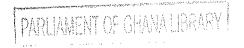
# IN THE SECOND SESSION OF THE SEVENTH PARLIAMENT OF THE FOURTH REPUBLIC OF GHANA

# REPORT OF THE JOINT COMMITTEE ON ROADS AND TRANSPORT AND MINES AND ENERGY

### ON THE

CONTRACT AGREEMENT BETWEEN THE GOVERNMENT OF THE REPUBLIC OF GHANA (REPRESENTED BY THE MINISTRY OF ROADS AND HIGHWAYS THROUGH GHANA HIGHWAYS AUTHORITY) AND FLECK ELEKTROINSTALLATIONEN GMBH OF AUSTRIA IN RESPECT OF THE ENHANCEMENT OF ROAD SAFETY (PHASE II) – TURNKEY IMPLEMENTATION OF PHOTOVOLTAIC – BASED STREET LIGHTING PROGRAMME IN SELECTED COMMUNITIES



16th November, 2018



REPORT OF THE JOINT COMMITTEES ON ROADS AND TRANSPORT AND MINES AND ENERGY ON THE CONTRACT AGREEMENT BETWEEN THE GOVERNMENT OF THE REPUBLIC OF GHANA (REPRESENTED BY THE MINISTRY OF ROADS AND HIGHWAY AUTHORITY) AND GHANA HIGHWAYS THROUGH IN OF THE RESPECT **AUSTRIA** ELECTROINSTALLATIONEN GMBH OF ENHANCEMENT OF ROAD SAFETY (PHASE II) - TURNKEY IMPLEMENTATION OF PHOTOVOLTAIC - BASED STREET LIGHTING PROGRAMME IN SELECTED **COMMUNITIES IN GHANA** 

#### 1.0 INTRODUCTION

On Thursday, 21st December, 2017 the Hon. Deputy Minister for Roads and Highways, Mr. Kwabena Owusu-Aduomi on behalf of the Minister of Roads and Highways, Hon. Kwasi Amoako-Atta laid before the House, a Commercial Agreement (Contract Agreement) between the Ministry of Roads and Highways (re-presented by the Ghana Highways Authority) and Fleck Elektroinstallationen GMBH, Austria, for the implementation of Photovoltaic based street lighting programme at hazardous (black spot) locations in selected Communities in the country.

The Rt. Hon. Speaker subsequently referred the contract agreement to the Joint Committee on Roads and Transport and Mines and Energy in accordance with Article 181 (5) of the 1992 Constitution and Order 188 and 189 of the Standing Orders of Parliament of Ghana.

Mr. Speaker, your Committees met with the two Deputy Ministers of Roads and Highways, Hon. Kwabena Owusu-Aduomi and Hon. Anthony N-Yoh Puowele Karbo, the technical team from the sector Ministry and the Ghana Highways Authority.

The Joint Committee considered the referral and report as follows:

### 2.0 BACKGROUND

Road traffic crashes is increasingly becoming a developmental and public health issue due to the huge loss road traffic crashes entail and its resultant huge loss to national human resources associated with crashes

and its adverse impact on society. Traffic crashes have become a great concern to government and over the years Government through the National Road Safety Commission (NRSC) has pursued the implementation of a consistent and comprehensive National Road Safety Action Plan and Strategies to address the unacceptable high level of road traffic crashes in the country.

The NRSC, with key collaborators and stakeholders like the Driver and Vehicle Licensing Authority (DVLA), the Motor Traffic and Transport Department of the Police Service, the Ministry of Transport and the Ministry of Roads and Highways have been grappling with the issue of road safety and doing its best within the confines of its mandate to address road safety concerns.

It is inconceivable that while some road safety strategies have made significant impact, lot still remain undone. The cost of road crashes in Ghana is estimated at 1.67% of the Gross Domestic Product.

Generally, there are confronting challenges driving at night and these challenges are experienced on our roadways. It is estimated that about 30% of road traffic accidents occur during night time, results in more than 47% of all fatalities. It has also been statistically proven that 50% of all the night crashes occur between the hours 18:00 GMT and 21:00 GMT.

