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Patrick Higdon <phigdon@worldconnect-us.org>

FW: BISHOP ABIERO SECONDARY SCHOOL SOLAR POWER ASSESSMENT REPORT

Radeny, Enos <ERadeny@peacecorps.gov> Mon, Feb 1, 2016 at 3:11 AM
To: Patrick Higdon <phigdon@worldconnect-us.org>
Cc: "McCormick, Jim" <JMcCormick@peacecorps.gov>, "Othieno, Louis" <LOthieno@peacecorps.gov>

Hello Patrick,

I have forwarded the assessment report attached from Lean Energy Solutions. I'll work with the school principal in the course of the day to email you the official report and formal request as earlier mentioned.

I emailed Lean Energy two follow up questions below and got their responses as indicated after each question. I think with this, the school should be able to have the big 5kVA system with all the accessories (bulbs, tubes, poles etc.) needed, and including the training.

My hope is that all can be put together this week and have the system installed next week February 9th or 10th. After your contract changes with the school, am looking at convincing Lean Energy to do the installation with the $4,000 available and sign an agreement with the school to receive the remaining check later.

Enos,

Thank you for your email.
In response to the questions:

1) What is the best price Lean Energy can offer to enable the school go for the 5kVA system? Can it come to $6,000 flat?
In lieu of the purpose of the installation, Lean Energy can agree to the
$6,000 for the 5kVA system.

2. Would you be willing to organize an extra day or two to conduct solar usage, benefits, system operations etc to the school fraternity after installation? That may include sessions for technician (if need be besides learning by experience during installation) teachers, workers and students, some collective and probably other sessions separate especially for students, as you deem fit. Would a day or two be enough? How would you cost that?

Yes. We can organize for an extra day of training after the 1 day of installation.

This would come at a cost of Ksh. 30,000. This is due to the extra accommodation, transport charges and fixed costs.

Kind regards,

Shadrack

On Mon, Feb 1, 2016 at 8:14 AM, Radeny, Enos <ERadeny@peacecorps.gov> wrote:

Thank you Shadrack and your team for putting this together.

Two quick questions:

1. What is the best price Lean Energy can offer to enable the school go for the 5kVA system? Can it come to $6,000 flat?

2. Would you be willing to organize an extra day or two to conduct solar usage, benefits, system operations etc to the school fraternity after installation? That may include sessions for technician (if need be besides learning by experience during installation) teachers, workers and students, some collective and probably other sessions separate especially for students, as you deem fit. Would a day or two be enough? How would you cost that?

Best Regards,

Enos

From: Renewable Energy [mailto:renewable.energy@leansolutions.co.ke]
Sent: Friday, January 29, 2016 4:23 PM
To: alakamilly@gmail.com
Cc: Radeny, Enos; Othieno, Louis
Subject: BISHOP ABIERO SECONDARY SCHOOL SOLAR POWER ASSESSMENT REPORT

Dear Millicent,

I hope you are keeping well.

Following our site visit on 27th January 2016, please find the attached assessment report with regards to the proposed installation of the solar power generation and back up system at Bishop Abiero Girls Secondary School.

--

Kind regards,

Shadrack Omwenga
Head - Renewable Energy | Solar

LEAN ENERGY SOLUTIONS LTD.

Office:4th Floor, Kipro Centre, Westlands, Nairobi, Kenya.
Safaricom: +254 728 249 674, |Airtel: +254 736 450 649,

Wireless: +254 20 4450649,

BISHOP ABIERO GIRLS SECONDARY SCHOOL

ASSESSMENT REPORT FOR INSTALLATION OF A SOLAR POWER GENERATION AND BACKUP SYSTEM

Project Designers:

1)
Mr. Shadrack Omwenga,
Head - Renewable Energy | Solar
Lean Energy Solutions Limited

2)
Mr. Paul Muriithi
Energy Solutions Engineer
Lean Energy Solutions Limited

3)
Mr. Elijah Kimani
Energy Solutions Engineer
Lean Energy Solutions Limited

INTRODUCTION

Lean Energy Solution Ltd conducted a site visit at **Bishop Abiero Girls Secondary School** on 27 of January 2015.The survey was conducted following a request placed by Peace Corps and the School Management.

