

## **Afghanistan Energy Supply Has Increased but An Updated Master Plan Is Needed and Delays and Sustainability Concerns Remain**



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**OFFICE OF THE SPECIAL INSPECTOR GENERAL FOR AFGHANISTAN RECONSTRUCTION**

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This report presents the results of our review of U.S. efforts to develop Afghanistan's energy sector. Years of war and neglect have left Afghanistan's electrical sector in poor condition. Since 2002, U.S. and international donors have invested millions in the construction of energy infrastructure and building capacity to grow and sustain Afghanistan's energy sector. This report reviews the overall energy sector plans and U.S. agency programs in Afghanistan, focusing primarily on the energy assistance program of the largest U.S. contributor to this effort, the U.S. Agency for International Development. The report includes four recommendations for the Director of the U.S. Agency for International Development Mission to Afghanistan to improve the effectiveness of and planning for energy projects in Afghanistan.

A summary of our report is on page ii. The audit was conducted by the Office of the Special Inspector General for Afghanistan Reconstruction (SIGAR) under the authority of Public Law 110-181 and the Inspector General Act of 1978, as amended. When preparing the final report, we considered joint comments received from the U.S. Embassy Kabul and the U.S. Agency for International Development Mission in Afghanistan. Copies of the written comments are included in appendix II of this report.

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# SIGAR

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## Afghanistan Energy Supply Has Increased but An Updated Master Plan Is Needed and Delays and Sustainability Concerns Remain

### What SIGAR Reviewed

Since 2002, the United States has obligated over \$732 million towards rebuilding Afghanistan's energy sector. This report assesses the (1) strategy for prioritizing projects and establishing goals and timeframes, (2) status of Afghanistan's energy sector and U.S. and donor efforts, (3) status of USAID energy sector projects, and (4) coordination of projects between the United States, international donors, and Afghanistan. We conducted this performance audit in Kabul, Afghanistan and Washington D.C., from April to December 2009 in accordance with generally accepted government auditing standards.

### What SIGAR Found

Afghanistan lacks a current Energy Sector Master Plan that establishes priorities, timeframes, and costs associated with energy sector goals. Ambitious goals that guide Afghanistan's energy sector priorities are unlikely to be met in the established timeframes.

Assistance from the United States and other donors' has increased power generation and accessibility in Afghanistan since 2001. Afghanistan's installed energy capacity has grown from approximately 430 megawatts (MW) in 2001 to 1029 MW in September 2009. However, Afghanistan faces several sustainability challenges in maintaining and growing its energy supply. Specifically, the Afghanistan government lacks the ability to collect revenue, which limits their ability to independently operate and expand the power system, and the ability to recruit and retain qualified staff.

The United States has taken steps to address many of Afghanistan's energy generation and capacity issues, but projects have faced delays and increased costs and USAID lacks timeframes and goals for capacity building and operations and maintenance. Several key USAID-funded projects have faced delays and increased costs due, in part, to a general lack of quality assurance oversight and security concerns. USAID is in the process of addressing some of these issues. USAID has established a goal of providing reliable and affordable electricity by increasing operational capacity to 1,000 MW by 2012, but has not set timeframes and goals in other areas, including capacity building and operations and maintenance. Furthermore, metrics have been tracked at the contract level through performance management plans, but relying on these plans has not been an effective method for USAID to assess progress in a strategic manner.

While the Inter-Ministerial Commission on Energy (ICE) coordinates donor activities for the large North and South East Power Systems, information sharing on rural energy projects needs improvement. While U.S. and donor officials that we spoke with concurred that ICE is an effective coordination mechanism; rural electrification has not reached the same level of maturity. For example, coordination mechanisms do not exist between USAID and U.S. Forces-Afghanistan at the project level. In addition, the U.S. and international donors have not agreed on technical standards for rural energy projects, which increases the risk that communities will not be able to connect with one another in the future.

### What SIGAR Recommends

To improve the effectiveness of USAID-funded projects and planning for future energy projects, we recommend that the Director of USAID Mission to Afghanistan take the following four actions: (1) work with the Afghan government and international donors to revise the Afghanistan Energy Master Plan and prioritize project needs, (2) establish milestone targets for capacity building and operations and maintenance support for USAID's energy sector program, (3) ensure that applicable output and outcome metrics are applied consistently among USAID energy projects, and (4) work with U.S. Forces - Afghanistan and international donors to establish common technical standards on rural energy projects. In a joint response, the U.S. Embassy Kabul and USAID Mission in Afghanistan concurred with the recommendations and outlined steps taken and planned to implement them.

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## ABBREVIATIONS

ANDS	Afghanistan National Development Strategy
CERP	Commander's Emergency Response Program
LBG/B&V	Louis Verger/Black & Veatch
MW	Megawatts
NEPS	North East Power System
SEPS	South East Power System
SIGAR	Special Inspector General for Afghanistan Reconstruction
USAID	Agency for International Development



## **Afghanistan Energy Supply Has Increased but An Updated Master Plan Is Needed and Delays and Sustainability Concerns Remain**

This report assesses (1) the strategy for prioritizing projects and establishing goals and timeframes for the development of Afghanistan's energy sector; (2) the status of Afghanistan's energy sector and U.S. and donor efforts, (3) the status of USAID energy sector projects; and (4) the coordination between the United States, international donors, and Afghanistan on energy projects. To accomplish these objectives we reviewed key documents and reports including energy sector status reports, U.S. Agency for International Development (USAID) assessments, and the Afghanistan Inter-Ministerial Commission on Energy meeting minutes. We interviewed USAID and United States Forces–Afghanistan (USFOR-A) officials who manage energy projects and officials from the Afghan Ministry of Energy and Water and Inter-Ministerial Commission on Energy. We also interviewed international stakeholders involved in the development of Afghanistan's energy sector, including officials from the World Bank, Asian Development Bank, and the United Nations Assistance Mission in Afghanistan. Finally, we interviewed officials from the Louis Berger/Black & Veatch Joint Venture (LBG/B&V), a major contractor for USAID's energy projects. We also attended U.S. and international meetings designed to coordinate donor efforts in the energy sector.

For the purposes of this report, the energy sector refers to the construction, rehabilitation, and development of electrical infrastructure systems including generation, transmission, and distribution. This report provides a review of the overall energy sector program in Afghanistan, focusing primarily on the U.S. assistance program. The detailed results of specific energy projects will be addressed in separate SIGAR reports.<sup>1</sup> We conducted our work in Kabul, Afghanistan, and Washington, D.C., from April to December 2009 in accordance with generally accepted government auditing standards. A more detailed discussion of our scope and methodology is included in Appendix I.

### **BACKGROUND**

Years of war and neglect have left Afghanistan's electrical sector in poor condition. Prior to 1978, Afghanistan was able to access approximately 396 megawatts (MW) of power compared to approximately 243 MW of power in 2002. In comparison, the 2007 summer operating capacity of Washington, D.C. alone was 806 MW of power. In 2002, over-one third of electrical power was imported from other countries, and many areas of Afghanistan remained without access to electricity. As of September 2009, the Afghan Energy Information Center estimates that approximately 15 percent of households in urban centers had access to electric power, whereas only 6 percent of rural households

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<sup>1</sup> A report on SIGAR's audits of USAID's assistance to the Kabul Power Plant will be available in January 2010.

had access to electricity.<sup>2</sup> Afghans rely primarily on electricity produced by costly diesel generators as opposed to lower cost options such as imported power or natural gas, hydro, solar, and wind energy which are or could be generated within Afghanistan.

