

# **GS Monitoring Report**

**Hunan Guanbaodu-Liangjiangkou Small-scale Hydropower**

**Bundle Project**

**(Gold Standard ID 835)**

Monitoring period: 01/01/2018 – 31/12/2018

Version 02

16/08/2019

Climate Bridge Ltd.

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## 1. INTRODUCTION

The purpose of this report is to calculate the emission reductions achieved by *Hunan Guanbaodu-Liangjiangkou Small-scale Hydropower Bundle Project* (Gold Standard ID 835) during the monitoring and crediting period covered by this report, and to serve as basis for the verification and issuance of corresponding GS VER credits.

### 1.1 Monitoring and Crediting Period

This monitoring report covers the 7<sup>th</sup> monitoring period: 01/01/2018 -- 31/12/2018 which belongs to the second crediting period of the project.

The second renewable crediting period of the project is: 01/01/2016 – 31/12/2022

### 1.2 Document Reference

Version: 02

Date: 16/08/2019

## 2. GENERAL DESCRIPTION OF THE PROJECT

The *Hunan Guanbaodu-Liangjiangkou Small-scale Hydropower Bundle Project* (hereafter referred to as “the bundled project”) consists of two hydropower projects in Huaihua City, Hunan Province, P.R. China. The total installed capacity of the bundle project is 5.89 MW, and the electricity will be transferred to Central China Power Grid (CCPG). The construction of *Guanbaodu Hydropower Station* (hereafter referred to as “Guanbaodu”) commenced in August 2005 with an installed capacity of 4 MW, and its operation started in January 2008; and the construction of *Liangjiangkou Hydropower Station* (hereafter referred to as “Liangjiangkou”) commenced in August 2006 with an installed capacity of 1.89 MW, and its operation started in January 2008.

The bundled project was registered on 31/12/2010 and the start date of the first crediting period of the bundled project is defined as 1<sup>st</sup> Jan 2009. The chosen crediting period is 7 years and the second crediting period is from 01/01/2016 - 31/12/2022. This monitoring period (01/01/2018 to 31/12/2018) is the seventh monitoring period, and the net electricity generated during this monitoring period is 17,186.96 MWh, the total emission reduction being claimed in this monitoring period is 10,282 tCO<sub>2</sub>e.

To avoid double counting issues, the project participant has made a declaration (as shown in Annex 1) that states no RECs are being issued for the project under consideration for GS VERs.

Guanbaodu is located on the lower reach of Qushui River in Guanbaodu Village, Taiyangping Town, Jingzhou Miao & Dong Autonomous County, Huaihua City, Hunan Province of China, and the project is 16 km from Jingzhou County and the geographical coordinates are east longitude 109°44'09" and north latitude 26°40'38". Liangjiangkou is located on the Tongdao River in Liangjiangkou Village, Shuangjiang Town, Tongdao Dong Autonomous County, Huaihua City, Hunan Province of China, and the project is 8.5 km away from Tongdao County and the geographical coordinates are east longitude 109°47'45" and north latitude 26°13'11".

The bundled project contributes to Sustainable Development through the reduction of GHG emissions and other pollutants associated with the standard practice of fossil fuel fired power plants in the region. It also contributes to ensuring the local power supply by generating reliable hydro power, promoting the local economy development and improvement of livelihoods by creating job opportunities, and helping local residents pave roads, build bridges, and construct power transmission lines. Please refer to the project PDD for more detailed information.

The project uses run-of-the-river hydropower technology to generate electricity. The water from the river is diverted through the diversion dam and the water diversion system to the power house, fueling the turbines for electricity generation. The key technical parameters are listed in the table below:

**Table 2-1** Technical parameters of the two bundled projects

| Item               | Unit  | Parameter       |               |
|--------------------|-------|-----------------|---------------|
|                    |       | Guanbaodu       | Liangjiangkou |
| Turbine            |       |                 |               |
| Quantity           | /     | 4               | 3             |
| Model              | /     | GD008-WZ-275    | Z003-LH-160   |
| Rated Power        | kW    | 1,097           | 700           |
| Rated water head   | m     | 3.4             | 6.8           |
| Rotate speed       | r/min | 133.3           | 250           |
| Generator          |       |                 |               |
| Quantity           | /     | 4               | 3             |
| Model              | /     | SFW1000-10/1430 | SF630-24/1730 |
| Rated Power        | kW    | 1,000           | 630           |
| Rated voltage      | V     | 6,300           | 400           |
| Rated current      | A     | 114             | 113           |
| Rated rotate speed | r/min | 600             | 250           |
| Power factor       | /     | 0.8             | 0.8           |

### 3. POST-REGISTRATION CHANGE

The project used to consist of three hydropower projects, the Guanbaodu hydropower project (referred as 'Guanbaodu'), the Liangjiangkou hydropower project (referred as 'Liangjiangkou') and the Xinglong hydropower project (referred as 'Xinglong'). The total installed capacity of the bundle project was 7.65 MW with annual expected net electricity generation (electricity supplied to power grid) of 27,745MWh.

Upon a design change request on 08/08/2014, the project participants changed the design of the project by removing one of the hydropower projects (Xinglong) from the bundled project. The rest two projects were still bundled and nothing else changed. The design change has been approved by GS registry on 03/09/2014.

As a result, the changed project only consists of two hydropower projects (Guanbaodu and Liangjiangkou), and the installed capacity is 5.89 MW with annual expected net electricity generation of 21,612 MWh. Also, the project title has also been changed from 'Guanbaodu-Liangjiangkou-Xinglong Small-scale Hydropower Bundle Project' to 'Guanbaodu-Liangjiangkou Small-scale Hydropower Bundle Project'.

## 4. DESCRIPTION OF MONITORING SYSTEM

### 4.1 Monitoring data and procedures

The baseline and monitoring methodology applied for the project is methodology ACM0002 (Version 16.0): "Grid-connected electricity generation from renewable sources".