ANALYSIS OF ELECTRICAL WIRING

Upon analysis of the electrical wiring for the various buildings we recommend the following changes:

1. Separation of all lighting loads and sockets.
2. Centralization of the distribution of power from the staff room. This will facilitate easy monitoring and control from the consumer unit.

   Further, it will facilitate centralized location of the inverter and battery housing from the staff room.
3. Wiring of the periphery of the existing dormitory to facilitate illumination in front and behind the dormitory.
4. Wiring from the central distribution point in the staff room to the floodlight in the field, gate lights and garden lights).
5. Replacement of bulb holders in classes with tube light fixtures. Alternatively, the incandescent lamps (100W and 75W) and energy saving lamps (40W Fluorescent tubes, 18W Compact Fluorescent Lamps) can be replaced by equivalent LED bulbs as in **Figure 1.**
6. Erection of poles for the floodlight in the field and fixing the floodlight
7. Erection of support structure and fixing the garden lights.
8. Installation and fixing of the LED energy saving bulbs
9. Wiring of lighting points in each toilet and fixing of bulbs.

Through an appointed and qualified electrician, Bishop Abiero Girls Secondary School can facilitate the works above.

ANALYSIS OF SOLAR SYSTEM

Following the survey, it was found that the existing solar equipment had faulty accessories and this includes:-

- Non-functional Solar batteries
- Non-functional Solar Charge controller and
- Faulty Wiring

However, the existing panels of **140kWp** panels can be used to supplement the new solar system to be installed.

Prior to the site survey, the school was to utilize a **2kVA solar** power generation and back-up system. Data collection and analysis was used to determine the suitability of this system to the existing loads.

Figure 1: Load and LED Cost Analyses

Area	Lighting Fixture	Units	Unit Cost (Ksh)	Total Cost (Ksh)
Gate	20W floodlight	2	5,000	10,000
Garden	8W LED Bulb	3	1,000	3,000
Staff Room	8W LED Bulb	3	1,000	3,000
Offices	8W LED Bulb	5	1,000	5,000
Class Rooms A	18W LED Tube Light	9	2,600	23,400
Class Rooms B Black Board Lighting	18W LED Tube Light	12	2,600	31,200
	8W LED Bulb	3	1,000	3,000
Class Backside Flood Light	30W LED Floodlight	1	7,500	7,500
Class Verandah	12W LED Tube light	4	2,200	8,800
Library ,Home science, Preparation &Corridor	8W LED Bulb	4	1,000	4,000
Laboratory	18W LED Tube Light	4	2,600	10,400
New hived Class	18W LED Tube Light	3	2,600	7,800
New hived Dorm	18W LED Tube Light	4	2,600	10,400
Hall Block Security	12W LED Tube light	3	2,200	6,600
Latrines	5W LED Bulb	11	600	6,600
Dorm	18W LED Tube Light	4	2,600	10,400
Dorm Security	8W LED Bulb	6	1000	6,000
Bathing area	18W LED Tube Light	1	2,600	2,600
Matrons House	8W LED Bulb	5	1,000	5,000
Head Teachers House	8W LED Bulb	6	1,000	6,000
Kitchen	8W LED Bulb	5	1,000	5,000
Field Flood Lights	50W floodlight	2	11,500	23,000

EQUIPMENT	WATTAGE(W)	UNITS	TOTAL WATTAGE
5W LED Bulb	5	11	55
8W LED Bulb	8	37	296
12W LED Tube Light	12	7	84
18W LED Tube Light	18	37	666
20W LED Floodlight	20	2	40
30W LED Floodlight	30	1	30
50W LED Floodlight	50	2	100
Printer	700	1	700
Photocopier	1200	1	1200
TV Decoder	10	1	10
DVD	8	1	8
TV	75	1	75
Laptop	80	1	80
Estimated phone charging	3	10	30
GRAND TOTAL		**113**	**3374W**

NIGHT/BATTERY UTILITY USAGE

A night utility analysis is crucial in determining the total watt-hours that the school utilizes especially at night and in the morning. Comparison of the total watt-hours consumed gives an indication of the suitability of the size of batteries to be used. The *figure 2: Energy Consumption Pattern* shows this analysis.