In February 2006, the Afghan government and the international community produced an interim Afghanistan National Development Strategy (ANDS) and Afghanistan Compact that include provisions for developing Afghanistan's energy sector.<sup>3</sup> The ANDS established an overall goal of an "energy sector that provides reliable, affordable energy increasingly based on market-based private sector investment and public sector oversight." ANDS also incorporated the Afghanistan Compact's four benchmarks for Afghanistan's energy development.<sup>4</sup> These target goals include (1) reaching at least 65 percent of households in major urban areas, (2) reaching 90 percent of non-residential establishments in major urban areas, (3) reaching 25 percent of households in rural areas, and (4) covering at least 75 percent of total operating costs through user fees by the end of 2010.

The Ministry of Energy and Water, the Ministry of Mines, the Ministry of Rural Rehabilitation and Development, and the Ministry of Commerce and Industries are involved in the country's energy sector. The Ministry of Energy and Water is in charge of electricity generation, imports, transmission, and distribution; the Ministry of Mines is in charge of oil, gas, and coal; the Ministry of Rural Rehabilitation and Development sponsors numerous energy projects in rural areas; and the Ministry of Commerce and Industries is in charge of liquid fuels.<sup>5</sup> In addition, the Ministries of Urban Development, Finance, and Economy all have roles in ensuring successful energy development in Afghanistan.

The United States has provided over \$732 million for Afghanistan's energy sector. The United States has provided the majority of its assistance through USAID. Since 2002, USAID has obligated approximately \$700 million for projects and programs in the Afghan energy sector. USAID-funded energy projects are primarily managed through its Afghanistan Infrastructure and Rehabilitation Program, which is contracted to the Louis Berger Group/Black & Veatch Joint Venture (LBG B&V). USAID has also awarded several additional contracts with other contractors for rehabilitation of power plants, building energy sector capacity, information management, and promoting clean energy. In addition, USAID funds small-

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<sup>2</sup> The Afghan Energy Information System is a USAID-funded project to manage the collection, analysis, and distribution of information regarding Afghanistan's energy situation and infrastructure development.

<sup>3</sup> An ANDS Energy Sector Strategy was prepared by the Afghan government in February 2008, and a finalized ANDS, incorporating benchmarks from the Afghanistan Compact, was signed in April 2008.

<sup>4</sup> The ANDS outlines the Government of Afghanistan's strategies for security, governance, economic growth, and poverty reduction. The Afghanistan Compact sets forth a framework for international cooperation. Together, the two documents serve as the primary mechanism for coordinating future Afghan and international reconstruction. Energy was addressed under the Social and Economic Development pillar, as one of six topics in the Infrastructure and Natural Resources sector.

<sup>5</sup> The Ministry of Rural Rehabilitation and Development rural development projects are primarily implemented through the National Solidarity Programme, a community-based development program to help communities identify, plan, manage, and monitor their own projects. As of January 19, 2009, 5,704 energy-related projects were performed through the National Solidarity Programme, according to the World Bank. The United States contributes to this program through its donations to the World Bank-managed Afghanistan Reconstruction Trust Fund.

scale energy projects through its Alternative Development and Local Governance Community Development programs. USFOR-A has also provided some assistance to the energy sector, primarily through the Commander's Emergency Response Program (CERP). From October 2004 to June 2009, the Department of Defense obligated approximately \$32 million in CERP funds for energy projects in Afghanistan. Examples of CERP energy projects include solar lamps, micro-hydro projects, and local distribution networks.

## **AFGHANISTAN LACKS A CURRENT ENERGY SECTOR MASTER PLAN**

Ambitious goals currently guide Afghanistan's energy sector priorities and are unlikely to be met in the established timeframes. Afghanistan lacks a current Energy Sector Master Plan that establishes priorities, timeframes, and costs associated with energy sector goals. According to U.S. and donor officials, Afghanistan is in need of an updated Energy Sector Master Plan to prioritize projects and establish reasonable goals and timeframes. According to USAID officials, strategic priorities of the Afghan government are difficult to identify and often vary between different Afghan officials that USAID and other international donor work with to identify needs and priorities. While goals in the ANDS and Afghanistan Compact were established by the Afghan government in coordination with international donors, USAID officials stated that these goals were poorly defined and overly ambitious. One donor stated that the ANDS goals are exaggerated, lack implementation mechanisms, and are based on inaccurate information. In addition, the Afghan government's February 2008 Energy Strategy states that reliable energy data for Afghanistan is scarce. The 2008 strategy further states that until data collection and analysis capabilities are improved, the cost of meeting the ANDS benchmarks cannot be known with certainty.

According to officials from the Asian Development Bank and World Bank, many current activities in the energy sector are ad hoc and not managed in a strategic manner. Further, while an energy sector master plan was funded by the Asian Development Bank in 2004, much of that plan is out of date and does not reflect the current environment. For example, according to the Ministry of Energy and Water's 2007 Power Sector Strategy, the 2004 master plan assumed that Kabul would require 185-200 MW of electricity. However, based on population increases between 2004 and 2007, this requirement significantly underestimates Kabul's current needs.

The World Bank, in its *Summaries of Vulnerabilities to Corruption Assessments*, reports that due to the lack of information it was difficult to establish baselines and priorities for the energy sector.<sup>6</sup> In addition, the World Bank reports that there is no systematic energy strategy and that project development occurs on a discretionary basis, with individual requirements rather than institutional approaches being used. According to one donor official, the Afghan government needs to prioritize projects in a strategic manner to assist donors. The official also stated that some projects are occurring in areas where the need is not as great as other areas. Another donor official we spoke with noted that Afghan officials consistently add critical projects without ranking them in terms of priorities. While the Inter-Ministerial Commission on Energy has a list of funding priorities, the list concentrates on Kabul and

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<sup>6</sup>The *Summaries of Vulnerabilities to Corruption in Afghanistan*, prepared by the World Bank, summarize six completed assessments for various key sectors, government agencies, and core government functions in Afghanistan. The assessment of the energy sector was performed by the Asian Development Bank. *Fighting Corruption in Afghanistan: Summaries of Vulnerabilities to Corruption Assessments*, The World Bank, May 2009.

North East Power System, and is based on Inter-Ministerial Commission on Energy meetings and current developments.

To address concerns with the lack of a strategic approach for project priorities, USAID has stated that it is currently working on identifying constraints and opportunities for energy infrastructure projects at the national and provincial levels within Regional Command – East and Regional Command – South. USAID plans to conduct this work between November 2009 and September 2010 so that it can establish a priority list of projects that will help guide USAID’s investments and provide the information to potential donors.

## **IMPROVEMENTS MADE TO INCREASE ENERGY SUPPLY BUT SUSTAINABILITY IS A KEY CONCERN**

Largely through U.S. and donor assistance for power import negotiations, power generation, and transmission lines and distribution, the energy supply in Afghanistan increased by an estimated 139 percent between 2001 and 2009. However, major sustainability concerns for the maintenance and growth of the energy supply exist. Key issues that impact the Afghan government’s capabilities to sustain energy sector improvements include: the ability to collect sufficient revenue from end users and capability to conduct and maintain on-going operations.

