



SIGAR

Office of the Special Inspector General
for Afghanistan Reconstruction

March 11, 2014

The Honorable Dr. Rajiv Shah
Administrator, U.S. Agency for International Development

Mr. William Hammink
Mission Director for Afghanistan, U.S. Agency for International Development

Dear Administrator Shah and Director Hammink:

I am writing to alert you to our concerns about cost increases for the Kandahar Helmand Power Program (KHPP) that I believe require your immediate attention. Specifically, I am concerned about \$75 million the U.S. Agency for International Development (USAID) has obligated for the installation of an additional power generating turbine at the Kajaki Dam.¹ In four years, the estimated cost of installing this turbine has more than tripled. Moreover, according to USAID’s own analysis, the cost increase outweighs the benefits derived from the entire KHPP.

In December 2010, USAID awarded a contract to Black and Veatch Special Projects Corporation (Black & Veatch) to complete the KHPP. According to USAID, the program is designed to fuel economic growth by addressing electrical supply shortfalls in the Kandahar and Helmand provinces. KHPP is one of USAID’s largest active programs in Afghanistan, with a total estimated cost of about \$266 million. This project has six components, including the installation and commission of an additional turbine for the Kajaki Dam, known as the Kajaki Unit 2 Project. In January 2013, at the request of the Afghan government, USAID removed the requirement for the installation of Kajaki Unit 2 from its KHPP contract with Black and Veatch and transferred responsibility to the Afghan government. However, USAID did not reduce the original total estimated cost of \$266 million for the program, but instead modified the contract to fund technical assistance support to the Afghan government. USAID then obligated an additional \$75 million under an existing grant with the Afghan government to fund the installation of the turbine unit. As shown in Table 1, the \$75 million to be provided to the Afghan government is approximately \$58 million more than the original estimated cost of the turbine unit.

Table 1: Kajaki Unit 2 Project Cost Changes (2010-Present)

Original Estimated Cost	\$16,964,925
Current Estimated Cost	\$75,000,000
Change (\$)	\$58,035,075
Change (%)	342%
Source: USAID Data; SIGAR analysis	

¹ The funding was obligated under the existing USAID Strategic Grant Agreement for a Thriving Economy Led by the Private Sector. The Kajaki Dam has long been recognized as a potential source of sustainable and renewable power to southern Afghanistan. The United States first began construction on the Kajaki Dam in the early 1950s to provide irrigation and electricity to the region. The dam has been plagued by problems and neglect throughout its history and remains incomplete.

With the additional funding provided for the Kajaki Unit 2 project, the cost for all six components of the original KHPP consequently increased by \$75 million to \$345 million. This cost increase indicates that the KHPP may no longer be economically viable. According to a 2011 USAID economic analysis of KHPP, the costs of the program would outweigh its benefits if actual costs exceeded the estimated costs by more than 16 percent.² In other words, based on the original cost estimate of \$270 million for the KHPP, any cost increase exceeding \$43 million (or 16 percent) would make the KHPP economically unviable. Our analysis showed that the cost increase of \$75 million for the turbine unit represents a discounted increase of \$59 million (or 22 percent) for the overall KHPP.³

Table 2 provides details of our cost calculations.

Table 2: Economic Viability of the KHPP				
	Total Estimated Cost	Cost before Program Is Unviable	Actual Cost	Discounted Actual Cost^a
Dollar Amount	\$270,000,000 ^b	\$313,200,000	\$345,000,000	\$329,789,541
Percent of Total Estimated Cost	100%	116%	128%	122%

Source: USAID Economic Analysis of Kandahar Helmand Power Program; SIGAR Analysis

^a Discounted to 2011 dollars, see footnote 3 for details.

^b The USAID analysis rounded the \$266 million cost up to \$270 million.