Figure 2: Energy Consumption Pattern

Area	Lighting Fixture	Units	Wattage	Hours			Total Units (Watt-hours)
				Total	Morning	Night	
Gate	20W floodlight	2	40	12	2	10	480
Garden	8W LED Bulb	3	24	12	2	10	288
Staff Room	8W LED Bulb	3	24	3	1	2	72
Offices	8W LED Bulb	5	40	3	1	2	120
Class Rooms A	18W LED Tube Light	9	162	6	2	4	972
Class Rooms B	18W LED Tube Light	12	216	6	2	4	1296
Black Board Lighting	8W LED Bulb	3	24	6	2	4	144
Class Backside Flood Light	30W LED Floodlight	1	30	12	2	10	360
Class Verandah	12W LED Tube light	4	48	12	2	10	576
Library ,Home science room, Preparation room &Corridor	8W LED Bulb	4	32	3	1	2	96
Laboratory	18W LED Tube Light	4	72	3	1	2	216
New hived Class	18W LED Tube Light	3	54	6	2	4	324
New hived Dorm	18W LED Tube Light	4	72	6	2	4	432
Hall Block Security	12W LED Tube light	3	36	12	2	4	432
Latrines	5W LED Bulb	11	55	12	2	10	660
Dorm	18W LED Tube Light	4	72	6	2	4	432
Dorm Security	8W LED Bulb	6	48	12	2	10	576
Bathing area	18W LED Tube Light	1	18	4	2	2	72
Matrons House	8W LED Bulb	5	40	6	2	4	240
Head Teachers House	8W LED Bulb	6	48	6	2	4	288
Kitchen	8W LED Bulb	5	40	3	1	2	120
Field Flood Lights	50W floodlight	2	100	12	2	10	1200
			GRAND TOTAL				**9,396 Watt-Hours**

CONCLUSION AND RECOMMENDATION

The **2kVA system** has 2 batteries each of 2520Watt-hours (Total of 5040Watt-hours). In light of the analyses per Fig. 2, we recommend that the most suitable system is a **5 kVA solar system** which has four batteries each of 2520Watt-hours (Total of 10,080Watt-hours).

The system has four panels each of 250Wp (total of 1000Wp) as opposed to the two panels (total of 500Wp) in the **2kVA system.**

The **5 kVA solar system** is large enough to power the lighting load and also to power office equipments used during the day, including the photocopier.

The cost for the system is **KES 625,000 (or equivalent to USD 6127 at current exchange rate).**

We look forward to lighting up the school.

We Bishop Abiero Girls' community wish to appreciate your kind and generous contribution towards lighting our school through the solar system. We acknowledge the receipt of $1,000 for the technician's fee and further security lighting.

After the assessment report, we discovered that we needed a solar panel with a higher capacity. We therefore request that we be allowed to use an extra 2,000 dollars within the proposed money to acquire a bigger panel from Lean Energy Solutions. The bigger 5kVA system will enhance security and provide more lighting points which is our greatest need. We also wish to let you know that we will use a training fee of 300 dollars to train teachers, support staffs and students on correct use of the system. The Lean Energy Assessment Report and our summary proposal detailing budget breakdown are attached. We will receipt the expenditures as required.

Once again we wish to sincerely thank you for the kind gesture. As Bishop Abiero Community, this will enhance the security and academic performance in the long run.

Yours faithfully,

Millicent Odhiambo
Principal

PROPOSAL FOR INSTALATION OF SOLAR AT BISHOP ABIERO GIRLS SECONDARY SCHOOL – MAGWAR

Introduction:
Peace Corps staff together with Lean Energy officials visited Bishop Abiero Secondary school on Wednesday January 27th 2016. The purpose of the visit was to assess the school lighting needs in preparation to the installation of the solar energy system from Lean Energy Solutions. The School Principal and an Electrical Technician assisted the team in the assessment process. The assessment report prepared by Lean Energy is attached.

Findings:
Following the assessment and from the attached report, the school will need security lighting at the gate, borehole water point, parade square and back of the dormitories besides other in door lighting. At the same time, there will be need to power the socket in the principal's office to support the printer and photocopier. This magnitude of power supply exceeds what the 2kVA system can supply. The team concurred and suggested installation of a 5kVA that would comfortably meet this need and even more. The assessment report recommended separation of the lighting and socket power system, and wiring of all security points before installation.