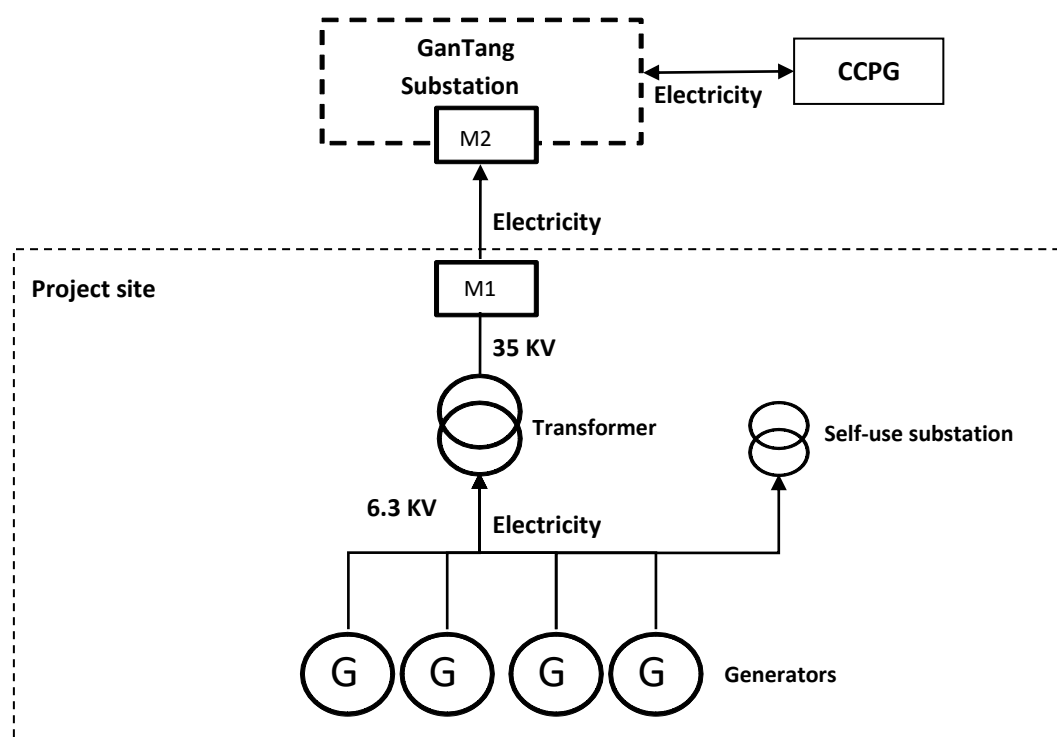
Relevant data and parameters necessary for determining the emission reductions for each of the project are list below:

#### Guanbaodu

| ID number | Data variable                        | Source of data | Data unit | Measured (m), calculated (c), estimated (e), | Recording Frequency                          | Data value                      | How will the data be archived? (electronic/ paper) | Comment                                                                                          |
|-----------|--------------------------------------|----------------|-----------|----------------------------------------------|----------------------------------------------|---------------------------------|----------------------------------------------------|--------------------------------------------------------------------------------------------------|
| 1         | Electricity export ( $EG_{export}$ ) | Meter reading  | MWh       | m                                            | Continuous measurement and monthly recording | See details in <b>Table 5-1</b> | Paper                                              | Electricity monitored by meter records and cross checked by Electricity Transaction Notes (ETN). |

|   |                                                                     |                          |                  |   |                                              |                                 |       |                                                                                                                                                     |
|---|---------------------------------------------------------------------|--------------------------|------------------|---|----------------------------------------------|---------------------------------|-------|-----------------------------------------------------------------------------------------------------------------------------------------------------|
| 2 | Electricity import ( $EG_{import}$ )                                | Meter reading            | MWh              | m | Continuous measurement and monthly recording | See details in <b>Table 5-1</b> | Paper | Electricity monitored by meter records and cross checked by Electricity Transaction Notes (ETN).                                                    |
| 3 | Net Electricity supplied to the grid by the project ( $EG_{PJ,y}$ ) | ID3=ID1 – ID2            | MWh              | c | Continuous measurement and monthly recording | See details in <b>Table 5-1</b> | Paper | Electricity monitored by meter records and cross checked by Electricity Transaction Notes (ETN).                                                    |
| 4 | Installed capacity                                                  | Readings of nameplate    | MW               | m | Yearly                                       | 4 (2018)                        | Paper | The installed capacity is monitored by checking the nameplates of all the generators installed in the project                                       |
| 5 | Area of the reservoir                                               | The third party's report | m <sup>2</sup>   | m | Yearly                                       | 328,000 (2018)                  | Paper | The area of the reservoir is measured by local River Management Station                                                                             |
| 6 | Power density                                                       | ID6=ID4/ID5              | W/m <sup>2</sup> | c | Yearly                                       | 12.20 (2018)                    | Paper | The results during the whole verification period are higher than 10W/m <sup>2</sup> , therefore, no project emission needs to be taken into account |

**Figure 4-1** shows the electricity connection diagram of *Guanbaodu*.



**Figure 4-1** Electricity connection diagram of Guanbaodu

The local power company uses a bidirectional gateway meter (M2) which is installed at the Gantang Transformer Station and owned by local power company to measure and record the amount of electricity exported to the grid and the amount of electricity imported from the grid. The readings of gateway meter (M2) were recorded on a monthly basis, and the Electricity Transaction Note (ETN) was served as additional check for quality control. All data will be archived for at least 2 years after the end of the last crediting period. M1 installed at the power station is the back-up meter, and it is owned by the Guanbaodu Hydropower Station; the technical staff at the power station recorded the readings of M1 every day and write daily log.

M1 and M2 were installed and verified according to *Technical Administrative Code of Electricity Energy Metering* (DL/T448-2000). The two meters was calibrated once a year by the Measurement Institute of Jingzhou Power Co., Ltd. to secure the measurement accuracy.

If M2 is detected any failure but M1 operates normally, the emission reduction will be conservatively calculated by the readings of M1. The faulty meter will be repaired or replaced by the accredited equipment testing organization as soon as possible. If malfunction occurs for both M1 and M2, no emission reductions will be claimed until the malfunction is fixed.

No failure of the meters occurred during this monitoring period.

Specifications of M1 and M2 are listed in table 3-1 below:

**Table 4-1** Specifications of Meters used for Guanbaodu

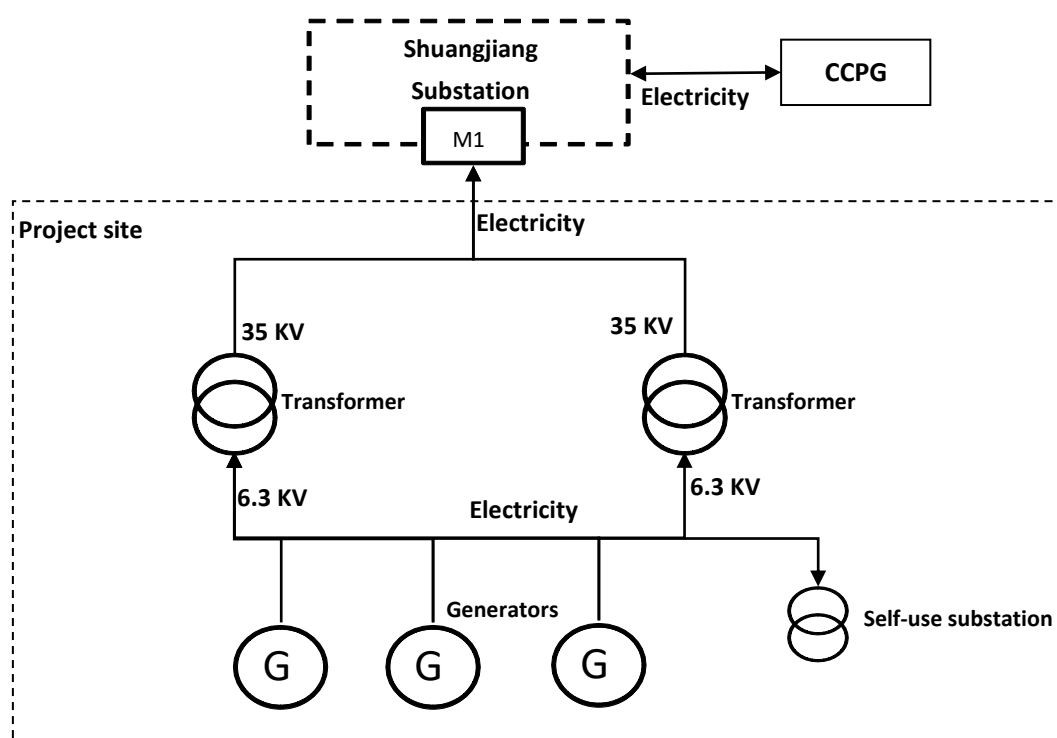
| Meter No. | Type   | Serial No.       | Accuracy | Calibration Frequency | Date of Calibrations     | Validity                                       |
|-----------|--------|------------------|----------|-----------------------|--------------------------|------------------------------------------------|
| M1        | DSSD25 | 0704575          | 0.5      | Yearly                | 16/05/2017<br>16/05/2018 | 16/05/2017-15/05/2018<br>16/05/2018-15/05/2019 |
| M2        | DSZ331 | 1201000000<br>49 | 0.5s     | Yearly                | 16/05/2017<br>16/05/2018 | 16/05/2017-15/05/2018<br>16/05/2018-15/05/2019 |