### **Afghanistan Energy Supply Increased**

Afghanistan’s installed electrical capacity has increased in the last eight years by an estimated 139 percent, primarily as a result of the assistance provided by the United States and international donors. Specifically, USAID’s activities to build electrical production capabilities have directly contributed 199 MW of energy capacity, nearly 20 percent of Afghanistan’s total installed energy capacity. In 2001, Afghanistan’s installed energy capacity was approximately 430 megawatts (MW) <sup>7</sup> compared to 1,028.5 MW as of September 2009. <sup>8</sup> Figure 1 shows Afghanistan’s total energy production from 2006 through July 2009, including domestic production (thermal and hydro) and imports, as reported by the Afghan Energy Information Center. According to data provided by the Afghan Energy Information Center, Afghanistan’s domestic energy production has continued to increase since 2006. In three years, Afghanistan has increased its domestic energy production by nearly 100,000 (MWH) of electrical power. In August 2009, Afghanistan produced approximately 180,415 of electricity compared to 88,804 MWH of electrical power in August of 2006. <sup>9</sup>

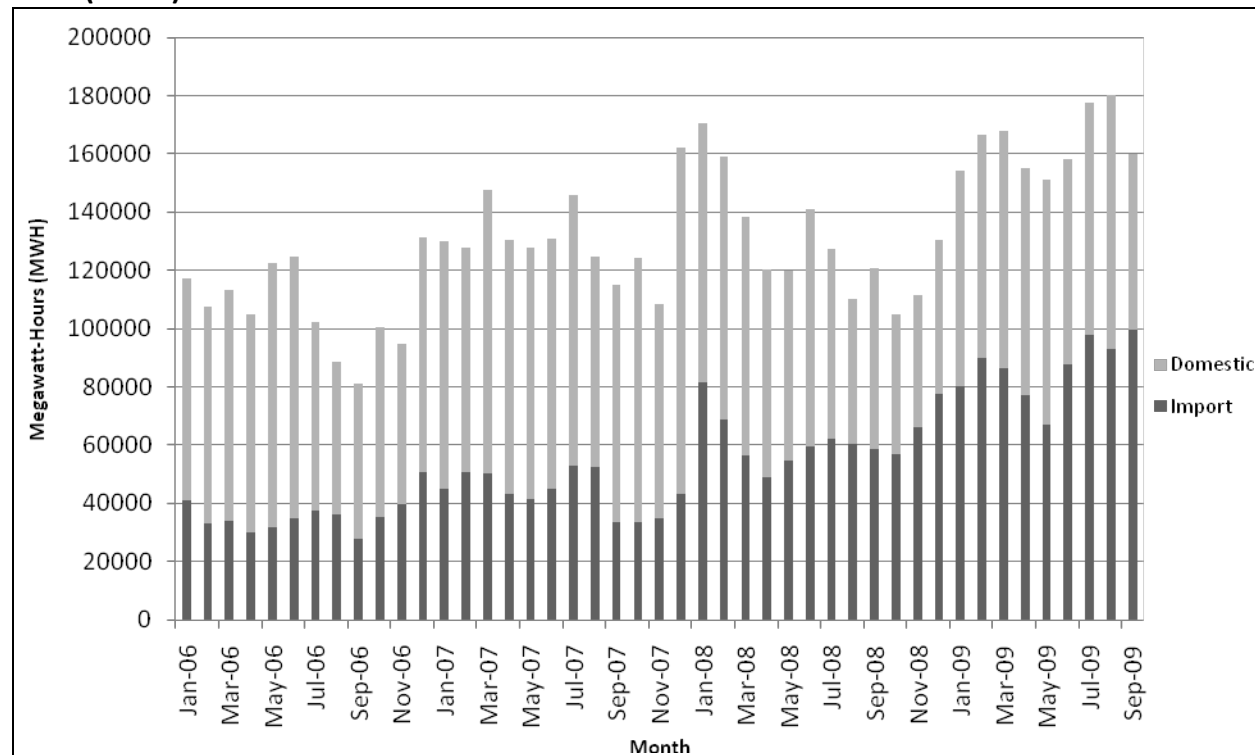
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<sup>7</sup> A megawatt (MW) is a unit of electric capacity.

<sup>8</sup> This amount increased significantly with the December 2009 commissioning of the USAID-built Kabul 105 MW Power Plant, also known as the Tarakhil Power Plant.

<sup>9</sup> A megawatt-hour (MWH) is a unit of electric energy produced by one megawatt operating or producing electricity for one hour.

**Figure 1: Afghanistan Domestic Energy Production and Imports, January 2006 to September 2009 (MWH)**

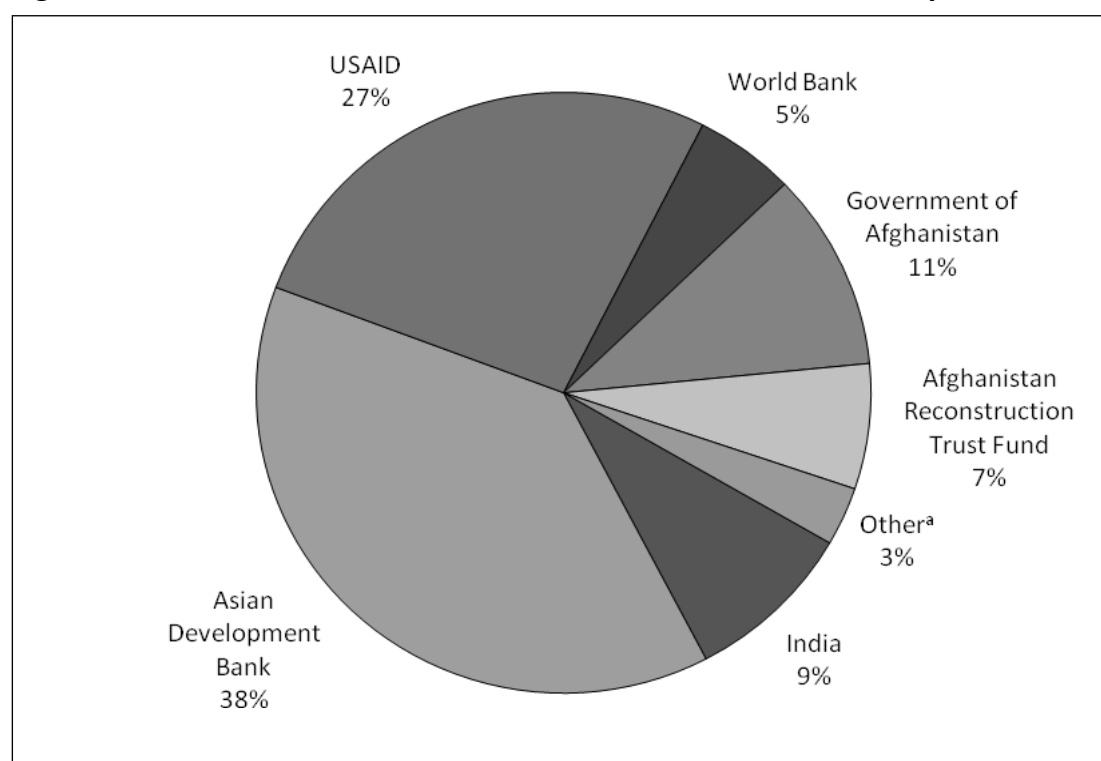


Source: SIGAR analysis of Afghan Energy Information Center data.

The largest energy project funded by the United States and international donors is the ongoing construction of the North East Power System (NEPS). The NEPS program was established to provide lower-cost power to cities and towns in the northeast portion of Afghanistan, including Kabul. A large part of NEPS development involves the construction of power lines and distribution systems needed to import power from neighboring Tajikistan, Turkmenistan, and Uzbekistan at significantly lower cost than diesel powered sources of electricity.<sup>10</sup> The Afghanistan government and U.S. and international donors have been working to establish long-term power purchase agreements with Uzbekistan, Tajikistan, and Turkmenistan. Power-sharing agreements with these neighboring countries could eventually yield a total of 900 MW of daily imported power, according to the May 2009 USAID Energy Strategy. USAID has obligated \$3.75 million to provide the Ministry of Energy and Water with technical assistance in obtaining imported power. Figure 2 shows contributions and commitments by donors to the NEPS. The United States has funded an estimated \$423 million for the NEPS through USAID. Of this amount, 62 percent (\$260 million) has been provided for power generation and 12 percent (\$51 million) for transmission lines and distribution. The remaining 26 percent (\$112 million) was provided for other purposes including technical assistance for the power purchase agreements, a national load dispatch and control center, and a reactive power compensation system.

<sup>10</sup> For example, total generation cost for diesel generators range from \$0.20 to \$0.46/kWh based on 2009 prices, whereas power imports from Uzbekistan cost \$0.07/kWh.