In this light, Bishop Abiero Secondary School, requests World Connect to allow the school to use part of USD5, 000 that was designated to the school in this project to go to Lean Energy in enhancing the system. Lean Energy has accepted to install the 5kVA system at a total cost of USD6, 000. This will mean spending USD2, 000 from the above $5, 000. From the assessment report, the energy saving lighting cost totals to about $1,987 leaving a balance of about $1,013. The school requests to use part of the remaining amount to pay for a one and half day training for school staff, teaching staff, technician and students after installation. The training sessions will cover the use of solar energy, benefits and maintenance among others.

The budget breakdown for training, extended wiring, lamp holders, tube light fitting, garden light stands and flood light poles are listed below:

Training	- $ 200
Extended Wiring	- $ 200
Lamp Holders	- $ 230
Tube Light Fittings	- $ 150
Garden Light Stands	- $ 100
Flood Light Poles	- $ 150
Total	**= $1030**

Each item receipt will be kept and accounted for as required. Detailed line item budget can be provided if needed.

Conclusion:
Following your concurrence and approval to this request, the school will go ahead and sign a contract with Lean Energy to install the 5kVA system on February 9th. The school will hand over the $4,000 check that we have been informed is currently in the custody of Peace Corps and pay the balance on arrival of the remaining check from World Connect.

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Patrick Higdon <phigdon@worldconnect-us.org>

RE: SOLAR QUOTATION AT BISHOP ABIERO GIRLS

Radeny, Enos <ERadeny@peacecorps.gov> Mon, Feb 1, 2016 at 3:30 AM
To: Patrick Higdon <phigdon@worldconnect-us.org>, "Othieno, Louis" <LOthieno@peacecorps.gov>
Cc: "McCormick, Jim" <JMcCormick@peacecorps.gov>, Pamela Nathenson <pnathenson@worldconnect-us.org>

Hello Patrick,

We (Peace Corps staff, Lean Energy and School Principal) had detailed discussions with the technician – Stephen Omondi - and agreed on the terms as had been expected of Tobias.

The principal is to concretize e the ToR developed and use them to budget the allocated funds under this budget line.

The principal said that Tobias became uneasy when he noticed he'll not be supplying the system. He complained of not being familiar with Lean Energy systems, and why he was not consulted before etc. On the assessment day, he said he is busy. He probably found it difficult working with this team, knowing that this system is cheaper that what he had proposed and more effective. Unfortunately all of us including the principal, who is new in the school haven't known him much.

Thanks,

Enos

From: Patrick Higdon [mailto:phigdon@worldconnect-us.org]
Sent: Friday, January 29, 2016 6:37 PM
To: Radeny, Enos; Othieno, Louis
Cc: McCormick, Jim; Pamela Nathenson

[Quoted text hidden]

[Quoted text hidden]

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Patrick Higdon <phigdon@worldconnect-us.org>

Re: FW: ToR for Steven Omondi

Millicent Alaka <alakamilly@gmail.com> Thu, Feb 4, 2016 at 12:16 AM
To: "Radeny, Enos" <ERadeny@peacecorps.gov>
Cc: phigdon <phigdon@worldconnect-us.org>

On 2/1/16, Radeny, Enos <ERadeny@peacecorps.gov> wrote:
> Hello Millicent,
>
> Here are the ToRs for the technician, Stephen Omondi for your further input
> and use.
>
> Thanks,
>
> Enos
>
> _____
> From: Maruti, Joseph
> Sent: Monday, February 01, 2016 7:36 AM
> To: Othieno, Louis; Radeny, Enos; Nganga, John
> Subject: RE: ToR for Steven Omondi
>
>
> Hello Colleagues,
>
> Below is the typed up notes for use in preparing the Terms of Reference for
> the Electrician at Bishop Magwar.
> I don't know if it has reached madam principal at Bishop Magwar. If not
> please share with her since I did not get her email address.
>
> Terms of Reference for the Electrician
> 1. Separate the power supply to the lights from supply to the sockets.
> 2. Replace the point lights with tube light power in the classrooms as
> per the specifications
> 3. Source for LED tubes for classrooms
> 4. Design, source for materials and wire the garden lights as per
> specifications
> 5. Ensure sockets in the office can be powered separately by solar and
> by KPLC via the changeover
> 6. Provide user education to ensure the completed system is used
> correctly
>
> Regards
> Maruti
>
>
> -----Original Message-----
> From: Maruti, Joseph
> Sent: Thursday, January 28, 2016 8:08 AM
> To: Othieno, Louis; Radeny, Enos; Nganga, John
> Subject: ToR for Steven Omondi
>
>
>
> Joseph Maruti
> Training Manager
> Peace Corps Kenya
> +254 728 960 855
>