Although USAID has obligated \$75 million to the Afghan government to install the turbine unit, those funds have not been disbursed. Because of our concerns over the cost increases, we are requesting that before disbursing those funds, USAID explain why the cost of the turbine unit increased from \$16.9 million to \$75 million. We would also like to know which considerations were factored into USAID's decision to approve such an increase given that USAID was aware that the additional funding would cause the program's costs to outweigh the benefits. We request that you provide a formal written response no later than March 28, 2014.

² United States Agency for International Development, Economic Analysis of Kandahar Helmand Power Program (KHPP), 2011. The authors of the analysis states that "the economic analysis was conducted using traditional methodology of a cash flow analysis considering economic opportunity costs and benefits. The methodology compares the anticipated benefits and costs of the KHPP against the counterfactual, which models what the economic situation in Afghanistan would be if KHPP never existed. This economic analysis compared the annual gross benefit stream against the annual gross costs for an overall analysis of the net benefits."

³ To maintain consistency with USAID's analysis, we calculated the net present value of the \$75 million cost increase. For our calculations, we used the same assumptions that USAID did in its Economic Analysis of Kandahar Helmand Power Program. USAID used a 12 percent discount rate, a base year of 2011, and a base cost of \$270 million. Given that the funds were obligated in 2013, we used 2 years for the time variable in the expression. In order to calculate the value of \$75 million in 2011 dollars, we used the following equation: $75,000,000 / (1.122)^2 = 59,789,541$. According to Office of Management and Budget guidance, the standard criterion for deciding whether a government program can be justified on economic principles is net present value—the discounted monetized value of expected net benefits (i.e. benefits minus costs). Net present value is computed by assigning monetary values to benefits and costs, discounting future benefits and costs using an appropriate discount rate, and subtracting the sum total of discounted costs from the sum total of discounted benefits. Discounting benefits and costs transforms gains and losses occurring in different time periods to a common unit of measurement. The USAID analysis calculated the net social gain by subtracting the producer loss (costs to the program) from the consumer surplus gained by the benefits of the program.

Should you have any questions or need additional information, please contact Jack Mitchell, Director of Special Projects, at [REDACTED] or at [REDACTED]. Thank you in advance for your attention to this matter.

Sincerely,

A handwritten signature in black ink, appearing to read 'J. F. Sopko', with a long horizontal flourish extending to the right.


John F. Sopko
Special Inspector General
for Afghanistan Reconstruction



MEMORANDUM

March 28, 2014

TO: John F. Sopko
Special Inspector General for
Afghanistan Reconstruction (SIGAR)

FROM: Donald L. "Larry" Sampler
Assistant to the Administrator for
Afghanistan and Pakistan Affairs 

SUBJECT: Response to SIGAR's 14-40-SP Inquiry Letter Regarding the Kajaki
Unit 2 Turbine Installation Project

USAID would like to thank SIGAR for the opportunity to respond to concerns about cost increases for the Kandahar Helmand Power Project (KHPP) and the related on-budget Kajaki Unit 2 Turbine Installation Project (Kajaki Unit 2 Project). We constantly scrutinize our programs and oversight mechanisms to ensure taxpayer dollars are protected in Afghanistan. This is a challenging, but essential part of the work we do in Afghanistan. Oversight provided by SIGAR, the USAID Inspector General and GAO, assists us in implementing effective programs that support our national interests.

With regard to your recent Inquiry Letter on the KHPP and Kajaki Unit 2 Project, your findings appear to reflect a misunderstanding of USAID contracting processes. SIGAR claims USAID's \$75 million on-budget obligation for Unit 2 is a 342% cost increase; however, the \$75 million estimate is aligned with USAID's 2011 cost estimate. The letter also states that USAID did not decrease the KHPP contract ceiling. In fact, USAID made a contract modification that decreased the ceiling by \$38 million.

We encourage SIGAR to request input from USAID before publishing Inquiry Letters that may be based on inaccurate information and include erroneous findings.

Finally, in assessing whether a specific project is meeting its objectives, we urge SIGAR to consider the U.S. Government's goals in implementing the project. In the case of the Kajaki Unit 2 Project, USAID's investment is not simply based on direct economic returns, but also predicated on significant security and governance objectives that the U.S. Government and the Government of the Islamic Republic of Afghanistan are working together to achieve in Afghanistan.