### Liangjiangkou

| ID number | Data variable                                                       | Source of data        | Data unit | Measured (m), calculated (c), estimated (e), | Recording Frequency                          | Data value               | How will the data be archived? (electronic/ paper) | Comment                                                                                                       |
|-----------|---------------------------------------------------------------------|-----------------------|-----------|----------------------------------------------|----------------------------------------------|--------------------------|----------------------------------------------------|---------------------------------------------------------------------------------------------------------------|
| 1         | Electricity export ( $EG_{export}$ )                                | Meter reading         | MWh       | m                                            | Continuous measurement and monthly recording | See details in Table 5-2 | Paper                                              | Electricity monitored by meter records and cross checked by Electricity Transaction Notes (ETN).              |
| 2         | Electricity import ( $EG_{import}$ )                                | Meter reading         | MWh       | m                                            | Continuous measurement and monthly recording | See details in Table 5-2 | Paper                                              | Electricity monitored by meter records and cross checked by Electricity Transaction Notes (ETN).              |
| 3         | Net Electricity supplied to the grid by the project ( $EG_{PJ,y}$ ) | ID3=ID1 – ID2         | MWh       | c                                            | Continuous measurement and monthly recording | See details in Table 5-2 | Paper                                              | Electricity monitored by meter records and cross checked by Electricity Transaction Notes (ETN).              |
| 4         | Installed capacity                                                  | Readings of nameplate | MW        | m                                            | Yearly                                       | 1.89 (2018)              | Paper                                              | The installed capacity is monitored by checking the nameplates of all the generators installed in the project |

|   |                       |                          |                  |   |        |                |       |                                                                                                                                                     |
|---|-----------------------|--------------------------|------------------|---|--------|----------------|-------|-----------------------------------------------------------------------------------------------------------------------------------------------------|
| 5 | Area of the reservoir | The third party's report | m <sup>2</sup>   | m | Yearly | 177,700 (2018) | Paper | The area of the reservoir is measured by local River Management Station                                                                             |
| 6 | Power density         | ID6=ID4/I D5             | W/m <sup>2</sup> | c | Yearly | 10.64 (2018)   | Paper | The results during the whole verification period are higher than 10W/m <sup>2</sup> , therefore, no project emission needs to be taken into account |

Figure 4-2 shows the electricity connection diagram of *Liangjiangkou*.



**Figure 4-2** Electricity connection diagram of Liangjiangkou

The local power company uses the bidirectional gateway meter (M1) which is installed at the Shuangjiang Transformer Station and owned by local power company to measure and record the amount of electricity exported to the grid and the amount of electricity imported from the grid. The readings of gateway meter (M1) were recorded on a monthly basis, and the Electricity Transaction Note (ETN) was served as additional check for quality control. All data will be archived for at least 2 years after the end of the last crediting period.

M1 was installed and verified according to *Technical Administrative Code of Electricity Energy Metering* (DL/T448-2000). The operation of M1 was checked periodically by the Tongdao Power Company and calibrated once every year.

If M1 is detected any failure, no emission reductions will be claimed until the malfunction is fixed.

No failure of the meter occurred during this monitoring period.

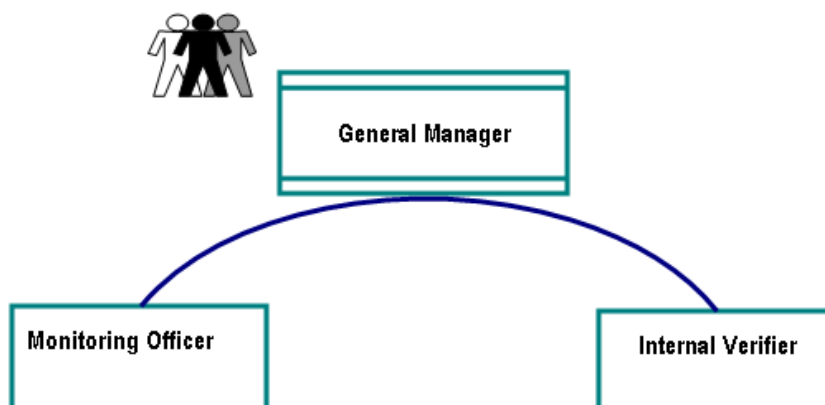
Specifications of M1 are listed in table 3-2 below:

**Table 4-2** Specifications of meters used for Liangjiangkou

| Meter No. | Type   | Serial No.            | Accuracy | Calibration Frequency | Date of Calibration      | Validity                                       |
|-----------|--------|-----------------------|----------|-----------------------|--------------------------|------------------------------------------------|
| M1        | DSZ331 | 434800100036<br>97381 | 0.5s     | Yearly                | 11/05/2017<br>11/05/2018 | 11/05/2017-10/05/2018<br>11/05/2018-10/05/2019 |

## 4.2 Operational and management structure

The monitoring of the emissions reductions of all the three bundled projects are basically the same as each other. The monitoring process will be carried out according to the operation and management structure shown in **Figure 3-4**:



**Figure 4-4** Operations and Management Structure

- 1) The General Manager conducts the overall responsibility for the monitoring process.
- 2) Station staff serves as the monitoring officer to carry out the measurement of the exports and imports electricity recordings.
- 3) An accountant worked as internal verifier is responsible for internal verification of the measurement, collection of electricity receipts and invoices and the calculation of the

emission reductions.

### 4.3 Quality control (QC) and quality assurance (QA)

Besides data management procedure described above, the project owner also take the following procedures to ensure the operation and accuracy:

- 1) All meters are installed in accordance with the national Chinese standard *Technical Administrative Code of Electricity Energy Metering* (DL/T448-2000).
- 2) All relevant staff receives training periodically to improve their know-how and performance.
- 3) A monitoring and management manual identifying detailed duties and responsibilities of the relevant parties has been developed by Climate Bridge Ltd., and will be served as a basis of the project monitoring.
- 4) In the case that the readings of meters are not within the acceptable precision level at any month or the meter works abnormally, the net electricity supplied to grid will be confirmed based on the conventional process accepted by project owner and Grid Company. If such happens, relevant proof will be achieved by both parties and submitted for verification.