Gmail by Google

Patrick Higdon <phigdon@worldconnect-us.org>

Confirming Lean Energy Travel to Bishop Abiero

Radeny, Enos <ERadeny@peacecorps.gov> Thu, Feb 4, 2016 at 2:14 AM
To: "phigdon@worldconnect-us.org" <phigdon@worldconnect-us.org>
Cc: "McCormick, Jim" <JMcCormick@peacecorps.gov>, "Othieno, Louis" <LOthieno@peacecorps.gov>, Pamela Nathenson <pnathenson@worldconnect-us.org>

Hello Patrick,

I hope you got my last two briefing emails.

As you may know, rural schools such as Bishop Abiero, in this part of the world experience a lot of technological challenges. This has been the case this week trying to help them get the additional $2,000 expenditure request for the big system sent out.

You must have received the request and the proposal sent out this morning. I noticed it was sent to me and copied to you instead of the other way round. They basically replied an email I had sent to them regarding our discussions on the ToRs for the technician. I also noted that the Assessment report is missing, I have informed them of that and asked them to them to resend. I had also sent you an advance copy though.

As mentioned in my previous email, our intention was to have Lean Energy install the 5kVA system next week Tuesday February 16th. We intend to present the $4,000 checks at the same time. We need your official confirmation to the school to go ahead and purchase the $6,000 – 5kVA system. This will enable me confirm to Lean Energy to be ready for travel with the whole system next week. Hopefully they will still accept late payment of the remaining check.

The school is seemingly making some elaborate plans to celebrate this installation next week. We want to be careful that they don't put in so much before we confirm that this will actually happen.

Thanks,

Enos

Enos Radeny

Associate Director, Education

US Peace Corps, Kenya

P.O. Box 698-00621, Nairobi, Kenya

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Patrick Higdon <phigdon@worldconnect-us.org>

Confirming Lean Energy Travel to Bishop Abiero

Patrick Higdon <phigdon@worldconnect-us.org> Thu, Feb 4, 2016 at 8:49 AM
To: "Radeny, Enos" <ERadeny@peacecorps.gov>
Cc: "McCormick, Jim" <JMcCormick@peacecorps.gov>, "Othieno, Louis" <LOthieno@peacecorps.gov>, Pamela Nathenson <pnathenson@worldconnect-us.org>

Hi Enos,

Thank you for clarifying and for your work to move this forward. Please consider this email World Connect's official approval to move forward with the larger 5kVA system, as planned.

I'm reviewing all documentation this morning and will circle back to you with questions.

Best,
Patrick
[Quoted text hidden]
--
Patrick Higdon
Program Manager
World Connect
6 Barclay Street
New York, NY 10007
C: (615) 513-2943
Skype: k2kpatrick
www.worldconnect-us.org

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Patrick Higdon <phigdon@worldconnect-us.org>

Confirming Lean Energy Travel to Bishop Abiero

Patrick Higdon <phigdon@worldconnect-us.org> Thu, Feb 4, 2016 at 1:51 PM
To: "Radeny, Enos" <ERadeny@peacecorps.gov>
Cc: "McCormick, Jim" <JMcCormick@peacecorps.gov>, "Othieno, Louis" <LOthieno@peacecorps.gov>, Pamela Nathenson <pnathenson@worldconnect-us.org>

Hi Enos,

A couple clarifying questions that came out of my review of everything that was sent along:

First, I'm not fully understanding the purpose for separating the lighting and the socket power systems. Am I correct in understanding that the primary plan is to run the lights and the wall socket in the Principal's office on the new solar system, while the rest of the wall sockets will be connected primarily to grid power? Is there anything else in addition to the majority of the wall sockets that will be primarily drawing on grid power? If grid power goes out, which we understand is a frequent occurrence, the wall sockets (and anything else that is primarily drawing on grid power) will be able to draw on solar power due to the solar system being 'grid-tied', correct? Is this something that just happens automatically, or will there be a switch that must be flipped manually? Apologies if I've misunderstood any of the infrastructure or technical components, it's a bit difficult without having been at the site for the field assessment.