A more detailed response to SIGAR's assertions is included in the attachments of this memorandum.

Attachments:

- 1. Technical Comments**
- 2. Table B.4: KHPP Contract Budget Line Items**
- 3. Response to SIGAR on KHPP Economic Analysis**

cc:

Dr. Rajiv Shah
Administrator, U.S. Agency for International Development

William Hammink
Mission Director, U.S. Agency for International Development/Afghanistan



ATTACHMENT 1

Response to SIGAR's 14-40-SP Inquiry Letter Regarding the Kajaki Unit 2 Turbine Installation Project

TECHNICAL COMMENTS

The Inquiry Letter asserts the following points about costs related to KHPP and the Kajaki Unit 2 Project:

1. That USAID's estimated cost for the Kajaki Unit 2 project has more than tripled in four years, from \$17 million in 2010 to \$75 million currently.
2. That "USAID did not reduce the original total estimated cost of \$266 million for KHPP, but instead modified the contract to provide technical assistance support to the Afghan government."
3. That, with such cost increases, KHPP and the Kajaki Unit 2 Project are not economically viable by USAID's own Cost-Benefit Analysis (CBA).

We disagree with each of the assertions above and provide the following responses.

1) USAID Unit 2 Installation Cost Was Estimated to be \$89 Million, Not \$17 Million

The \$16,964,925 (rounded to \$17 million) figure for the original estimated cost of the Kajaki Unit 2 Project that SIGAR referenced from the original KHPP contract (see Attachment 2) was never an estimate of the full cost of installation. This figure included a cost estimate for the Unit 2 inventory assessment but not full installation costs, and represented only a "plug figure" placeholder budget item for equipment replacement and installation costs.¹ USAID uses plug figures for projects operating in uncertain situations under cost-reimbursement type contracts. They are not offered as precise estimates.

The reason for the placeholder budget was simple: there were over 40,000 Unit 2 parts and units of materials at the Kajaki site. These items were brought to the site in 2007-2008 under a prior contract and accompanied by varying levels of documentation. The condition and suitability of this equipment for successfully installing Unit 2 was unknown when the KHPP contract was issued. Given these

¹ The original KHPP contract issued in December 2010 contains a footnote in Table B.4 Budget Line Items (see Attachment 2) stating that the estimated cost for Component 6 "Installation and commission Kajaki Unit 2" is provided as a plug figure. The footnote states that this line item figure authorizes B&V to proceed only with inventory assessment; it requires prior written approval of the Contracting Officer before proceeding with other activity sub-components including installation. Note that Component 6 contains three subcomponents – 6.1 (Assessment), 6.2 (Equipment Replacement), and 6.3 (Installation). The \$17 million initial budget for Component 6 contained a cost estimate for 6.1 and plug figure budgets for 6.2 and 6.3.

circumstances, USAID took the most prudent course of action for contracting Unit 2 installation.

As stated by Black & Veatch (B&V) in its final proposal in November 2010 and accepted by USAID, "...it is not possible at this time to submit cost information on CLINs [Contract Line Item Numbers] 6.2 and 6.3," referencing the budget line items for the installation of Kajaki Unit 2. B&V goes on to state that "...it is in the best interest of the Government to execute a modification to the contract upon completion of CLIN 6.1 [for inventory assessment] ...based on real facts on the ground and examination of these by USAID."

As required by CLIN 6.1 of their contract, B&V submitted its Assessment Report, in August 2011, including a cost estimate and proposed schedule for installing Unit 2. B&V's initial estimated cost was \$99 million, including all security, logistical, and other support costs. Following technical reviews and negotiation with USAID, B&V reduced their cost estimate to \$89 million for the Unit 2 installation. While reduced, this figure was still contingent on tendering the installation subcontract, which represents the largest cost component of the project.