## 5. CALCULATION OF EMISSION REDUCTIONS OR GHG REMOVALS BY SINKS

### 5.1 Baseline Emissions (BE<sub>y</sub>)

Baseline Emissions are calculated by multiplying the Baseline Emission factor by annual power generation as follows:

$$BE_y = EG_{PJ,y} \times EF_{grid,CM,y} \quad (1)$$

Where :

- $BE_y$  = Baseline Emissions in year y; (tCO<sub>2</sub>/yr).  
 $EG_{PJ,y}$  = Quantity of net electricity generation supplied by the project plant/unit to the grid in year (MWh/yr).  $EG_{PJ,y} = EG_{export,y} - EG_{import,y}$   
 $EF_{grid,CM,y}$  = Combined margin CO<sub>2</sub> emission factor in year y (tCO<sub>2</sub>e/MWh).  
 According to the registered PDD,  $EF_{grid,CM,y} = 0.5983$  tCO<sub>2</sub>e/MWh

### 5.2 Project Emissions (PE<sub>y</sub>)

According to the PDD, the formula used for the determination of project emissions is as follow,

$$PE_y = PE_{FF,y} + PE_{GP,y} + PE_{HP,y}$$

Where:

- $PE_y$  = Project emissions in year y (tCO<sub>2</sub>e/yr)  
 $PE_{FF,y}$  = Project emissions from fossil fuel consumption in year y (tCO<sub>2</sub>/yr)

$PE_{GP,y}$  = Project emissions from the operation of geothermal power plants due to the release of non-condensable gases in year  $y$  (tCO<sub>2</sub>e/yr)

$PE_{HP,y}$  = Project emissions from water reservoirs of hydro power plants in year  $y$  (tCO<sub>2</sub>e/yr)

According to ACM0002, for all renewable energy power generation project activities, emissions due to the use of fossil fuels for the backup generator can be neglected, so  $PE_{FF,y} = 0$ .

The project is not a geothermal power plant, thus  $PE_{GP,y} = 0$ .

Therefore,  $PE_y = PE_{HP,y}$

The project is a new hydropower project and results in a new reservoir, according to ACM0002 (Version 16.0), its power density of is calculated as follows:

$$PD = \frac{Cap_{PJ} - Cap_{BL}}{A_{PJ} - A_{BL}} \quad (2)$$

Where:

- $PD$  = Power density of the project activity (W/m<sup>2</sup>)
- $Cap_{PJ}$  = Installed capacity of the hydro power plant after the implementation of the project activity (W)
- $Cap_{BL}$  = Installed capacity of the hydro power plant before the implementation of the project activity (W). For new hydro power plants, this value is zero
- $A_{PJ}$  = Area of the reservoir measured in the surface of the water, after the implementation of the project activity, when the reservoir is full (m<sup>2</sup>)
- $A_{BL}$  = Area of the reservoir measured in the surface of the water, before the implementation of the project activity, when the reservoir is full (m<sup>2</sup>). For new reservoirs, this value is zero

For the bundled two projects, for Guanbaodu:

$Cap_{BL} = 0$ ,  $A_{BL} = 0$ , and as listed in section 4.1,  $Cap_{PJ} = 4\text{MW}$ , and the area of reservoir  $A_{PJ}$  in 2018 was 328,000 m<sup>2</sup>, so the power density  $PD$  in 2018 was 12.20 W/m<sup>2</sup>, which is greater than 10W/m<sup>2</sup>;

and for Liangjiangkou,

$Cap_{BL} = 0$ ,  $A_{BL} = 0$ ,  $Cap_{PJ} = 1.89\text{MW}$ , and the area of reservoir  $A_{PJ}$  in 2018 was 177,700 m<sup>2</sup>, so the power density  $PD$  in 2018 was 10.64 W/m<sup>2</sup>, which is greater than 10W/m<sup>2</sup>.

Therefore, according to ACM0002, the project emissions resulting from the project are zero.

$PE_y = 0$  tCO<sub>2</sub>e.

### 5.3 Leakage Emissions (LE<sub>y</sub>)

According to ACM0002 (Version 16.0), there is no leakage considered, i.e.  $LE_y = 0$  tCO<sub>2</sub>e.

## 5.4 Emission Reductions ( $ER_y$ )

The emission reductions ( $ER_y$ ) by the project during a given year  $y$  are the difference among baseline emissions ( $BE_y$ ), project emissions ( $PE_y$ ).

The final GHG emission reductions are calculated as follows:

$$ER_y = BE_y - PE_y \quad (3)$$

Where :

- $ER_y$  = Emissions Reductions by the project in year  $y$ ; (tCO<sub>2</sub>/yr).
- $BE_y$  = Baseline Emissions in year  $y$ ; (tCO<sub>2</sub>/yr).
- $PE_y$  = Project Emissions in year  $y$ ; (tCO<sub>2</sub>/yr).

Detailed amounts of the recorded electricity generated from the project and calculations of emission reductions are listed below:

**Table 5-1 Emission reduction of Guanbaodu during January 2018 to December 2018**

| Period               |            | Guanbaodu                       |                              |                   |                                |                             |                             |                             |
|----------------------|------------|---------------------------------|------------------------------|-------------------|--------------------------------|-----------------------------|-----------------------------|-----------------------------|
|                      |            | $EG_{\text{exported}}$<br>(MWh) | $EG_{\text{imported}}$ (MWh) | $EG_{PJ,y}$ (MWh) | $BE_y$ (tCO <sub>2</sub> e)    | $PE_y$ (tCO <sub>2</sub> e) | $LE_y$ (tCO <sub>3</sub> e) | $ER_y$ (tCO <sub>2</sub> e) |
| From                 | To         | A                               | B                            | C=A-B             | D= C × EF <sub>grid,CM,y</sub> | E                           | F                           | G=D-E-F                     |
| 01/01/2018           | 25/01/2018 | 499.38                          | 6.16                         | 493.22            | <b>295.09</b>                  | 0.00                        | 0.00                        | <b>295.09</b>               |
| 26/01/2018           | 25/02/2018 | 447.44                          | 6.72                         | 440.72            | <b>263.68</b>                  | 0.00                        | 0.00                        | <b>263.68</b>               |
| 26/02/2018           | 25/03/2018 | 559.16                          | 3.01                         | 556.15            | <b>332.74</b>                  | 0.00                        | 0.00                        | <b>332.74</b>               |
| 26/03/2018           | 25/04/2018 | 846.58                          | 1.96                         | 844.62            | <b>505.34</b>                  | 0.00                        | 0.00                        | <b>505.34</b>               |
| 26/04/2018           | 25/05/2018 | 1,531.46                        | 0.77                         | 1,530.69          | <b>915.81</b>                  | 0.00                        | 0.00                        | <b>915.81</b>               |
| 26/05/2018           | 25/06/2018 | 2,415.84                        | 0.21                         | 2,415.63          | <b>1,445.27</b>                | 0.00                        | 0.00                        | <b>1,445.27</b>             |
| 26/06/2018           | 25/07/2018 | 1,357.16                        | 0.42                         | 1,356.74          | <b>811.74</b>                  | 0.00                        | 0.00                        | <b>811.74</b>               |
| 26/07/2018           | 25/08/2018 | 847.84                          | 1.75                         | 846.09            | <b>506.22</b>                  | 0.00                        | 0.00                        | <b>506.22</b>               |
| 26/08/2018           | 25/09/2018 | 651.63                          | 2.10                         | 649.53            | <b>388.61</b>                  | 0.00                        | 0.00                        | <b>388.61</b>               |
| 26/09/2018           | 25/10/2018 | 614.04                          | 1.89                         | 612.15            | <b>366.25</b>                  | 0.00                        | 0.00                        | <b>366.25</b>               |
| 26/10/2018           | 25/11/2018 | 848.82                          | 1.82                         | 847.00            | <b>506.76</b>                  | 0.00                        | 0.00                        | <b>506.76</b>               |
| 26/11/2018           | 31/12/2018 | 703.50                          | 1.75                         | 701.75            | <b>419.86</b>                  | 0.00                        | 0.00                        | <b>419.86</b>               |
| <b>2018 Subtotal</b> |            | <b>11,322.85</b>                | <b>28.56</b>                 | <b>11,294.29</b>  | <b>6,757.37</b>                | <b>0.00</b>                 | <b>0.00</b>                 | <b>6,757.37</b>             |
| <b>Total</b>         |            |                                 |                              | <b>11,294.29</b>  |                                |                             |                             | <b>6,757.37</b>             |

**Note:** The general recording date is 25<sup>th</sup> of each month, for January 2018, the electricity during 26/12/2017 to 31/12/2017 has been deducted and the electricity during 26/12/2018 to 31/12/2018 has been added for December 2018, the relevant data came from PO's reading records which have been confirmed by the grid company.

**Table 5-2 Emission reduction of Liangjiangkou during January 2018 to December 2018**

| Period               |            | Liangjiangkou                      |                                    |                                |                                            |                                            |                                            |                                            |
|----------------------|------------|------------------------------------|------------------------------------|--------------------------------|--------------------------------------------|--------------------------------------------|--------------------------------------------|--------------------------------------------|
|                      |            | <i>EG<sub>exported</sub></i> (MWh) | <i>EG<sub>imported</sub></i> (MWh) | <i>EG<sub>PJ,y</sub></i> (MWh) | <i>BE<sub>y</sub></i> (tCO <sub>2e</sub> ) | <i>PE<sub>y</sub></i> (tCO <sub>2e</sub> ) | <i>LE<sub>y</sub></i> (tCO <sub>3e</sub> ) | <i>ER<sub>y</sub></i> (tCO <sub>2e</sub> ) |
| From                 | To         | A                                  | B                                  | C=A-B                          | D= C ×<br>EF <sub>grid,CM,y</sub>          | E                                          | F                                          | G=D-E-F                                    |
| 01/01/2018           | 25/01/2018 | 226.408                            | 2.970                              | 223.438                        | <b>133.68</b>                              | 0.00                                       | 0.00                                       | <b>133.68</b>                              |
| 26/01/2018           | 25/02/2018 | 203.336                            | 3.141                              | 200.195                        | <b>119.78</b>                              | 0.00                                       | 0.00                                       | <b>119.78</b>                              |
| 26/02/2018           | 25/03/2018 | 249.648                            | 1.998                              | 247.650                        | <b>148.17</b>                              | 0.00                                       | 0.00                                       | <b>148.17</b>                              |
| 26/03/2018           | 25/04/2018 | 322.168                            | 2.194                              | 319.974                        | <b>191.44</b>                              | 0.00                                       | 0.00                                       | <b>191.44</b>                              |
| 26/04/2018           | 25/05/2018 | 768.460                            | 1.144                              | 767.316                        | <b>459.09</b>                              | 0.00                                       | 0.00                                       | <b>459.09</b>                              |
| 26/05/2018           | 25/06/2018 | 879.788                            | 2.393                              | 877.395                        | <b>524.95</b>                              | 0.00                                       | 0.00                                       | <b>524.95</b>                              |
| 26/06/2018           | 25/07/2018 | 647.164                            | 1.627                              | 645.537                        | <b>386.22</b>                              | 0.00                                       | 0.00                                       | <b>386.22</b>                              |
| 26/07/2018           | 25/08/2018 | 606.788                            | 0.700                              | 606.088                        | <b>362.62</b>                              | 0.00                                       | 0.00                                       | <b>362.62</b>                              |
| 26/08/2018           | 25/09/2018 | 482.748                            | 1.344                              | 481.404                        | <b>288.02</b>                              | 0.00                                       | 0.00                                       | <b>288.02</b>                              |
| 26/09/2018           | 25/10/2018 | 401.100                            | 1.400                              | 399.700                        | <b>239.14</b>                              | 0.00                                       | 0.00                                       | <b>239.14</b>                              |
| 26/10/2018           | 25/11/2018 | 674.240                            | 0.952                              | 673.288                        | <b>402.83</b>                              | 0.00                                       | 0.00                                       | <b>402.83</b>                              |
| 26/11/2018           | 31/12/2018 | 451.976                            | 1.288                              | 450.688                        | <b>269.65</b>                              | 0.00                                       | 0.00                                       | <b>269.65</b>                              |
| <b>2018 Subtotal</b> |            | <b>5,913.82</b>                    | <b>5.68</b>                        | <b>5,892.67</b>                | <b>3,525.59</b>                            | <b>0.00</b>                                | <b>0.00</b>                                | <b>3,525.59</b>                            |
| <b>Total</b>         |            |                                    |                                    | <b>5,892.67</b>                |                                            |                                            |                                            | <b>3,525.59</b>                            |

**Note:** The general recording date is 26<sup>th</sup> of each month, for January 2018, the electricity during 26/12/2017 to 31/12/2017 has been deducted and the electricity during 26/12/2018 to 31/12/2018 has been added for December 2018, the relevant data came from PO's reading records which have been confirmed by the grid company.