Re: the budget restructure, I'm not fully understanding the math. As I understand it, World Connect will send an additional 2000 USD check made out to Lean Energy, meaning the school will soon possess three 2000 USD checks (6,000 USD total) made out to Lean Energy, to hand over to the company. We have approved this already. The school already possesses an additional 1000 USD in grant funds, which will be used in part to pay the local technician, Stephen Omondi, for work he is doing and according to the ToR agreed upon. We are still waiting on the final ToR document I believe, correct? Will there be any other costs covered by this 1000 USD?

Assuming we have everything above correct, we still need to come to an agreement on the best use of the additional 3000 USD in grant funds. There is a mention in the documents of 1987 USD needed to cover 'additional energy saving lighting costs', 1030 USD for training, extended wiring, etc., and 300 USD to cover the additional day and a half of training by Lean Energy. What's not immediately clear to me is if any of these costs are *included in* what's already been paid or approved (7000 USD), or if these costs are *in addition to* what's already been paid or approved? Again, apologies if I've misunderstood anything, and thank you for clarifying.

Best,

Patrick

[Quoted text hidden]

Gmail by Google

Patrick Higdon <phigdon@worldconnect-us.org>

Confirming Lean Energy Travel to Bishop Abiero

Radeny, Enos <ERadeny@peacecorps.gov> Fri, Feb 5, 2016 at 3:02 AM
To: Patrick Higdon <phigdon@worldconnect-us.org>
Cc: "McCormick, Jim" <JMcCormick@peacecorps.gov>, "Othieno, Louis" <LOthieno@peacecorps.gov>, Pamela Nathenson <pnathenson@worldconnect-us.org>

Hello Patrick,

Thank you for the response. We are now moving on with plans to have the installation done next week.

I have given the answers to your questions below. For the first question, I gave Lean Energy the chance to respond even though I knew the answer, so it clearly comes from the, as collectively discussed.

From: Patrick Higdon [mailto:phigdon@worldconnect-us.org]
Sent: Thursday, February 04, 2016 9:51 PM
To: Radeny, Enos
Cc: McCormick, Jim; Othieno, Louis; Pamela Nathenson
Subject: Re: Confirming Lean Energy Travel to Bishop Abiero

Hi Enos,

A couple clarifying questions that came out of my review of everything that was sent along:

First, I'm not fully understanding the purpose for separating the lighting and the socket power systems. Am I correct in understanding that the primary plan is to run the lights and the wall socket in the Principal's office on the new solar system, while the rest of the wall sockets will be connected primarily to grid power? Is there anything else in addition to the majority of the wall sockets that will be primarily drawing on grid power? If grid power goes out, which we understand is a frequent occurrence, the wall sockets (and anything else that is primarily drawing on grid power) will be able to draw on solar power due to the solar system being 'grid-tied', correct? Is this something that just happens automatically, or will there be a switch that must be flipped manually? Apologies if I've misunderstood any of the infrastructure or technical components, it's a bit difficult without having been at the site for the field assessment.

a) The purpose of separating the lighting loads and socket outlets is to bring them to the required standard. Each should should have separate breakers. This is per electrical code.
Further to this, the solar batteries will have a longer battery life if loads such as iron boxes and large heating elements are excluded. However, all lighting and electrical equipment such as photocopier, laptops, TV can be used from the solar system.

b)The socket outlets for the office block (including the principal's office are essential and can be supported by the solar system.

Socket outlets in class and lab will be on mains (KPLC) due to the heating loads that may be used

there if the need so arises.

This provision again allows for longer battery life.

c) The solar system can operate on three settings:
i)Solar as the priority source of power, with KPLC as secondary source and batteries as back-up in case first and second option are unavailable.

ii)Solar set as tied to KPLC and remains as primary source of power in case KPLC is unavailable.

iii)Solar set as back up and only kicks in if KPLC is unavailable.

All the three options above occur automatically as per the setting we agree on. There is no manual flipping of any changeover switch.

However there is a manual over-ride in case you do not want to use solar power.