**Figure 2: Contributions and Commitments to the North East Power System, as of July 2009**



Source: Inter-Ministerial Commission on Energy data.

Note:

<sup>a</sup>Other includes the Islamic Development Bank and the KfW German Development Bank.

The Afghanistan's 2005 Power Sector Master Plan identified the import of power as a short and medium term replacement to costly diesel generators. According to the May 2009 USAID Energy Strategy, power sharing agreements with Afghanistan's neighboring countries and supporting infrastructure projects could eventually yield a total of 900 MW of power. Agreements are in place to import 370 MW of the potential 900 MW of power available. USAID has played a key role in assisting the Afghanistan government in negotiating agreements with Uzbekistan and Tajikistan for about 370 MW of imported power through NEPS. Of this amount, 70 MW of Uzbekistan power is currently flowing through NEPS to Mazari-e-Sharif (30MW) and Kabul (40MW). However, Afghanistan lacks the infrastructure to utilize the potential 300 MW of power from Tajikistan.<sup>11</sup> The Asian Development Bank and other donors have committed to begin building the necessary infrastructure to import power from Tajikistan. In addition, the next phase of the agreement between the Afghanistan and Uzbekistan governments, which according to USAID was under negotiation in December 2009, may result in the import of up to an additional 180 MW of power from Uzbekistan in the near future.

USAID has also funded additional projects for NEPS. For example, USAID is funding construction at the Kabul 105 MW power plant, reactive power compensation system, and the national load control

<sup>11</sup> In 2008, the Afghanistan Government signed a 20-year power purchase agreement with Tajikistan for 300 MW of power for 7 months a year.

center.<sup>12</sup> In addition to assisting with power import negotiations, USAID has projects underway for the installation, rehabilitation, and operations and maintenance of several power plants throughout Afghanistan. One of these plants is the Kabul 105 MW Power Plant, which was commissioned in December 2009 with its full capacity of 105 MW.

According to USAID, other significant energy projects funded include (1) the South East Power System (SEPS) including major renovations to the Kajakai Dam which, once completed, will provide power to an estimated 800,000 people in Helmand and Kandahar provinces; (2) the Afghanistan Clean Energy Program, awarded September 2009, designed to provide clean energy solutions for approximately 300 communities in South and East Afghanistan; (3) the Afghanistan Energy Capacity Building program, which trained nearly 2,000 Afghan government staff in technical energy fields during FY 2009; (4) the rehabilitation of Darunta Hydropower Plant, the main power source for Jalalabad; and, (5) natural gas field exploratory and investor work in the Sheberghan region of Afghanistan.

### **Afghanistan Government Lacks the Capability to Collect Revenues to Fund Fuel Costs and Operations and Maintenance Expenses**

While the United States and other donors have funded or committed approximately \$1.6 billion to the NEPS system, the Afghan government is unable to fully fund operations and maintenance of the donor-provided facilities. The Afghanistan government lacks the capability to collect the revenue needed to fund current and expected fuel costs and operating and maintenance expenses. This has resulted in the need for the United States and other donors to spend millions on such expenses to ensure the operations and maintenance of its projects. For example, according to the Afghan Energy Sector Strategy, the energy sector lost \$128.5 million in revenue in 2005 due to poor commercial operations. In another example, USAID estimates that the Kabul Electricity Directorate alone lost approximately 60 percent or \$125 million in revenues in 2008 and without changes this loss could rise to \$275 million annually by 2015.<sup>13</sup>

Afghanistan's operational capacity (621.4 MW) is at 60 percent of its installed capacity ( 1028.5 MW) and the United States is continuing to fund the operations and maintenance of completed USAID projects that have contributed to the installed capacity.<sup>14</sup> In addition, of an estimated \$139.2 million identified for operations and maintenance of NEPS, only \$27.2 million (19.5 percent) was funded by the Asian Development Bank, as of July 2009. The remaining \$112.0 million is listed as a critical need for the operations of NEPS and is for key items such as equipment and spare parts. Numerous power generation units are operating at below installed capacity due to issues in fuel, water, and rehabilitation.

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<sup>12</sup> A reactive power compensation system is necessary to control the NEPS voltage level, minimize system losses, and maximize power transmitted through NEPS. A national load control center will allow the Afghans to monitor data and control the various elements within NEPS substations and power stations to ensure safe and efficient operation of the power supply network.

<sup>13</sup> USAID stated that its estimates are understated because they do not take into account depreciation, under-spending on staff salaries and maintenance, and fuel contributions by the United States, all of which would further increase losses.

<sup>14</sup> Installed capacity is the maximum megawatts that can be produced. Operational capacity is the current amount of megawatts able to be produced.

For example, plants in Qalat, Lashkar-Gah, and Kandahar have an installed capacity of 32.0 MW combined. However, due to low fuel levels, the operating capacity of these plants as of July 2009 was 20.0 MW, or 62.5 percent of installed capacity. Between April 2007 and May 2009, USAID spent an additional \$15.2 million for operations and maintenance of these and other donor-built power plants and plans to spend an additional \$15.3 million through April 2011. This shortfall occurred because the Afghanistan government only budgeted \$40.0 million although Afghanistan's fuel needs through 2010 are estimated at \$57 million. As a result, USAID provided \$27 million, originally intended to fund projects through the Afghanistan Reconstruction Trust Fund, to pay for fuel needed for power generation. Of this amount, USAID has spent \$15.6 million to provide fuel for Kabul power generation.

Corruption in the energy sector affects Afghanistan's ability to collect revenue. According to USAID, a major point of corruption in Afghanistan is the electrical distribution systems/processes. Corruption examples include extra fees for connections, bribes to meter readers, bypassing of meters, and incomplete revenue returns to Central Ministry of Energy and Water. The Asian Development Bank, in the World Bank's Summaries of Vulnerabilities to Corruption Assessments for the energy sector, cited numerous weaknesses in Afghanistan's management of the energy sector which leave it susceptible to corruption. The Bank cited examples of patronage for ministry jobs, consumer expectations of bribes to pay for utility services, and investor expectations of demands and bribes. For example, according to Bank reporting, as many as 25 signatures are required in order to secure an electricity connection in Kabul through the official procedures. However, according to the Bank, no signatures are required for connections obtained through personal connections or bribes. In addition, according to an Inter-Ministerial Commission on Energy report, a customer is required to request permission from the Minister or a Deputy Minister at the Ministry of Energy and Water to receive permission to access the distribution system. The cost to obtain permission to build a connection could well exceed the actual cost to connect to the distribution system, according to the Inter-Ministerial Commission on Energy report.

Both the United States and other international donors have sought to develop the Afghan government's ability to operate electric utilities on a commercial basis. According to USAID, one of the key steps in reducing commercial losses, minimizing corruption, and increasing revenue collection is the transfer of assets from the state-owned Da Afghanistan Breshna Moassessa to a commercialized entity, Da Afghanistan Breshna Sherkat (DABS). In September 2009, with the support of USAID and other donors, the assets were transferred to the commercialized entity. In another example, according to USAID, they are providing support to the commercialized DABS through a 2.5-year, \$52 million contract designed to improve management, staffing structure, metering, and revenue collection at the entity. Similar work is underway at the Kandahar division of DABS to rehabilitate the urban grid.

### **Afghanistan Government Lacks an Experienced Workforce for Maintenance and Development of Energy Sector**

The Afghan government also lacks an experienced workforce. According to U.S. Forces Afghanistan officials, the management and operational capacity of the Ministry of Energy and Water and Da Afghanistan Breshna Sherkat, the national electric utility, is extremely weak due to an aging labor force and a shortage of educated young people to enter the skilled labor, technical, and professional ranks. The Summaries of Vulnerabilities to Corruption Assessments also report that due to decades without skills upgrading or exposure to modern technical approaches in energy development, human capacity at both the technical and managerial levels is weak. Furthermore, the summaries report that sound sector

development is impeded by a lack of human capacity, incentive based pay, and competitive salaries. For example, officials at the USAID-funded Afghanistan Energy Information Center are planning to transfer functions from the center to the Afghan Ministry of Energy and Water. However, officials noted that one of the challenges is the ability to ensure that staff remain with the ministry once the office is turned over to the Afghan government due to the differences in pay between the Afghan government and contractors. USAID has paid for capacity building in some of Afghanistan's diesel power plants. However, in March 2009, a contractor reported that it had lost trained diesel power plant employees due to better paying jobs elsewhere.