**Table 5-3 Emission Reductions of the Bundled Project during 2018**

|                                                                 | Guanbaodu ER <sub>y</sub><br>(tCO <sub>2</sub> e) | Liangjiangkou ER <sub>y</sub><br>(tCO <sub>2</sub> e) | ER <sub>y</sub> of the Bundled<br>Project (tCO <sub>2</sub> e) |
|-----------------------------------------------------------------|---------------------------------------------------|-------------------------------------------------------|----------------------------------------------------------------|
| 2018                                                            | 6,757.37                                          | 3,525.59                                              | 10,282                                                         |
| Total ER of the bundled project during this monitoring period = |                                                   |                                                       | 10,282                                                         |

### 5.5 Comparison of actual emission reductions or net anthropogenic GHG removals by sinks with estimates in registered PDD

|                        | Values estimated in ex-ante calculation of<br>registered PDD<br>(tCO <sub>2</sub> e) |                                          | Actual values achieved during<br>this monitoring period<br>(tCO <sub>2</sub> e) |
|------------------------|--------------------------------------------------------------------------------------|------------------------------------------|---------------------------------------------------------------------------------|
|                        | Annual (365 days) <sup>1</sup>                                                       | For this monitoring<br>period (365 days) | 365 days                                                                        |
| Guanbaodu              | 9,281                                                                                | 9,281                                    | 6,757                                                                           |
| Liangjiangkou          | 3,649                                                                                | 3,649                                    | 3,525                                                                           |
| <b>Bundled project</b> | <b>12,930</b>                                                                        | <b>12,930</b>                            | <b>10,282</b>                                                                   |

For Guanbaodu, the actual emission reductions achieved during the reported monitoring period are lower (27.19%) than the arithmetic average value calculated based on that estimated in the registered PDD. It is because the precipitation in July of Jingzhou County was 49% less than average level in historical year<sup>2</sup> and July is belong to rainy season. So the electricity generation in 2018 was lower than previous years which is reasonable.

For Liangjiangkou, the actual emission reductions achieved during the reported monitoring period are slightly lower (3.40%) than the arithmetic average value calculated based on that estimated in the registered PDD.

## 6. SUSTAINABLE DEVELOPMENT MONITORING

As mentioned in the PDD, a management team led by the general manager has been established for each project in the bundle to carry out monitoring and internal verification tasks during the operation period. The most sensitive sustainable development indicators for each project have been determined for monitoring.

The details of the monitoring performance during this period are list below:

<sup>1</sup> Based on registered PDD.

<sup>2</sup> [http://www.jzx.gov.cn/publicity\\_slj/ghjh52/9804](http://www.jzx.gov.cn/publicity_slj/ghjh52/9804)



| Sustainable Development Indicator | Data type                         | Data unit           | Measure d (m), calculate d (c) or estimate d (e) | Recording frequency                | Methods and equipments used                                                                                                                                                                                                                     | Results                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      | Sources                                                                                                                                     |
|-----------------------------------|-----------------------------------|---------------------|--------------------------------------------------|------------------------------------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|---------------------------------------------------------------------------------------------------------------------------------------------|
| Water quality and quantity        | Local/regional/global environment | Level of management | e                                                | Yearly during the operation period | <p>The waste water during the operation period was monitored by stakeholders' questionnaires and relevant management.</p> <p>The discharge amount of sanitary wastewater was monitored by the payroll with information of employee numbers.</p> | <p>According to Standard of Quota for Water Use (DB43/T 388-2008), maximum daily demand of water use in rural area in Hunan Province is considered 80 liters per person daily. Hence produced wastewater is much less than 160 liters permitted in the EIA.</p> <p>The project's <i>Management Regulation of Environment and Health</i> stated that the waste water generated during operation period should be treated in the septic tank by digestion process and reused as fertilizers without any discharge to river as defined in EIA, and complying with the Integrated wastewater Discharge Standard, which has been confirmed by stakeholders' questionnaires.</p> <p>The project owner made a questionnaire for 12 local residents affected by the Guanbaodu project on April 15<sup>th</sup> 2018 to ask their comments on the</p> | <p>Management Regulation of Environment and Health for Guanbaodu Hydropower Station</p> <p>Relevant Questionnaire (as shown in Annex 2)</p> |

|                                                        |                                   |                        |  |                                    |                                                                                                                                   |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              |                                                                                                                                             |
|--------------------------------------------------------|-----------------------------------|------------------------|--|------------------------------------|-----------------------------------------------------------------------------------------------------------------------------------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|---------------------------------------------------------------------------------------------------------------------------------------------|
|                                                        |                                   |                        |  |                                    |                                                                                                                                   | impact of waste water discharged by the project during operation period, All of the 12 stakeholders stated there was no significant impact on local environment.                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             |                                                                                                                                             |
| <b>Solid wastes</b>                                    | Local/regional/global environment | Level of management    |  | Yearly during the operation period | The domestic rubbish treatment during the operation period was monitored by stakeholders' questionnaires and relevant management. | <p>The project's Management Regulation of Environment and Health stated that the solid waste generated during operation period should be transported to the designated wastes deposit plant and then to landfill plant for central disposal as defined in EIA, which has been confirmed by stakeholders' questionnaires.</p> <p>The project owner made a questionnaire for 12 local residents on April 15<sup>th</sup> 2018 to ask their comments on the impact of solid waste discharged by the project during operation period, all of the 12 stakeholders stated that the solid waste has been treated complying with the relevant standard and there was no significant impact on local environment.</p> | <p>Management Regulation of Environment and Health for Guanbaodu Hydropower Station</p> <p>Relevant Questionnaire (as shown in Annex 2)</p> |
| <b>Biodiversity (species and habitat conservation)</b> | Local/regional/global environment | Degree of Biodiversity |  | yearly                             | This indicator was monitored by stakeholder's questionnaires.                                                                     | The project owner made a questionnaire for 12 local residents on April 15 <sup>th</sup> 2018 to ask their comments on the impact by the project on the local ecological environment during the operation period, and all of the 12 stakeholders stated that there was no negative impact on the local ecological environment, 4 of them also thought the local ecological environment were getting better.                                                                                                                                                                                                                                                                                                   | Relevant Questionnaire (as shown in Annex 2)                                                                                                |

|                               |                                                                                     |        |   |         |                                                                                                                                                                                                                                                                                  |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   |                                                                                                             |
|-------------------------------|-------------------------------------------------------------------------------------|--------|---|---------|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------------------------------|
| <b>Employment</b>             | Social sustainability and development<br><br>Economic and technological development | Number | m | monthly | Basing on the monthly payrolls, the numbers of employees and their income were checked regularly.                                                                                                                                                                                | During the construction and operation phases, 16 job opportunities are provided to local people, and the salary for tentative and permanent employees is from 1,807 to 6,670 RMB/month during this monitoring period, higher than the average level of 838 RMB/month in 2018 in Huaihua City ( <a href="http://tjj.huaihua.gov.cn/26568/26911/content_693628.html">http://tjj.huaihua.gov.cn/26568/26911/content_693628.html</a> ).<br><br>Additionally, comprehensive insurance has been provided to every permanent employee                                                                                                                                                                                                                                                                    | Monthly payrolls of Guanbaodu Hydropower Plant                                                              |
| <b>Livelihood of the poor</b> | Economic and technological development                                              | Number | c | yearly  | By checking the annual revenue of the Guanbaodu project, the shareholders' profit was calculated according to the ratio of their share.<br><br>Besides, the income of the local people who has been offered the job opportunities by the project was monitored by their payrolls | The financial balance sheets showed that the annual profit of Guanbaodu Hydropower Station in 2018 were positive, since the local villagers invested in the project, they have received their shares of the profit in return. Besides, the employment opportunities during the construction and operation period increase the income of local people. The average salary for tentative and permanent employees is from 1,807 to 6,670 RMB/month during this monitoring period, higher than the average level of 838 RMB/month in 2018 in Huaihua City ( <a href="http://tjj.huaihua.gov.cn/26568/26911/content_693628.html">http://tjj.huaihua.gov.cn/26568/26911/content_693628.html</a> ).<br><br>Also, the project has built road and bridge and sponsored the new irrigation system for local | Yearly financial report of Guanbaodu Hydropower Plant<br><br>Monthly payrolls of Guanbaodu Hydropower Plant |