Re: the budget restructure, I'm not fully understanding the math. As I understand it, World Connect will send an additional 2000 USD check made out to Lean Energy, meaning the school will soon possess three 2000 USD checks (6,000 USD total) made out to Lean Energy, to hand over to the company. We have approved this already. The school already possesses an additional 1000 USD in grant funds, which will be used in part to pay the local technician, Stephen Omondi, for work he is doing and according to the ToR agreed upon. We are still waiting on the final ToR document I believe, correct? Will there be any other costs covered by this 1000 USD?

Yes the $6,000 will all go to Lean Energy and the remaining $2,000 should come in Lean Energy name too. We are convincing them to install the system on receipt of the $4,000 and get the remaining later. Essentially the $1,000 is meant to cover the labor costs of the technician. It takes 21days to hit the school bank account from the day it is deposited. Since so much work explained above had to be done prior to the next week's installation, the school had to get into the boarding account to start off the work and be ready for next week. It is very likely that they will be forced to use part of the $1,000 when it gets ready to return the school money, before you authorize additional money. The principal will be sending you the ToR and payment plan for the technician likely today.

Assuming we have everything above correct, we still need to come to an agreement on the best use of the additional 3000 USD in grant funds. There is a mention in the documents of 1987 USD needed to cover 'additional energy saving lighting costs', 1030 USD for training, extended wiring, etc., and 300 USD to cover the additional day and a half of training by Lean Energy. What's not immediately clear to me is if any of these costs are *included in* what's already been paid or approved (7000 USD), or if these costs are *in addition to* what's already been paid or approved? Again, apologies if I've misunderstood anything, and thank you for clarifying.

You are very right. These additional costs are not included in the $7,000 already approved. These are the justifications for the additional $3,000 grant that you need to agree on with the school on actual expenditures. As I have mentioned in point number two, they are already spending money from the school on getting the place ready for installation. Then on the Assessment report, you must have seen a list of lighting needs prepared by Lean Energy, and finally the training that you had mentioned earlier. All these are projected to utilize the remaining $3,000 grant. The whole cost however still remains within the $10, 000 despite the move to 5kVA. I guess the way forward here is to agree with the school on how to release this remaining portion of the grant to help them cover the mentioned costs and account as required.

Best,

Gmail by Google

Patrick Higdon <phigdon@worldconnect-us.org>

Confirming Lean Energy Travel to Bishop Abiero

Patrick Higdon <phigdon@worldconnect-us.org> Fri, Feb 5, 2016 at 1:03 PM
To: "Radeny, Enos" <ERadeny@peacecorps.gov>
Cc: "McCormick, Jim" <JMcCormick@peacecorps.gov>, "Othieno, Louis" <LOthieno@peacecorps.gov>, Pamela Nathenson <pnathenson@worldconnect-us.org>

Great news, Enos! And thank you for clarifying my questions with Lean Energy. As I'm understanding the additional 3K in project spending, we have the following line items clearly outlined, accounting for about $2,250 depending on the exchange rate used:

1. 30,000 KSH for the additional training by Lean Energy
2. 198,700 KSH of LED bulbs and replacement bulbs

We also have the below costs listed by the Principal, but it's not clear to me if any of these costs overlap with what is already included above. Perhaps you can clarify for me?

- Training - $ 200
- Extended Wiring - $ 200
- Lamp Holders - $ 230
- Tube Light Fittings - $ 150
- Garden Light Stands - $ 100
- Flood Light Poles - $ 150

I've received the Principal's request for an accelerated disbursement in consideration of the fact that it takes 21 days for cheques to clear, as well as the draft TOR contract for the technical liaison. I will discuss with our team the next steps for making project payments, including the additional 2K to Lean Energy and a payment to the school. As to the draft TOR contract, it looks fair and reasonable to me, my only concern would be that all parties are clear as to the roles and responsibilities of the technical liaison in relation to Lean Energy technicians while the project is still covered by warranty. Is this being discussed?

Thanks Enos!
Patrick

[Quoted text hidden]

Dear Patrick,

I would wish to bring to your attention that we have started work and done phase 1 of wiring despite the fact that the cheque was deposited and will mature after 21 working days. we therefore had to vire for money form boarding section to facilitate the purchase of wiring equipment a sum of Kshs. 56,000. I have also ordered a few bulbs to facilitate the launch. We are yet to pay the electrician his labour fee of Ksh. 30,000 for phase one.