USAID has taken several initiatives to improve the capabilities of the Afghan workforce in the energy sector. Specifically, USAID has contracted engineering specialists to provide training to Ministry of Energy and Water and Da Afghanistan Breshna Sherkat, and to build a training institute for energy sector workers.<sup>15</sup> In addition, all individual USAID contracts and task orders include a component of capacity development, according to USAID officials.

### **MOST ON-GOING USAID ENERGY PROJECTS HAVE NOT MET SCHEDULED COMPLETION DATES AND USAID LACKS PROGRAM METRICS TO FACILITATE ASSESSMENTS**

Several key USAID-funded energy projects have faced delays and increased costs due in large part, to a general lack of quality assurance oversight and security concerns. In fiscal year 2009, USAID had 6 active infrastructure projects underway for the energy sector valued at an estimated \$422.6 million. As shown in table 1, all but one of these ongoing USAID projects have not met scheduled completion dates. In addition, donors have also cited issues regarding security and a lack of qualified contractors to perform work. According to an Inter-Ministerial Commission on Energy report, most NEPS energy projects in Afghanistan have faced delays ranging from 3 to 6 months. Reasons for delays include poor contractor performance, poor contract oversight, and security concerns.

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<sup>15</sup>This is a \$17.2 million contract for three years with Advanced Engineering Associates, International.

**Table 1: Status of Fiscal Year 2009 USAID Energy Sector Infrastructure Projects**

Project	Total Estimated Cost (in millions)	Start Date	Original Completion Date	Estimated Completion Date	Note
Kajakai Hydro Power Plant Rehabilitation	\$47.9	1/1/2007	6/30/2008	10/31/2009	Contract ended <sup>a</sup>
Kabul 105 MW Power Plant	\$300.8	7/31/2007 <sup>b</sup>	8/31/2009	5/31/2010	Behind Schedule <sup>c</sup>
Sheberghan Gas Fields Development	\$11.9	2/7/2008	4/30/2009	6/9/2009	Terminated for convenience on 6/1/2009
Reactive Power Compensation	\$24.1	6/10/2008	6/9/2009	11/30/2010	Behind Schedule
National Load Control Center	\$28.1	6/10/2008	2/28/2010	5/31/2010	Behind Schedule
Darunta Hydro-Electric Power Plant Rehabilitation	\$9.8	8/1/2008	1/31/2010	1/31/2010	No change in schedule

Source: SIGAR analysis of USAID contracts and contractor schedules.

Notes:

<sup>a</sup> At the completion of this contract, the original project requirements were not met. While the project has rehabilitated two turbines generating 33 MW, the installation of an additional power generation unit will not be completed by the contractor due to security issues. Furthermore, under USAID's Rehabilitation of Economic Facilities and Services program, USAID spent an additional \$41.8 million for this power plant project.

<sup>b</sup> A definitive contract issued on July 31, 2007 for task order 9 superseded the letter contract initially issued on May 24, 2007. The letter contract's total value was \$29.3 million which was incorporated into the definitive contract.

<sup>c</sup> While 105 MW of power was commissioned and connected to the grid on 12/8/2009; additional work remains in order to complete the project on 5/31/2010.

The Sheberghan gas fields development project represents a particularly interesting case. At the point of the termination for convenience, the United States had spent \$7.1 million on the project. According to USAID, the termination for convenience was due to subcontractor nonperformance. However, LBG/B&V officials stated that the termination was at the convenience of the U.S. Government and that there were project delays caused by Afghan customs issues, security issues, and the need to negotiate assumption of certain project risks by the Afghan government. This cancellation has significant implications for Afghanistan's future energy independence since natural gas represents an indigenous energy resource which experts estimate could, in theory, meet the country's demand for low cost power for decades to come if properly developed. USAID officials stated that they felt the funds would be better spent by setting up a public-private partnership to build a power plant.

## Most Energy Projects Lack Independent Quality Assurance Programs

USAID lacks independent quality assurance on most energy projects. Since 2002, USAID's annual Federal Managers' Financial Integrity Act certification has noted that security restrictions have limited USAID's ability to visit projects sites and monitor implementation in an adequate manner. In its fiscal year 2008 certification, USAID noted that the limited monitoring leaves USAID programs susceptible to fraud, waste, and mismanagement of resources. For projects under the Afghanistan Infrastructure and Rehabilitation Program contract, USAID has relied on the contractor to provide reports and oversight. However, that reporting has not always been timely or sufficient. For example, in January 2009, USAID notified LBG/B&V that it was not receiving critical information in a timely manner. In another example, a USAID Inspector General report found that due to a lack of on-site quality assurance at the Kabul 105 MW Power Plant, USAID was not fully aware of problems with the project.<sup>16</sup> We found that while USAID reportedly conducted major site visits approximately once a month, it did not have independent on-site quality assurance for most projects. Even though USAID has hired a contractor to perform independent oversight services for some of their projects, only one energy project, the Darunta Power Plant, had received independent oversight by the contractor as of June 2009. According to USAID, in July 2009, quality assurance personnel began working on the Kabul 105 MW Power Plant. In addition, USAID's work at the Kajakai Hydropower Plant received quality assurance engineering on an ongoing basis.

## Security Concerns Impact Progress and Costs

Security issues have prevented some projects from being completed on schedule. According to LBG/B&V, the deteriorating security, particularly in the south and east of Afghanistan has increased cost and delayed schedules. For example, in LBG/B&V's first task order for operations and maintenance of diesel plant operations, mostly in southern Afghanistan, security costs were about 9 percent of the total task order award. In the follow-on task order, security costs accounted for almost 30 percent of the task order's value. According to LBG/B&V, as of August 2009, there have been a total of 207 casualties under the Afghanistan Infrastructure and Rehabilitation Program.<sup>17</sup>

The Kajakai Hydropower Plant demonstrates the impact of an insecure environment on the costs and schedule of a project. According to a USAID Inspector General report, security issues at the Kajakai Hydropower Plant have contributed to delays and increased costs for air and military ground transportation and other things. Due to poor security conditions, the road to Kajakai was unsafe to move equipment and resulted in the need to airlift equipment to the site. The USAID Inspector General report estimates that the use of airlift instead of ground transportation increased USAID's cost by nearly \$7 million. To move large parts that could not be done using airlift, USAID required the assistance of International Security Assistance Forces convoy capabilities, at a reported cost of approximately \$1 million. In addition, due to kidnapping threats, the Chinese subcontractor that was rehabilitating one power generation unit and installing another was directed in November 2008 by the Chinese government to withdraw its staff from the jobsite. Furthermore, the potential power generated by

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<sup>16</sup> USAID Inspector General, *Audit of USAID/Afghanistan's Power Sector Activities Under its Afghanistan Infrastructure Rehabilitation Program*, Report No. 5-306-10-002-P (Manila, Philippines: Nov. 10, 2009).

<sup>17</sup> Casualties include individuals wounded, killed, or kidnapped. LBG reported to us that it has experienced 195 killed, 286 wounded, and 28 kidnapped over the last 9 years in Afghanistan.

Kajakai, once a third turbine is installed, cannot be fully utilized until an additional transmission line is built. Due to security threats along the road to the dam, that transmission line has not been built.

