ in this case. It provides a structure to consider the external variables that provide context and shape politics and policy, the "action arena" in which policy development and implementation take place, the patterns of interaction that produce particular outcomes, and the criteria by which these outcomes are assessed (see Fig. 1).

The external or exogenous conditions establish the context of the situation. These include first of all the physical and material conditions that characterize a situation, which are essential to understanding and delimiting the potential outcomes that can be produced and even the information that different actors possess. Second, exogenous conditions also consist of the attributes of a community, which can include culture,

norms, ethnic diversity or homogeneity. These attributes are also comprised of the common understandings that potential participants share about the structure of the political space in which they interact (such as the state of war and violent political conflict that has characterized Afghanistan for decades) (Ostrom, 2014). A third component of the external conditions are the rules-in-use, which refer to the institutionalized and accepted laws, manners, behaviors, attitudes, and regulations by the actors in the action arena. These rules can involve the actors' relative positions vis-à-vis one another, the scope of authority or functional domain, permissible actions, access to information, degrees of freedom or constraint, incentives and costs, and the sanctions for breaking rules (Ostrom, 2011).

The action arena includes key elements for analysis, in particular the actors involved (individuals and institutions) and what is described as the "action situation," the space in which relationships and communication among actors takes place, as well as their positions, motivations and incentives relative to one another. It is in the action situation where individuals (acting on their own or as agents of organizations) observe information, select actions, engage in patterns of interaction, and realize outcomes from their interaction (McGinnis, 2011). According to Ostrom, the action arena is "the social space where participants with diverse preferences interact, exchange goods and services, solve problems, dominate one another, or fight" (Ostrom, 2005). This framing of the concept "enables an analyst to isolate the immediate structure affecting a process of interest to the analyst for the purpose of explaining regularities in human actions and results, and potentially to reform them" (Ostrom, 2011).

The patterns of interaction describe what actually happens in practice among the actors in their various roles and contexts in the action arena. The decisions and actions taken that lead to policy outcomes reflect qualities such as the opportunities, incentives and constraints available to actors, including items such as the accessibility and flow of policy information, organizational structures, the rules-in-use, limitations and adaptations stemming from external variables. Researchers and policy analysts seek to synthesize the information available to understand how the patterns of interaction lead to particular policy outcomes (Polski and Ostrom, 1999).

This framework is useful in examining Afghanistan's power sector in that it offers a mechanism to disaggregate the complexity that has existed in this sector in order to examine the laws, investments, institutions and patterns of interaction among state, private and international actors that have led to present outcomes. Polski and Ostrom (1999) underscore the flexibility of IAD's application in various institutional arrangements or policy situations. The framework does not specify a single method for researchers to follow, rather, it gives a free hand to the researcher to apply it to the respective policy context and facilitates the ability to analyze the situation in a comprehensive way (Polski and Ostrom, 1999). To that end, IAD is a tool that helps to organize diagnostic, analytical, and prescriptive capabilities, and that can be used to analyze and devise policy interventions in a broad variety of political-economic situations so that analysts and other interested participants have a better chance of reversing or mitigating policy failures (Polski and Ostrom, 1999).

3. The external variables: material conditions, community attributes, and rules-in-use

The material conditions of the country, along with key attributes, play an important role in the development of the electric power sector in Afghanistan. There are also several laws and plans that have been adopted to govern the sector. These elements comprise the external variables in this application of the IAD framework.

3.1. Material conditions

The key physical attribute in understanding barriers to

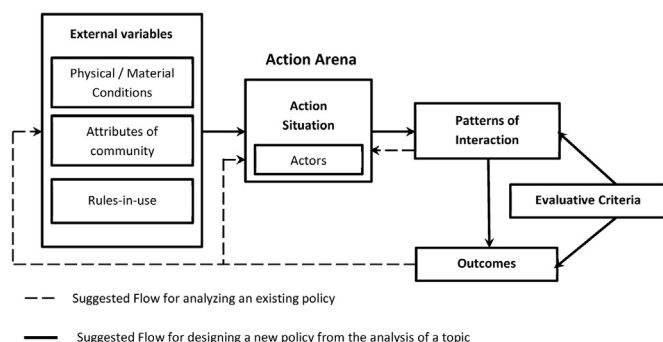


Fig. 1. Components of the IAD framework (Adapted from Ostrom, 2011).

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