village, and these facilities have worked well by now which has provided convenience for locals and improved the living conditions in local region. The following photos are the road and bridge sponsored by the project:



|                                         |                                       |        |   |         |                                                                                                                                        |                                                                                                                                                                                                                                                                                                     |                                                                             |
|-----------------------------------------|---------------------------------------|--------|---|---------|----------------------------------------------------------------------------------------------------------------------------------------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-----------------------------------------------------------------------------|
| <b>Access to energy service</b>         | Social sustainability and development | Number | m | monthly | The power sales receipt received from the local grid company was checked monthly.                                                      | The electricity from the project activity was delivered to Jingzhou County Grid, thus alleviating the power shortage in the county.                                                                                                                                                                 | Monthly Electricity Transaction Notes (ETN) of Guanbaodu Hydropower Plant   |
| <b>Human and institutional capacity</b> | Social sustainability and development | Number | m | monthly | Gender information on the monthly payroll was checked monthly. Training reports regarding operation and maintenance were also checked. | The payrolls of the project showed that the project offered 1 job opportunities for local women.<br><br>The project owner provided training courses of power station's technical and safe knowledge for all staff in 2018, and made relevant examinations to make sure the staff have learned well. | Monthly payrolls of Guanbaodu Hydropower Plant, Training certificate/report |

### Liangjiangkou

| Sustainable Development Indicator | Data type             | Data unit           | Measure d (m), calculate d (c) or estimate d (e) | Recording frequency | Methods and equipments used          | Results                                                                                       | Sources                         |
|-----------------------------------|-----------------------|---------------------|--------------------------------------------------|---------------------|--------------------------------------|-----------------------------------------------------------------------------------------------|---------------------------------|
| <b>Water quality and</b>          | Local/regional/global | Level of management | e                                                | Yearly during the   | The waste water during the operation | According to Standard of Quota for Water Use (DB43/T 388-2008), maximum daily demand of water | <i>Management Regulation of</i> |

|                     |                                   |                     |   |                                    |                                                                                                                                                                                                            |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          |                                                                                                                                  |
|---------------------|-----------------------------------|---------------------|---|------------------------------------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|----------------------------------------------------------------------------------------------------------------------------------|
| <b>quantity</b>     | environment                       | nt                  |   | operation period                   | <p>period was monitored by stakeholders' questionnaires and relevant management.</p> <p>The discharge amount of sanitary wastewater was monitored by the payroll with information of employee numbers.</p> | <p>use in rural area in Hunan Province is considered 80 liters per person daily. Hence produced wastewater is much less than 160 liters permitted in the EIA.</p> <p>The project's <i>Management Regulation of Environment and Health</i> stated that the waste water generated during operation period should be treated in the septic tank by digestion process and reused as fertilizers without any discharge to river as defined in EIA, which has been confirmed by stakeholders' questionnaires.</p> <p>The project owner made a questionnaire for 10 local residents affected by the Liangjiangkou project on April 15<sup>th</sup> 2018 to ask their comments on the impact of waste water discharged by the project during operation period, All of the 10 stakeholders stated that no waste water was discharged by the project and there was no significant impact on local environment.</p> | <p><i>Environment and Health for Liangjiangkou Hydropower Station</i></p> <p>Relevant Questionnaire (as shown in Annex 2)</p>    |
| <b>Solid wastes</b> | Local/regional/global environment | Level of management | m | Yearly during the operation period | <p>The domestic rubbish treatment during the operation period was monitored by stakeholders' questionnaires and relevant</p>                                                                               | <p>The project's <i>Management Regulation of Environment and Health</i> stated that the solid waste generated during operation period should be transported to the designated wastes deposit plant and then to landfill plant for central disposal as defined in EIA, which has been confirmed by stakeholders' questionnaires.</p>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      | <p><i>Management Regulation of Environment and Health for Liangjiangkou Hydropower Station</i></p> <p>Relevant Questionnaire</p> |

|                                                        |                                                                                     |                        |   |         |                                                                                                   |                                                                                                                                                                                                                                                                                                                                                                                                                  |                                                                              |
|--------------------------------------------------------|-------------------------------------------------------------------------------------|------------------------|---|---------|---------------------------------------------------------------------------------------------------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|------------------------------------------------------------------------------|
|                                                        |                                                                                     |                        |   |         | management.                                                                                       | The project owner made a questionnaire for 10 local residents on April 15 <sup>th</sup> 2018 to ask their comments on the impact of solid waste discharged by the project during operation period, all of the 10 stakeholders stated that no solid waste was discharged by the project and there was no significant impact on local environment.                                                                 | (as shown in Annex 2)                                                        |
| <b>Biodiversity (species and habitat conservation)</b> | Local/regional/global environment                                                   | Degree of Biodiversity | e | yearly  | This indicator was monitored by stakeholder's questionnaires.                                     | The project owner made a questionnaire for 10 local residents on April 15 <sup>th</sup> 2018 to ask their comments on the impact by the project on the local ecological environment during the operation period, and all of the 10 stakeholders stated that there were no negative impact on local ecological environment.                                                                                       | Relevant Questionnaire (as shown in Annex 2)                                 |
| <b>Employment</b>                                      | Social sustainability and development<br><br>Economic and technological development | Number                 | m | monthly | Basing on the monthly payrolls, the numbers of employees and their income were checked regularly. | During the construction and operation phases, 7 job opportunities are provided to local people, the salary for permanent employees is from 1,000 to 3,333 RMB/month during this monitoring period, higher than the average level of 838 RMB/month in 2018 in Huaihua City ( <a href="http://tjj.huaihua.gov.cn/26568/26911/content_693628.html">http://tjj.huaihua.gov.cn/26568/26911/content_693628.html</a> ). | Monthly payrolls of Liangjiangkou Hydropower Plant<br><br>Proof of insurance |
| <b>Livelihood of the poor</b>                          | Economic and technological development                                              | Number                 | c | yearly  | By checking the monthly payrolls of the project, the numbers of employees and their income were   | The employment opportunities during the operation period increase the income of local people. The salary for permanent employees is from 1,000 to 3,333 RMB/month during this monitoring period, higher than the average level of 838 RMB/month in 2018 in Huaihua City                                                                                                                                          | Monthly payrolls of Liangjiangkou Hydropower Plant                           |

|  |  |  |  |  |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         |  |
|--|--|--|--|--|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|--|
|  |  |  |  |  | <p>checked regularly.</p> <p>(<a href="http://tjj.huaihua.gov.cn/26568/26911/content_693628.html">http://tjj.huaihua.gov.cn/26568/26911/content_693628.html</a>).</p> <p>Also, the project has built road and bridge and sponsored the new irrigation system for local village, and these facilities have worked well by now which has provided convenience for locals and improved the living conditions in local region. The following photos are the road, bridge sponsored by the project:</p>  |  |
|--|--|--|--|--|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|--|