### **USAID Is Taking Steps to Address Causes for Project Delays**

In March 2009, following schedule delays and dissatisfaction with LBG/B&V's performance, USAID conducted its own review of its Afghanistan Infrastructure Rehabilitation Program contract and recommended changes in USAID's contract management such as, increasing contractor competition and improved oversight. Based on discussions with USAID program and contracting officials, the implementation of many of these recommendations is in process. For example, according to USAID officials, the agency plans to restructure its contracts to increase competition. For future contracts, rather than one indefinite quantity contract encompassing multiple sectors, USAID plans to issue separate sector contracts. This is designed to allow for multiple contractors to bid on each USAID project. According to the review, although USAID had established independent oversight on many of Afghanistan Infrastructure and Rehabilitation Program's task orders, the energy projects lacked independent oversight. USAID officials indicate that they are addressing this issue by requesting that their contractor, International Relief and Development, provide oversight at energy projects. According to USAID officials, oversight reporting by the contractor was expected to be in place by November 2009.

### **Additional Metrics Needed to Assess Project Effectiveness**

While USAID has established a goal of providing reliable and affordable electricity by increasing operational capacity to 1,000 MW by 2012, it has not set timeframes and goals for capacity building and operations and maintenance. Since 2007, USAID has tracked three output metrics for energy programs in Afghanistan: (1) capacity constructed or rehabilitated; (2) number of people with increased access to modern energy services; and (3) number of people receiving U.S. government supported training in energy.<sup>18</sup> Table 2 below provides USAID's three targets and results from 2006 through 2008. While USAID tracks and reports these metrics, additional output and outcome metrics are specifically related to individual contracts and metrics within performance management plans.

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<sup>18</sup> In fiscal year 2006, only capacity constructed or rehabilitated was tracked. While additional metrics were established in 2007, data was not available until fiscal year 2008.

**Table 2: USAID Energy Program Targets and Results, fiscal years 2006 through 2008**

Indicator	Baseline Year	2006 Result	2007 Target	2007 Result	2008 Target	2008 Result	2009 Target	2009 Result
Capacity constructed or rehabilitated (MW) as a result of U.S. Government assistance	2006	58.0	25.0	19.3	14	51 <sup>a</sup>	100	105.0
Number of people with increased access to modern energy services as a result of U.S. Government assistance	2007	--	n/a	n/a	100,800	415,300 <sup>a</sup>	1,870,000	2,060,000
Number of people receiving U.S. Government supported training in technical energy fields	2007	--	n/a	n/a	10	48	941	2,209

Source: USAID data.

Note:

<sup>a</sup> According to USAID, these numbers for 2008 results represent capacity and access to services that were maintained by USAID during fiscal year 2008 rather than expanded capacity and access to services.

Relying on the performance management plans and contract specific metrics has not been an effective means for USAID to assess overall progress in a strategic manner because they are not consistently tracked or applied to all relevant projects. For example, the performance monitoring plan for the Afghanistan Infrastructure and Rehabilitation Program includes 5 output indicators and 5 outcome indicators for the energy sector program. However, these indicators were not consistently tracked in the first two years of the program. Specifically, the Afghanistan Infrastructure and Rehabilitation Program contract was awarded in August 2006, with the first energy task order awarded in January 2007, but the performance monitoring plan was not agreed upon until March 2009 and the first report produced in May 2009. According to a USAID review, the baseline and performance data were not consistently tracked until March 2009. Other relevant metrics that were not tracked across all USAID energy projects includes: full-time Afghan jobs created, capacity maintained, household income, average hours of daily electricity service, and weighted average cost of electric energy supplied to the grid. The tracking of these metrics would enable USAID to better assess progress of their overall energy assistance program. In our review of other USAID projects, we found that contractor reporting of all relevant output or outcome indicators was not required. For example, the only required contractor tracking and reporting for the Darunta Power Plant was for MW rehabilitated at the end of the project. Contractor reporting of other relevant metrics, such as the number of people trained and Afghan jobs created was not required in the contract. In another example, USAID's capacity building program for the energy sector, does not track the number of Afghan jobs created.

## **COORDINATION ON LARGE PROJECTS, BUT LIMITED INFORMATION SHARING ON RURAL ENERGY PROJECTS**

While the Inter-Ministerial Commission on Energy coordinates donor activities for the North East Power System (NEPS) and South East Power System (SEPS) projects, information sharing on rural energy projects is weak. For example, U.S. Forces Afghanistan and USAID do not share information on their energy projects at the project level. Specifically, USAID does not have complete knowledge of energy projects that have been conducted by U.S. Forces Afghanistan under the CERP program. In addition, donors have noted the need to coordinate to establish common technical standards for rural energy projects. Such standards would allow for donor projects to standardize spare parts and operations and maintenance, and allow communities to eventually connect with one another through compatible systems.

Efforts on Afghanistan's largest systems, the NEPS and SEPS are well coordinated. The Inter-Ministerial Commission on Energy was created by presidential decree in October 2006 to provide oversight of the energy sector policy and infrastructure investments, including coordination of international support. USAID and international donors provide the Inter-Ministerial Commission on Energy with assistance to track progress, provide reports, and identify problems and funding gaps. Afghan, Asian Development Bank, and United Nations officials all stated that coordination through the Inter-Ministerial Commission on Energy has been effective. A U.S. Embassy official stated that compared to other sectors, the Inter-Ministerial Commission on Energy has worked well and could be a model for coordination. In June 2009, SIGAR attended the monthly Inter-Ministerial Commission on Energy meeting as an observer and found that key stakeholders on the NEPS and SEPS and representatives from Afghan ministries were all engaged. This meeting also provided attendees with information from key contractors on the status of U.S. and international donor projects.

Coordination on rural energy projects has not reached the maturity of coordination efforts for the NEPS and SEPS programs. Rural energy is a key component in expanding access to energy. USAID estimates that 28 million people, mostly rural poor, have no access to reliable, modern forms of energy and instead rely on wood and dung for fuel. In August 2008, the Inter-Ministerial Commission on Energy established a rural electrification subcommittee in order to provide access to energy services for the rural population and to explore Afghanistan's potential in alternative energy sources. As part of the Afghanistan Compact goals, the Afghan government committed to create a plan for the development and use of renewable energies by the end of 2007. One of the subcommittee's tasks is to develop this plan but, according to USAID, as of September 2009, this has not been done.

USAID and other entities have recently taken some steps to improve coordination. The U.S. Embassy in Kabul established an infrastructure working group to coordinate the efforts of State, USAID, and U.S. Forces Afghanistan, which includes the coordination and planning of energy infrastructure projects. According to USAID, the group plans to create an energy program strategy to better coordinate their efforts. In addition, USAID's Afghanistan Clean Energy Program received direct input from provincial reconstruction teams on rural energy projects. Finally, USAID also participates in the CERP board for project approval and both agencies are members of the Inter-Ministerial Commission on Energy.

Despite efforts by USAID and U.S. Forces Afghanistan to coordinate their activities in the energy sector, additional information sharing is needed. SIGAR and Government Accountability Office reports have noted the difficulties in information sharing between U.S. agencies. In July 2009, SIGAR found that U.S.

agencies and commands lack a common integrated project management system that can share information between various reconstruction actors in order to improve coordination. While key U.S. agencies and commands have individual management information systems, there is no integrated system which would provide the necessary level of information sharing for decision-makers.<sup>19</sup> In May 2009, the Government Accountability Office reported that while mechanisms exist to facilitate coordination, U.S. Forces Afghanistan and USAID lack information that would provide greater visibility on all U.S. government development projects in Afghanistan.<sup>20</sup> As of July 2009, information on CERP projects was not directly provided to USAID. While USAID has representatives at the Provincial Reconstruction Teams and CERP boards, this does not ensure that all project information is provided to decision makers and implementers at USAID. These reports made several recommendations for improvement. In response to the Government Accountability Office and SIGAR reports, officials indicated that the implementation of the recommendations is in progress.