2) USAID Not Only Modified the KHPP Contract to Include Technical Assistance to the Afghan Government; USAID Also Decreased the Total Estimated Cost for the Contract by \$38 Million

SIGAR's Inquiry Letter states that following the transfer of Unit 2 responsibility to the Afghan Government in January 2013, "USAID did not reduce the total estimated cost of the \$266 million for the program, but instead modified the contract to fund technical assistance support to the Afghan Government."

In December 2013, after Da Afghanistan Breshna Sherkat (DABS) demonstrated that it could successfully contract for the Kajaki Unit 2 Installation, USAID modified B&V's KHPP contract to reduce the total estimated cost to \$228 million, a decrease of \$38 million. This decreased total estimated cost includes funding for the aforementioned technical assistance. Coupled with the \$75 million on-budget component for the Kajaki Unit 2 Project through DABS, the total estimated cost for KHPP and the Kajaki Unit 2 Project in total is now \$303 million, a total increase of \$37 million over the original total estimated cost for KHPP – not a \$58 million increase as SIGAR asserts.

3) KHPP Continues to Be Economically Viable

In the USAID Cost-Benefit Analysis (CBA), which was performed in 2012, it stated that a 16% increase in the 2011 dollar value of actual costs would make the project unviable. As explained in the Economic Analysis methodology, this was referring to all economic costs including USAID program costs as well as diesel fuel and operations and maintenance for the next 20 years. SIGAR misconstrued the 16% figure to refer only to USAID program costs and did not consider other costs such as diesel and O&M; consequently, the 2011 dollar value of a 16% increase in all economic costs is \$377.6 million, not \$313.4 million, as SIGAR asserts.² In fact,

² In addition, USAID questions SIGAR's methodology used in its CBA. See Attachment 3 for discussion of methodology used by USAID in its original 2012 CBA.

according to the original analysis, USAID program costs could increase by up to 21.5% and remain economically viable, holding all other costs constant. However, considering that total KHPP program costs have only increased by roughly 12% (the above mentioned \$303 million) from the \$270 million figure modeled in the economic analysis, KHPP will remain below the break-even point for economic viability even if there is future cost escalation of the \$75 million on-budget Unit 2 component. Additionally, as part of USAID's normal internal review process, the agency will conduct an updated Cost-Benefit Analysis later this year that will focus on Kajaki Unit 2 as an on-budget project.

While USAID's CBA demonstrates that KHPP and Kajaki Unit 2 are economically viable, it is important to note that the strategic value of these projects is far greater than what can be presented from a strictly economic point of view. The benefits in the economic analysis include only those that can be monetized, such as additional electricity supply for consumers connected to the grid. The KHPP and Kajaki Unit 2 projects carry strategic counter-insurgency (COIN) related benefits that the CBA does not capture. These activities will continue to have positive effects on stabilization in Helmand and Kandahar. As a result, USAID believes that any economic analysis significantly undervalues the overall benefits of implementing KHPP and the Kajaki Unit 2 Project. These activities remain a political priority for both the Afghan and U.S. Governments, of great symbolic and stabilization value for the region, and should not be judged solely on the basis of economic cost.

B.4 BUDGET LINE ITEMS

<u>CLIN No.</u>	<u>Sub-CLIN No.</u>	<u>CLIN Description</u>	<u>Estimated Cost</u>	<u>Fixed Fee</u>
1		Improve Kandahar Power Distribution System	\$86,238,176	\$4,743,100.00
	1	Renovate the Kandahar Breshna Substation		
	2	Refurbish and expand the Kandahar City Medium Voltage and Low Voltage Distribution System		
	3	Construct new Kandahar East Substation		
	4	Construct a transmission line b/w the Kandahar Breshna Substation and the new Kandahar East Substation		
	5	Replacement of 14 Diesel Generators at the Breshna Substation		
2		Rebuild Durai Junction Substation	\$28,850,784	\$1,586,793.00
	1	Rebuild Durai Junction Station		
	2	Procure equipment for additional substations		
3		Regional Camp and Program Management	\$73,176,057	\$4,024,683.00
4		Transportation, Installation, Operation and Maintenance of Kandahar Industrial Park Diesel Power Plant	\$4,503,782	\$247,708.00
5		Rebuild the Kajaki Dam Substation and Local Distribution System	\$43,300,296	\$2,381,516.00
6		Installation and commission Kajaki Unit 2*	\$16,080,498	\$884,427.00
	1	Perform inventory assessment of GFE		
	2	Repair GFE, provide missing and additional new equipment for completing Unit 2 installation		
	3	Install and commission Kajaki Unit 2		
Total Estimated Cost			\$252,149,593.00	
Total Fee				\$13,868,227.00
Total Estimated Cost Plus Fixed Fee				\$266,017,820.00