|                                         |                                       |        |   |         |                                                                                                                                        |                                                                                                                                                                                                                                               |                                                                                 |
|-----------------------------------------|---------------------------------------|--------|---|---------|----------------------------------------------------------------------------------------------------------------------------------------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|---------------------------------------------------------------------------------|
|                                         |                                       |        |   |         |                                                                                                                                        |                                                                                                                                                            |                                                                                 |
| <b>Access to energy service</b>         | Social sustainability and development | Number | m | monthly | The power sales receipt received from the local grid company was checked monthly.                                                      | The electricity from the project activity was delivered to Tongdao County Grid, thus alleviating the power shortage in the county.                                                                                                            | Monthly Electricity Transaction Notes (ETN) of Liangjiangkou Hydropower Plant   |
| <b>Human and institutional capacity</b> | Social sustainability and development | Number | m | monthly | Gender information on the monthly payroll was checked monthly. Training reports regarding operation and maintenance were also checked. | The payrolls of the project showed that the project offered 2 job opportunities for local women.<br><br>The project owner provided training courses of power station's technical, management and safety knowledge for all staff periodically. | Monthly payrolls of Liangjiangkou Hydropower Plant, Training certificate/report |

## ANNEX 1 DECLARATION ON RECS



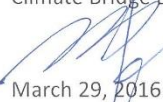
### DECLARATION

As a Project Participant of Hunan Guanbaodu-Liangjiangkou Small-scale Hydropower Bundle Project (GS835), Climate Bridge Ltd. warrants that no RECs are being issued for the project under consideration for Gold Standard VERs.

Climate Bridge Ltd. also warrants it has, and continues to have, (or if acting in the capacity as an Agent, the person or entity it represents has and continues to have) full legal and beneficial title to any Units listed by User in accordance with the Gold Standard Registry Terms of Use and the underlying Environmental Benefits corresponding to such Units and it has not sold, transferred, assigned, licensed, disposed of, granted or otherwise created any interest or encumbrance in or agreed to sell, assign, license, dispose of, grant or otherwise create any interest or encumbrance in the Units or the underlying Environmental Benefits corresponding to such Units other than as contemplated under the Gold Standard Registry Terms of Use.

Signature:

On behalf of:  
Climate Bridge Ltd.

  
March 29, 2016

## ANNEX 2 SD QUESTIONNAIRES

### 贯宝渡电站项目可持续发展影响问卷调查

时间：2018年4月15日

|    | 姓名  | 性别 | 职业 | 问题 1:<br>您觉得电站运行以来废水的排放对当地水质是否有影响?(是/否, 请简要说明理由) | 问题 2:<br>您觉得电站运行以来固废的排放对当地环境是否有影响?(是/否, 请简要说明理由) | 问题 3:<br>您觉得电站运行以来对当地生态环境(如当地的鱼类等动植物)是否有影响?(是/否, 请简要说明理由) |
|----|-----|----|----|--------------------------------------------------|--------------------------------------------------|-----------------------------------------------------------|
| 1  | 苏进店 | 男  | 农民 | 否 无废水排放, 正常                                      | 否 无固废的排放, 正常                                     | 否 动植物生长正常                                                 |
| 2  | 苏仁义 | 男  | 农民 | 否 无废水, 正常                                        | 否 对环境无影响                                         | 否 无影响                                                     |
| 3  | 郑连喜 | 男  | 农民 | 否 正常, 无影响                                        | 否 对环境没有影响                                        | 否 生长成果很好                                                  |
| 4  | 唐小连 | 女  | 农民 | 否 无废水排放                                          | 否 没有排放, 无影响                                      | 否 没有影响                                                    |
| 5  | 李新平 | 男  | 农民 | 否 对水质无影响                                         | 否 没有污染                                           | 否 没有影响, 鱼类很多                                              |
| 6  | 温郁连 | 女  | 农民 | 否 没有废水排放, 正常                                     | 否 无固废的排放, 正常                                     | 否 生态环境很好                                                  |
| 7  | 邓友友 | 男  | 农民 | 否 对水质没有影响                                        | 否 对环境无影响                                         | 否 没有影响                                                    |
| 8  | 杨锦华 | 男  | 农民 | 否 无废水排放                                          | 否 对环境没有影响                                        | 否 生态正常                                                    |
| 9  | 苏仁斌 | 男  | 农民 | 否 水质正常                                           | 否 没有排放, 正常                                       | 否 鱼虾多, 水质清                                                |
| 10 | 郎春连 | 女  | 农民 | 否 无影响, 正常                                        | 否 无固废的排放                                         | 否 没有影响                                                    |
| 11 | 苏茂荣 | 男  | 农民 | 否 没有产生废水排放                                       | 否 水质正常                                           | 否 生态正常                                                    |
| 12 | 苏茂桥 | 男  | 农民 | 否 对水质无影响                                         | 否 无固废的排放, 正常                                     | 否 对动植物无影响                                                 |

1

### 两江口电站项目可持续发展影响问卷调查

时间：2018年4月15日

|    | 姓名  | 性别 | 职业 | 问题 1:<br>您觉得电站运行以来废水的排放对当地水质是否有不利影响?(是/否, 请简要说明理由) | 问题 2:<br>您觉得电站运行以来固废的排放对当地环境是否有不利影响?(是/否, 请简要说明理由) | 问题 3:<br>您觉得电站运行以来对当地生态环境(如当地的鱼类等动植物)是否有不利影响?(是/否, 请简要说明理由) |
|----|-----|----|----|----------------------------------------------------|----------------------------------------------------|-------------------------------------------------------------|
| 1  | 吴友东 | 男  | 干部 | 无影响                                                | 无危害                                                | 无影响                                                         |
| 2  | 卢开富 | 男  | 教师 | 无影响                                                | 无危害                                                | 无影响                                                         |
| 3  | 石化春 | 男  | 农民 | 无影响                                                | 无危害                                                | 无影响                                                         |
| 4  | 杨智敏 | 男  | 企业 | 无影响                                                | 无危害                                                | 无影响                                                         |
| 5  | 周爱亮 | 男  | 职工 | 无影响                                                | 无危害                                                | 无影响                                                         |
| 6  | 龙开忠 | 男  | 职工 | 无影响                                                | 无危害                                                | 无影响                                                         |
| 7  | 龙开和 | 男  | 组长 | 无影响                                                | 无危害                                                | 无影响                                                         |
| 8  | 王树松 | 男  | 职工 | 无影响                                                | 无危害                                                | 无影响                                                         |
| 9  | 唐晓群 | 男  | 干部 | 无影响                                                | 无危害                                                | 无影响                                                         |
| 10 | 余学小 | 女  | 村民 | 无影响                                                | 无危害                                                | 无影响                                                         |
| 11 |     |    |    |                                                    |                                                    |                                                             |
| 12 |     |    |    |                                                    |                                                    |                                                             |