Furthermore, U.S. agencies and international donors have not established common technical standards for rural energy projects. U.S. and donor officials we interviewed cited the need for common technical standards. According to the Asian Development Bank, common technical standards would allow rural energy projects done by various donors and agencies to achieve standardization of spare parts, operations and maintenance. According to an official from United Nations Assistance Mission Afghanistan, a lack of common technical standards increases the risk that communities will face compatibility issues and will be unable to connect with one another. A German Technical Cooperation official, who also assists the Afghans on the Inter-Ministerial Commission on Energy rural electrification subcommittee, commented that while technical standards are important, enforcement of these standards is also necessary.

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<sup>19</sup> *A Better Management Information System Is Needed to Promote Information Sharing, Effective Planning, and Coordination of Afghanistan Reconstruction Activities*, SIGAR Audit-09-3, July 30, 2009.

<sup>20</sup> *Military Operations: Actions Needed to Improve Oversight and Interagency Coordination for the Commander's Emergency Response Program*, GAO-09-615, May 18, 2009.

## CONCLUSIONS

Afghanistan will need continued investments by the United States and donors in order to accomplish its energy goals. Years of neglect cannot be overcome until the Afghanistan government has the capability to recover costs, expand its capabilities, and conduct operations and maintenance of the energy sector. Until that time, Afghanistan will continue to rely heavily on donor funds in order to ensure that investments do not fall to waste. Nevertheless, there are steps that the United States can take to improve the effectiveness of its assistance program and help Afghanistan reach realistic goals and timeframes and establish common technical standards for rural energy projects.

## RECOMMENDATIONS

To improve the effectiveness of USAID-funded projects and planning for future energy projects, we recommend that the Director of the USAID Mission in Afghanistan take the following four actions:

- Work with the Afghan government and international donors to revise the Afghanistan Energy Master Plan to include realistic goals and timeframes based on prioritized project need, costs, and benefits;
- Establish milestone targets and metrics for capacity building and operations and maintenance support for USAID's energy sector program in Afghanistan;
- Ensure that applicable output and outcome metrics are applied consistently amongst USAID projects, and
- Work with U.S. Forces – Afghanistan and international donors to establish common technical standards on rural energy projects.

## COMMENTS

U.S. Embassy Kabul and USAID Mission in Afghanistan each provided joint written comments on a draft of this report. Both US Embassy Kabul and USAID Mission in Afghanistan submitted separate written comments, but the comments themselves are identical to each other. We have included both identical sets here to demonstrate that both express joint concurrence with the report's findings. The Embassy's Coordinating Director for Development and Economic Affairs and the USAID Mission Director noted that the effectiveness of future USAID-funded energy projects and the planning for these projects could be improved by implementing SIGAR's four recommendations. In their comments they outlined actions taken and planned in response to those recommendations. The U.S. Embassy and USAID Mission also provided technical comments which SIGAR has incorporated into the report, as appropriate. SIGAR also provided a draft of this report to United States Forces Afghanistan who did not have any comments.

Key actions planned by USAID include:

- Working with the Asian Development Bank and the Inter-Ministerial Commission on Energy to update Afghanistan's Energy Master Plan by June 2011;

- Work with the Ministry of Energy and Water to develop a strategy by April 2010 that will establish milestone targets and metrics for capacity building and operations and maintenance support;
- By April 2010, expand the number of indicators that are tracked across USAID's energy portfolio, and
- By 2011, establish common technical standards for rural energy projects in coordination with the Afghan government, U.S. Forces – Afghanistan, and donors.

We believe that these actions, if fully implemented, are an important step in ensuring that U.S. investments in Afghanistan's energy sector are planned effectively, their impacts measured, and that the Afghans are able to independently operate and maintain the sector.

## APPENDIX I: Scope and Methodology

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To assess the strategy for prioritizing projects and establishing goals and timeframes, we reviewed the Afghanistan Compact, the ANDS, Afghan government's energy sector strategy, and the Ministry of Energy and Water's energy strategy.

To assess the status of Afghanistan's energy sector and U.S. and donor efforts, we reviewed documentation from the Afghanistan Energy Information Center, the Inter-Ministerial Commission on Energy, and USAID. In addition, we met with officials from USAID, Department of State, and U.S. Forces – Afghanistan, Afghan officials at the Ministry of Energy and Water and Da Afghanistan Breshna Sherkat, World Bank, and the Asian Development Bank. In addition, we attended the Combined Joint Task Force -101 Power and Water Conference in May 2009 as well as the June 2009 Inter-Ministerial Commission on Energy meeting.

To assess progress of USAID energy sector projects, we reviewed USAID strategies, contracts for fiscal year 2009 ongoing energy projects, performance management plans, contractor reports, and financial information to identify metrics and goals. In addition, we spoke with program and contracting officials at USAID and LBG/B&V officials.

To assess coordination between U.S. agencies, international donors, and the government of Afghanistan; we met with USAID, U.S. Forces Afghanistan, State, and Afghan officials. In addition, we met with key international donors on the North East Power System (NEPS) including the World Bank, Asian Development Bank. For rural energy, we met with key international donors and officials including German Technical Cooperation and the United Nations Assistance Mission in Afghanistan. We also reviewed documentation from the Inter-Ministerial Commission on Energy and its Rural Electrification Subcommittee.

We conducted this performance audit from April to December 2009 in Washington, D.C. and Kabul, Afghanistan. We conducted this performance audit in accordance with generally accepted government auditing standards. Those standards require that we plan and perform the audit to obtain sufficient, appropriate evidence to provide a reasonable basis for our findings and conclusions based on our audit objectives. We believe the evidence obtained provides a reasonable basis for our findings and conclusions. The audit was conducted by the Office of the Special Inspector General for Afghanistan Reconstruction under the authority of Public Law 110-181, Section 1229, and the Inspector General Act of 1978, as amended.

## APPENDIX II: Comments From U.S. Embassy Kabul and U.S. Agency for International Development Mission in Afghanistan



*Embassy of the United States of America*  
Kabul, Afghanistan

UNCLASSIFIED  
MEMORANDUM

December 30, 2009

**TO:** John Brummet, Assistant Inspector General for Audits  
Special Inspector General for Afghanistan Reconstruction

**FROM:** Ambassador E. Anthony Wayne *Wayne 12/30*  
Coordinating Director for Development and Economic Affairs

**SUBJECT:** SIGAR Audit-10-4 Energy Sector: Afghanistan Energy Supply Has Increased but an Updated Master Plan is Needed and Delays and Sustainability Remain Concerns

The United States Embassy welcomes the comprehensive draft report by the Special Investigator General for Afghanistan Reconstruction (SIGAR) on its audit of Afghanistan's Energy Sector. We appreciate the opportunity to comment on its findings and recommendations. In addition to the U.S. Embassy's general response to the recommendations of the draft audit report, detailed responses to each recommendation and technical comments are attached. The technical comments may be removed from the Embassy's official reply if the comments are addressed in the final report.

The Embassy concurs with the report's findings regarding the significant increases in energy supply due to U.S. Government and other international donor investments. In addition, the Embassy notes that the effectiveness of future USAID-funded energy projects and the planning for these projects could be improved by implementing the four actions recommended by SIGAR.

Strategic planning is an objective that USAID will continue to vigorously pursue. This planning can be enhanced through ongoing dialogue and through working in a collaborative fashion with Afghan and international donor partners to craft a new Energy Master Plan.

USAID recognizes the importance of continuing to build infrastructure for Afghanistan's energy sector. However, arguably even more important is to maintain focus on capacity building efforts through metrics and milestones to better ensure that Afghans are capable of operating and maintaining this infrastructure over time.

USAID also recognizes the need to better measure the impact of efforts across the portfolio so that progress can be tracked, lessons learned, and projects can be improved over time. Consistently applying both output and outcome metrics will assist with these efforts.