* The estimated cost of CLIN 6 is provided as a plug figure; Contractor is authorized to start performing on sub-CLIN 6.1 upon Contract award. Performance under Sub-CLINs 6.2 and 6.3 will require prior written approval of the Contracting Officer.

Attachment 3: Additional Response to SIGAR on KHPP Economic Analysis

Economic Viability of KHPP (millions, USD) - discounted to 2011 dollars

	Originally estimated Program Cost of KHPP (\$270 million undiscounted)	Total estimated economic costs of KHPP (including \$270 million program costs, diesel fuel, operations and maintenance, environmental externality)	Economic Cost Before Program Becomes Unviable	Total Actual Economic Cost (includes \$303 Million Program Cost)
Dollar Amount (discounted to 2011 USD)	\$238.2 ^a	\$325.5 ^b	\$377.6 ^c	\$347.8 ^d
Percentage of Total Estimated Economic Costs	73.2%	100.0%	116%	106.8%

^a Program funds were anticipated to be spent between 2011 and 2014. This figure is the value of the funds discounted to 2011 dollars using the USAID standard 12% economic opportunity cost of capital (or discount) rate. Therefore, the discounted value does not equal the undiscounted estimate of KHPP program costs of \$270 million.

^b Because an economic analysis is not a financial analysis – which is strictly cash flows – this economic analysis considered all economic costs of the KHPP program, which includes operations and maintenance for both the Kajaki Unit 2 and the new substations, as well as the costs to run the new diesel plants (ie, diesel fuel). It also includes environmental externalities associated with increased carbon dioxide emissions.

^c In the original executive summary, the value of actual costs as a percentage of estimated costs for which Net Present Value of KHPP = 0 was 116% (see page 10). “Costs” in this analysis is economic opportunity costs, as stated in the economic analysis methodology section on page 4. The dollar value of a 16% increase in all discounted economic costs is \$377.6 million. This reflects a 16% annual increase in all costs including the program costs, operations and maintenance, variables costs such as fuel, and environmental externalities for the full 20 years of the analysis (see previous footnote).

^d The original economic analysis discounted programmatic funding in the years the cash was expected to be spent in country, and not the years it was obligated (this is standard methodology). Using the original economic analysis model, the program costs were updated to reflect an increase to \$303 million program costs; this includes the \$75 million increase and deducts costs due to descoping actions that did not impact the anticipated benefits of the analysis. Although

the additional program funds were obligated late in 2013, they will likely be spent in 2014 and 2015. The updated analysis estimated that half of the additional funds would be spent in 2014 and half in 2015. The resulting increase in program funds causes a 6.8% increase over the original estimated total economic costs of KHPP.

Most importantly, adjusting for an increase in program funds for KHPP using the original analysis, the net present value (NPV) of the project is \$26 million, which is a 13.6% internal rate of return. This implies that the economic benefits of the program still outweigh the economics costs of the program, despite the increase in program funding.

Moreover, the benefits in the economic analysis only include those that can be calculated (such as the cost savings for the consumers that no longer use expensive private diesel generation when they connect to the grid). This analysis could not possibly measure the benefits KHPP will have on stabilization in Helmand and Kandahar, which are likely to be significant. As a result, we believe that the economic analysis considerably undervalues the economic benefits of KHPP.