

# Community Needs

For

Implementation of Corporate Social Responsibility in Rural  
Energy Systems in Isolated Areas in Guyana



Organización Latinoamericana de Energía  
Latin American Energy Organization  
Organisation Latino-américaine d'Énergie  
Organizaçáo Latino-Americana de Energia



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## **Abbreviations and Acronyms**

GL&P	Guyana Light and Power
OLADE	Organization for Energy Development in Latin America and the Caribbean
GEA	Guyana Energy Agency
kWh	Kilowatt hour
PV	Photovoltaic
RE	Renewable energy
GT&T	Guyana Telephone & Telegraph
GPL	Guyana Power & Light Inc.
SHS	Solar Home Systems
CIDA	Canadian International Development Agency
GoG	Government of Guyana
LCDS	Low Carbon Development Strategy
UNDP	United Nations Development Programme
GCC	Georgetown Chamber of Commerce
SAPESI	South Africa Primary Education Support Initiative
MDG	Millennium Development Goals
BOS	Bureau Of Statistics
ATN	Atlantic Tele-Network

## **Executive Summary**

The community requirements are based on their basic individual needs and their collective community needs. Notably, several social services which are normally provided to communities within Georgetown are also sadly missing. These services vary from health and education to energy needs and commercial facilitation. Energy needs are addressed under this initial consultancy and the proposed CSR Enterprise will have the mandate to maintain the sustainability of this initial effort.

The needs of the final three (3) selected communities were examined in three (3) categories; residential, public and commercial. Residential needs range from the access to computers and other electrical appliances such as TVs, washing machines, radios and other small devices. Public needs include multi-purpose buildings, guest houses to host visitors to the community, library, health and centralized services such as water and washing facilities. Properly equipped schools and vocational training facilities are also required. From a business perspective there is the need to develop sawmills, bakeries, craft, farming and other agriculture.

While all the needs are legitimate, the scope of the consultancy required that they be prioritized resulting in a focus on key areas for each selected community. In the Region 1 and 7 communities, it is proposed that sponsorship be secured for a project to deliver 11,000 KWh per year with a peak demand of 10KW of power. Solar PV technology with battery support is the recommended solution. In the case of Kato in Region 8, it is proposed that sponsorship be secured for the existing Hydropower project which will deliver the required 250,000 KWh a year with a peak demand of less than 250 KW.





### **Background**

Corporate Guyana has been generous with their initial commitments to assist in the electrification of the rural communities in Guyana. After several meeting with individual corporations a short list of keen participants has been developed. A short list of communities has also been identified and their specific needs must now be documented. The objective at this stage of the project is to formulate specific recommendations to address these needs.

Corporations are expected to translate their commitment to CSR in the electrification process to specific contributions of financial and/or other resources required to advance the cause of the selected communities.

### 1.0 Introduction

#### 1.1 Purpose

The purpose of this report is to present the needs of the selected communities to implement the CSR model developed for Guyana. The consultancy has already proposed the final three (3) communities to participate in the initial implementation. The tasks examined will be:-

- Identify the basic needs and gender participation in each community
- Identify any potential productive activities
- Prioritize requirements
- Recommend specific requirements to be addressed under the CSR model

#### 1.2 Audience

The primary audience for this document will be:

- OLADE
- Key Stakeholders

## 2.0 Community Requirements

The community requirements are based on their basic individual needs and their collective community needs. Due to their remoteness and proximity to basic electricity, energy and other resources, many basic needs remain unaddressed. Similarly, basic social services which are normally provided to communities within Georgetown and some town areas are also sadly missing. These services vary from health and education to commercial facilitation. Under this Corporate Social Responsibility (CSR) model, all such needs are considered even though not all are addressed under this initial consultancy. The CSR Enterprise to be defined will have the mandate to maintain the sustainability of this initial effort.

The selected communities are listed below.

Community	Location
Powaikoru	Region 1
Kangaruma	Region 7
Kato	Region 8

Table 1 – Recommended Communities

The requirements of these communities were examined in three (3) categories; residential, public and commercial.

- 1) **Residential requirements** relate to activities of individual households in the community including lighting and powering of appliances.
- 2) **Public requirements** relate to activities in schools, public buildings, health facilities, guest houses, transportation, centralized water supply and similar services.

- 3) **Commercial requirements** relate to activities of businesses or facilities used for some economic endeavours and may include irrigation for farming, power for craft making, refrigeration for preservation of consumer goods and similar activities.