I am therefore requesting for the rest of the money as per the assessment report to buy more bulbs as well as facilitate the remaining activities.

Receipts for the already purchased items shall be scanned and sent to you in due course.

AGREEMENT BETWEEN BISHOP ABIERO GIRLS' – MAGWAR AND ELECTRICAL TECHNICIAL STEVEN OMONDI.

I …… ID NO.: …… Phone No.: …… Hereby agree to work with: ……. Contact address: …….. for a period between : ……. To ……. as a technician.

My duties include:

1. Separating the power supply to the lights from supply to the sockets.
2. Replacing the point lights with tube light power in the classrooms as per the specifications.
3. Designing, sourcing for materials and wire garden lights as per specifications.
4. Ensuring sockets in the office can be powered separately by solar and by KPLC via the change over.
5. Providing user education to ensure the completed system us used correctly.
6. Making subsequent visits for maintenance purposes.

I further agree that all payments due to all these services shall range within the total sum of Kshs. 100,000 as stipulated in the project budget.

Each payment will be determined by available work at any given time and amount agreed upon.

This agreement is here in made between the electrician referred to as: …… and the school referred to as : …… on this …… Day of ……. 2016.

Gmail by Google

Patrick Higdon <phigdon@worldconnect-us.org>

Confirming Lean Energy Travel to Bishop Abiero

Radeny, Enos <ERadeny@peacecorps.gov> Mon, Feb 8, 2016 at 11:47 PM
To: Patrick Higdon <phigdon@worldconnect-us.org>
Cc: "McCormick, Jim" <JMcCormick@peacecorps.gov>, "Othieno, Louis" <LOthieno@peacecorps.gov>, Pamela Nathenson <pnathenson@worldconnect-us.org>

Thanks Patrick, most of part of the breakdown below is correct. Just a few clarifications. I'll make my comments under each point to be more clear.

Enos

From: Patrick Higdon [mailto:phigdon@worldconnect-us.org]
Sent: Friday, February 05, 2016 9:04 PM
To: Radeny, Enos
Cc: McCormick, Jim; Othieno, Louis; Pamela Nathenson
Subject: Re: Confirming Lean Energy Travel to Bishop Abiero

Great news, Enos! And thank you for clarifying my questions with Lean Energy. As I'm understanding the additional 3K in project spending, we have the following line items clearly outlined, accounting for about $2,250 depending on the exchange rate used:

1. 30,000 KSH for the additional training by Lean Energy
2. 198,700 KSH of LED bulbs and replacement bulbs

Yes this is correct as you have put it.

We also have the below costs listed by the Principal, but it's not clear to me if any of these costs overlap with what is already included above. Perhaps you can clarify for me?

- Training - $ 200
- Extended Wiring - $ 200
- Lamp Holders - $ 230
- Tube Light Fittings - $ 150
- Garden Light Stands - $ 100
- Flood Light Poles - $ 150

There is a miscalculation and an overlap in the training item (Marked Red). I have pointed it to the principal too. Training is Ksh. 30,000 about $300. It is already captured above and should not be repeated down here. The rest of the line items are correct. These are the preliminaries the technician is currently working on to get the infrastructure ready for installation and operation. The school is already spending boarding money on these. The figures are not entirely accurate. They are closest approximations since the work is not entirely complete. I'll ask the principal to put the details in a spreadsheet to facilitate reimbursement.

I've received the Principal's request for an accelerated disbursement in consideration of the fact that it takes 21 days for cheques to clear, as well as the draft TOR contract for the technical liaison. I will discuss with our team the next steps for making project payments, including the additional 2K to Lean Energy and a payment to the school. As to the draft TOR contract, it looks fair and reasonable to me, my only concern would be that all parties are clear as to the roles and responsibilities of the technical liaison in relation to Lean Energy technicians while the project is still covered by warranty. Is this being discussed?

Yes this has been discussed and will reemphasize. Notwithstanding, I see a situation where Lean Energy would come in for a major “technical breakdown” on the system, while Stephen remains handy for any operational need (the principal looks quite responsible to moderate this). I’ll ask Lean Energy and the school to define what entails the warranty and share with you.

Thanks Enos!
Patrick

[Quoted text hidden]