Establishing common technical standards on rural energy projects will contribute to overall system sustainability. Standards will ensure quality of technical approaches, reduce procurement and inventory costs, and contribute to improved operations and maintenance.

The Embassy will continue to support efforts to commercialize Afghanistan's energy sector. Greater transparency, more efficient business practices, and improved customer service represent the key to the sector's success and will drive economic and social development. The Embassy applauds the Afghan government's commitment to the new corporatized electric utility, Da Afghan Breshna Sherkat (DABS), and will continue and expand efforts to support DABS. These efforts will result in reduced electricity losses, greater revenue flow, increased productivity, and improved access to energy services.

U.S. assistance is already mobilized in many of the areas covered in the SIGAR recommendations. The Infrastructure Working Group is proving to be an effective forum for sharing information and strategizing across civilian and military entities within the U.S. Government and with ISAF partners. USAID's energy investments continue to expand and USAID and their partners have already begun to implement the SIGAR recommendations.

## **RECOMMENDATIONS AND RESPONSES**

SIGAR recommended, "To improve the effectiveness of USAID-funded projects and planning for future energy projects, we recommend that the Director of the USAID Mission in Afghanistan take the following four actions:" The Embassy strongly supports each action recommended in the draft report and is pleased to provide detailed responses to each.

**Recommendation:** Work with the Afghan government and international donors to revise the Afghanistan Energy Master Plan to include realistic goals and timeframes based on prioritized project need, costs, and benefits.

**Embassy response:** The Embassy concurs with this recommendation. USAID has held discussions with the Asian Development Bank (ADB) on this subject. ADB plans to fund a consultant by May 2010 to lead a 12-month effort to develop a new Energy Master Plan that includes realistic goals and timeframes based on prioritized project need, costs, and benefits. The work has already begun through the USAID-supported Inter-Ministerial Commission on Energy (ICE). In December 2009, ICE completed a list of the top 22 projects for the Northeast Power System (NEPS). USAID will continue to work through ICE and in close collaboration with ADB to build on the NEPS list and the existing 2004 Master Plan to develop a country-wide master plan by June 2011 to guide future investments.

**Recommendation:** Establish milestone targets and metrics for capacity building and operations and maintenance support for USAID's energy sector program in Afghanistan.

**Embassy response:** The Embassy concurs that sustainability is a key concern, which is underlined by the U.S. policy of Afghanization. This policy requires that all projects demonstrate how the project will transfer responsibility and build capacity within the Afghan government and/or private sector. In addition, the Embassy has modified its Counterinsurgency

doctrine, to include “Transfer” as a final step; the doctrine is now summarized as, “Shape-Hold-Build-Transfer.” Currently, we have operationalized these policies in projects such as:

- Afghanistan Energy Capacity Building project, which trained nearly 2,000 staff members by the end of FY 09 at the Ministry of Energy and Water and the national electrical utility, DABS.
- 105 MW Tarakhil Power Plant: The contract to construct this plant includes significant capacity building on operations with DABS personnel. A follow-on contract, to be awarded by April 2010, will continue that capacity building to ensure effective, full transfer of the operations and maintenance (O&M) of the plant to the Afghan government.
- Diesel Plant O&M for Southern Afghanistan: These plants are operated by local DABS operators and this contract includes significant capacity building. Hands-on training on generator maintenance, fault finding, and station management is part of this contract.

While programmatically, interventions are in place to achieve sustainability, the Embassy concurs that more comprehensive performance management measures would make these interventions more effective. USAID met with the Ministry of Energy and Water (MEW) and other donors during December 2009 to address this action. As a result of this meeting, participants formed a Capacity Building Working Group. Led by MEW, this group will develop a strategy by April 2010 that will establish milestone targets and metrics for capacity building and O&M support to MEW in general and across USAID interventions specifically. USAID will provide technical support to the Secretariat of the Working Group.

**Recommendation:** Ensure that applicable output and outcome metrics are applied consistently amongst USAID projects.

**Embassy response:** The Embassy concurs with this recommendation. By April 2010, we will expand the number of indicators that are tracked across the entire energy portfolio. These should include the number of people trained and number of Afghan jobs created at a minimum. Where applicable and practical, we will include additional indicators used by the Afghanistan Infrastructure Rehabilitation Program for any implementing mechanism that contributes to these additional indicators.

**Recommendation:** Work with U.S. Forces Afghanistan and international donors to establish common technical standards on energy projects.

**Embassy response:** The Embassy concurs with this recommendation. USAID has held discussions with the German Technical Cooperation (GTZ) on this subject. GTZ is currently leading the effort under ICE working in association with the Afghan National Standards Association (ANSA) to establish common technical standards on energy generation, transmission, and distribution which would include rural energy projects. These discussions have included U.S. Forces Afghanistan under the ICE forum and will be incorporated into the

above mentioned Energy Master Plan development. By January 2011, common technical standards for rural energy projects will be established.

Attachments:

1. Annex - Technical Comments
2. SIGAR Audit-10-4 Energy Sector (Draft)



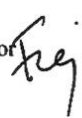
*Embassy of the United States of America*  
Kabul, Afghanistan

UNCLASSIFIED

December 27, 2009

**INFORMATION MEMORANDUM**

**TO:** John Brummet, Assistant Inspector General for Audits  
Special Inspector General for Afghanistan Reconstruction

**FROM:** Ambassador E. Anthony Wayne  
William Frej, USAID Mission Director 

**SUBJECT:** SIGAR Audit-10-4 Energy Sector

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#### SIGAR Report Recommendations and U.S. Embassy Response

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**Recommendation:** Establish milestone targets and metrics for capacity building and operations and maintenance support for USAID's energy sector program in Afghanistan.

**Embassy response:** The Embassy concurs that sustainability is a key concern, which is underlined by the U.S. policy of Afghanization, which requires an explicit transfer of responsibility to the Afghan government, and the recent addition of "Transfer" to the Counterinsurgency doctrine, now summarized as, "Shape-Hold-Build-Transfer." Currently, we have operationalized these policies in projects such as:

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**Attachment:**

Annex - Technical Comments

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(This report was conducted under the audit project code SIGAR-004A).

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**SIGAR's Mission**

The mission of the Special Inspector General for Afghanistan Reconstruction is to enhance oversight of programs for the reconstruction of Afghanistan by conducting independent and objective audits, inspections, and investigations on the use of taxpayer dollars and related funds. SIGAR works to provide accurate and balanced information, evaluations, analysis, and recommendations to help the U.S. Congress, U.S. agencies, and other decision-makers to make informed oversight, policy, and funding decisions to:

- improve effectiveness of the overall reconstruction strategy and its component programs;
- improve management and accountability over funds administered by U.S. and Afghan agencies and their contractors;
- improve contracting and contract management processes;
- prevent fraud, waste, and abuse; and
- advance U.S. interests in reconstructing Afghanistan.

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**To Report Fraud, Waste, and Abuse in Afghanistan Reconstruction Programs**

To help prevent fraud, waste, and abuse by reporting allegations of fraud, waste, abuse, mismanagement, and reprisal contact SIGAR's hotline:

- Web: [www.sigar.mil/fraud](http://www.sigar.mil/fraud)
- Email: [hotline@sigar.mil](mailto:hotline@sigar.mil)
- Phone Afghanistan: +93 (0) 700-10-7300
- Phone DSN Afghanistan 318-237-2575
- Phone International: +1-866-329-8893
- Phone DSN International: 312-664-0378
- U.S. fax: +1-703-604-0983

**Public Affairs****Public Affairs Officer**

- Phone: 703-602-8742
- Email: [PublicAffairs@sigar.mil](mailto:PublicAffairs@sigar.mil)
- Mail: SIGAR Public Affairs  
400 Army Navy Drive  
Arlington, VA 22202