### 2.1 Powaikoru – Region 1

#### 2.1.1 Residential Requirements

There is the need for:-

- The younger generation to access information including internet and telephone services which are vital for a well-rounded development. These are normally delivered over fixed lines and wireless communication
- Access to computers
- Access to TV and/or Radio
- Access to basic laundry appliances (washing machine, iron)
- Access to refrigeration
- Access to electrical power for charging devices

#### 2.1.2 Public Requirements

There is a need for:-

- A multi-purpose building which includes a nursery for infants

## Community Requirements

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- A guest house to host visitors to the community
- Public lighting
- Centralized water supply
- Access to computers
- Access to TV and/or Radio
- Access to a washing machine
- Access to refrigeration
- A Primary school with proper equipment, kitchen and dining facilities

Women are expected to benefit directly from employment or relief to perform other economic activities.

### 2.1.3 Commercial Requirements

There is a need to develop:-

- A bakery
- A small sawmill business
- Medium scale chicken farming

### 2.1.4 Summary Consumption

Based on the requirements above and the development plans for the region, the consumption requirements are shown in the table below (UNDP 2012).

	<b>Residential Per Household</b>	<b>Public Building</b>	<b>Commercial Enterprise</b>
Total Daily W	65	5,000	5,000
Average Annual Hours	1,460	1,110	1,110
Average Annual KWh	95	5,550	5,550

Table 2 : Summary Projected Energy Consumption in Powaikoru – Region 1

## 2.2 Kangaruma – Region 7

### 2.2.1 Residential Requirements

There is the need for:-

- The younger generation to access information including internet and telephone services which are vital for a well-rounded development. These are normally delivered over fixed lines and wireless communication
- Access to computers
- Access to TV and/or Radio
- Access to basic laundry appliances (washing machine, iron)
- Access to refrigeration

- Access to electrical power for charging devices

### 2.2.2 Public Requirements

There is a need for:-

- A multi-purpose building which includes a nursery for infants
- A guest house to host visitors to the community
- A library
- Public lighting
- Centralized water supply
- Access to computers
- Access to TV and/or Radio
- Access to Access to basic laundry appliances (washing machine, iron)
- Access to refrigeration
- Proper equipment, kitchen and dining facilities for schools
- A vocational training centre

Women are expected to benefit directly from employment or relief to perform other economic activities

### 2.2.3 Commercial Requirements

There is a need to develop:-

- A multi-purpose building to be used for craft
- A carpentry centre
- A bakery
- A small sawmill business
- Medium scale chicken farming

Women are expected to benefit directly from employment due to their major involvement in craft and cookery.

### 2.2.4 Summary Consumption

Based on the requirements above and the development plans for the region, the consumption requirements are shown in the table below (UNDP 2012).

	<b>Residential Per Household</b>	<b>Public Building</b>	<b>Commercial Enterprise</b>
Total Daily W	65	5,000	5,000
Average Annual Hours	1,460	1,110	1,110
Average Annual KWh	95	5,550	5,550

Table 3 : Summary Projected Energy Consumption in Kangaruma - Region 7

### 2.3 Kato – Region 8

#### 2.3.1 Residential Requirements

The residential needs of Kato are expected to be no less than those in Regions 1 and 7 and be of a similar composition.

#### 2.3.2 Public Requirements

The existing public needs are met by a 3.5 KW diesel generation. There is an additional need for:-

- Enhanced equipment, kitchen and dining facilities for the Primary school
- A Secondary school with proper equipment, kitchen and dining facilities
- A vocational training centre

#### 2.3.3 Commercial Requirements

There is a need to develop:-

- Fish farming
- Medium scale agriculture

Women are expected to benefit directly from employment.

### 2.3.4 Summary Consumption

Based on the requirements above the consumption requirements are shown in the table below (CREDP/GIZ 2012).

	<b>Residential (All)</b>	<b>Public Buildings</b>	<b>Commercial Enterprise</b>
Total Daily W	55,000	100,000	45,000
Average Annual Hours	1,460	1,110	1,110
Average Annual KWh	80,300	111,000	49,950

Table 4 : Summary Projected Energy Consumption in Kato - Region 8

### **3.0 Prioritized Requirements**

#### **3.1 Key Consideration**

In order to assess the areas of community needs which can be addressed by this initiative, specific consideration were examined. These included:-

- Benefits to individuals
  
- Benefits to community as a whole
  
- Female Impact
- Productivity Potential

#### **3.2 Powaikoru – Region 1**

In an assessment completed by the UNDP for Region 1, it was indicated that the individual energy needs are expected to increase by a factor of five. If each existing supply to individual households is to be increased accordingly, the whole energy supply system will become very inefficient. It is proposed that a more centralized approach to the supply of energy and other services be adopted.

Given the scope and objectives of this CSR intervention, resources may be better utilized by addressing the public and commercial aspects of the community needs. This will also meet many of the individual household needs. In the case of this community in Region 1, it is proposed that a multi-purpose public building be provided which can address the needs for:-

- A shared area to provide access to computers, TV, Radio and other small devices
- A bakery

For this community, it is therefore proposed that sponsorship is secured for a project to deliver 11,000 KWh per year with a peak demand of 10KW of power. Solar PV technology with battery support is the recommended solution.