Our streets today do not have the necessary dotting streetlights, likewise most of our national roads that link our regional capitals to road sections in the urban areas. This situation has invariably contributed to a number of pedestrian fatalities.

By funding projects that involve road and safety improvement by the installation of solar lighting and traffic signs at Black spots, we target the road locations where crashes occur, reducing the risk of crashes at dangerous locations.

The hazardous (Black) spot program is part of the commitment of the Ghana Highway Authority to reduce crashes on our roads. The Roads and

Safety Improvement Project initiated in the contract agreement, would complement road improvements and safe engineering practices, safety audits in the design, construction and maintenance of roads that are undertaken annually.

The first phase of this programme was implemented between

2014 - 2016 and the Hazardous (Black) spot program Phase II is part of the commitment of the Ghana Highway Authority to reduce crashes on our roads.

#### 3.0 PROJECT OBJECTIVE

The Photovoltaic based street lighting program or the black spot improvement program is directed at improving the physical condition and the management of hazardous locations with a history of traffic crashes that cause death or serious injury, thereby undertaking safety improvement measures at such locations by:

- Installation of street lights in Communities along trunk roads
- Installation of street lights at major junctions
- Installation of street lights at bridge approaches

# 4.0 PROJECT SCOPE

The locations earmarked for installation of the street lights under Phase II are as listed in Appendix I

MARKET SERVICE STORY

## 5.0 **DURATION OF PROJECT**

The project would take a period of twenty-four (24) months to complete from the commencement date of first quarter of 2019.

#### 6.0 JUSTIFICATION FOR PROJECT

The implementation of the project in the selected communities has been designed to address national road safety issues of black spots. The project is aimed at implementing practical and cost-effective measures which would improve visibility and vehicle/pedestrians contact in the night on sections of roads where visibility is poor. The programme will not only limit road traffic accidents but accelerate that attainment of government's strategies objectives for road safety in the country.

#### 7.0 **OBSERVATIONS**

#### 7.1 Financial Impact

The Committee noted that the loan component being sought for the commercial agreement for the enhancement of the Road Safety Turnkey Implementation of the Photovoltaic - Based (Solar) street lighting programme (Phase II) which amounts to Seven Million, Five Hundred Thousand Euros (€7,500,000.00) has already been approved by the House. The amount is the total cost of the project and the terms and conditions of the concessional loan is well within the threshold of government commercial borrowing.

The highlights of the terms and loan conditions is as listed in Appendix 2.

### 7.2 Inter-Ministerial /Agency Consultations

The Committee was informed that stakeholders' consultations involving District Assemblies, opinion leaders within the scope area of the project would be continuously updated to ensure smooth implementation of the project. This level of consultation, the Committee noted would give the communities the sense of ownership of the project.

#### 7.3 Taxes and Duties Exemption

The Committee noted that the terms and conditions of the Loan Agreement provided under the contract provides for taxes and duties waiver on goods and services to be procured with the loan facility. The Committee was informed that the exempt taxes and duties on the project procurement and services would be assessed by the Ghana Revenue Authority and subjected to Parliamentary approval. It is the Committee wish that due diligence would be applied to the exemptions by the Ghana Revenue Authority.

#### 7.4 Project Implementation Arrangement

The Committee observed that the project would be managed by the Ministry of Roads and Highways through the environmental and road safety division of the Ghana Highway Authority, who are the implementing agency.

#### 7.5 Legislation and Regulatory Plan

The Committee was told that the execution of the project would not require any enactment or the amendment of any existing legislation, forestalling any technical delay.

The Committee noted that the project is cost-effective and is an energy efficient street lighting system based on renewable energy.

The project will also promote and maintain safety for highway road users with special consideration for vulnerable user groups. The project benefits will contribute to enhance road safety within the project scope area and in line with Government's agenda to ensure road safety and reduce the road traffic crashes and fatalities.

#### 7.6 Maintenance Culture

The Committee noted that most of the solar street lighting on our roads suffer from poor maintenance which results in most of the bulbs faulty and the batteries not functioning properly.