### **3.3 Kangaruma – Region 7**

Similar to the community in Region 1, in Region 7 it is proposed that a multi-purpose public building be provided which can address the needs for:-

- A library with a shared area to provide access to computers, TV, Radio and other small devices
- A vocational training and craft centre

For this community, it is therefore proposed that sponsorship is secured for a project to deliver 11,000 KWh per year with a peak demand of 10KW of power. Solar PV technology with battery support is the recommended solution.

### **3.4 Kato – Region 8**

The Kato project in Guyana's hinterland in Region 8 is an example of rural electrification based on hydropower and is co-financed through a grant from the European Union's Energy Facility. It is expected to be completed within 3 years. At present, Kato does not have a continuous electricity supply; only a 3.5 kW

diesel generator which provides electricity for the government guesthouse and the police station for 3 to 4 hours in the evening and a 16 kW generator that is located in the secondary school in nearby Paramakatoi. Besides reducing the high electricity generation cost, the carbon emissions related to the generation of electricity using diesel fuel will be reduced. The hydropower plant will account for a CO<sub>2</sub> reduction of about 20 Tons per year.

Once completed, the 330 KW hydro-plant will deliver 305 KW of power to Kato and possibly to neighbouring Paramakatoi. With proper balancing of demand and supply, all the needs may be met (CREDP/GIZ 2012).

This project has had some challenges attracting the appropriate levels of financing and expertise. The CSR schema can certainly assist with the financial aspect which may in turn also assist in the attraction of better expertise.

For Kato it is therefore proposed to secure sponsorship for the existing Hydropower project which will deliver the required 250,000 KWh a year with a peak demand of less than 250 KW and addressed all four (4) areas of consideration. The load curve for electricity consumption in Kato is shown below.

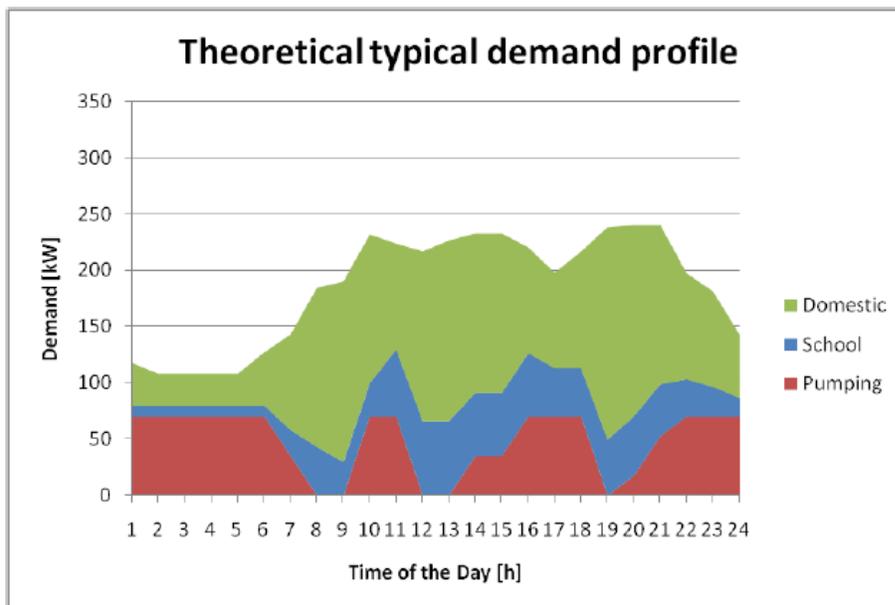


Figure 2 : Demand Curve for Kato

## 4.0 WAY FORWARD

### 4.1 Objectives

The next stage of the consultancy will focus on achieving the following key objectives. They are:-

- Develop the CSR Enterprise structure with roles and responsibilities
- Complete required work to legitimize the CSR Enterprise
- Prepare a draft agreement between CSR Enterprises and Corporate partners
- Identify sustainability elements required for the model
- Examine local financing models
- Define government's support for the Guyana CSR model with possible incentives for partners
- Develop financial model for CSR Enterprise considering sustainability

### 4.2 Plans

Discussion will be continued with the Ministry of Amerindian Affairs (MOAA) which has responsibility for the rural communities to identify the most appropriate local leadership scheme. In addition, an audience will be sought with the Ministry of Finance and other potential private sector institutions which are critical to the existence of the CSR Enterprise and its sustainability.

Based on their inputs, the CSR Enterprise will be fully defined with provision for the integration of the critical sustainability elements.

### REFERENCES

Government of Guyana / UNDP, 2012, Energy Access at Community Level for MDG Achievement in Hinterland Areas, Project FINAL REPORT, Guyana

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