This poor maintenance culture of the solar street light is due to difficulty in apportioning which organization is responsible for maintenance.

The Committee was informed that the implementing agency, the Ghana Highway Authority is not responsible for the maintenance of the street lights, rather it falls on the communities in the District Assemblies.

# 7.7 Design of the Street Lighting system (Phase II) and Street Lighting Policy Dialogue

The Committee observed that about 40% of street lights from phase I of the projects were not working across the country. The Committee was informed that, the situation was as a result of inadequate maintenance and water table level rising to cover the chamber where the battery and connectors are kept as well as activities of rodents who feed on the insulated cables.

The Committee was informed that the design for street lighting system for the Phase II of the program has been improved to remedy these challenges encountered under the Phase I. The current design has the battery system incorporated in the Solar Electric Unit on top of the light pole while the controller and cables moved to elevated positions on the light pole rather than being place in a concrete compartment or chamber underneath the light pole.

The Committee recommends a policy dialogue between the Joint Committees of Roads and Transport, Mines and Energy and Local Government and Rural Development with their respective Ministries and relevant agencies to find a lasting solution to the maintenance of street lights in the country.

#### 7.8 Stakeholders Meeting

The Committee noted that given the status quo, the street lighting project will prove unsustainable in the long term if the required regulation, implementation, maintenance and management framework are not put in place, the Committee therefore wish to appeal to the Speaker to commit the Committees of Roads and Transport, the Mines and Energy and Local Government to a stakeholders consultation to find a lasting solution as to which agency is in charge of maintenance, repair and the management of street lights in the country.

#### 8.0 CONCLUSION

The Committee having examined the Contract Agreement, and considering that street lighting system is key to road safety, recommends to the House to approve its report on the Commercial Agreement between the Ministry of Roads and Highways (represented by the Ghana Highway Authority) and Fleck Elektroinstallationen GmbH, Austria for the implementation of the Photovoltaic based Street Lighting Programme at hazardous (black spot) locations in selected communities within the country.

PARLIAMENT OF GHANA LIBRAR'

Respectfully submitted

HON. SAMUEL A EH-PAYE

CHAIRMAN, COMMITTEE ON ROADS

& TRANSPORT

MR. ASANTE AMOAKO-ATTA
CLERK, COMMITTEE ON ROADS

& TRANSPORT

HON. EMMANUEL AKWASI GYAMFI

CHAIRMAN, COMMITTEE ON MINES

& ENERGY

MRS. JOANA ABENA SAKYI-ADJEI CLERK, COMMITTEE ON MINES

& ENERGY

November, 2018



| <b>No</b> | Location Name              | КМ      | Section   | Code        | Length of<br>Strech/M | No. of Poles |                   |     |  |  |
|-----------|----------------------------|---------|---|-------------|-----------------------|--------------|-------------------|-----|--|--|
|           |                            |         |   |             |                       | Survey       | Light<br>Planning | vin |  |  |
| 2_01      | Buduburam                  | 5,7     | Budumburam-Winneba Rd                                       | BWR         | 1810                  | 27           | 27                | 0   |  |  |
|           |                            |         | Budumburam-Acp Rd   | BCR         | 50                    | 15           | 2                 | 0   |  |  |
|           |                            |         | Budumburam-Ofenkor Rd                                       | BOR         | 120                   | 4            | 4                 | 0   |  |  |
|           |                            |         | KAAF University In Winneba                                  | KUW         | 120                   | 4            | 4                 | 0   |  |  |
|           |                            |         | Rd KAAF Univ In-University Rd                               | KUU         | 60                    | 2            | 2                 | 0   |  |  |
| 2_02      | Fete Kakraba               | 8,6     | Fete Kakraba-Winneba Rd                                     | FKW         | 240                   | 9            | 8                 | 0   |  |  |
|           | <u> </u>                   |         |   |             |                       |              | <u> </u>          |     |  |  |
| 02_03     | Awutu Beraku               | 10,1    | Awutu -Beraku-Winneba Rd                                    | ABW         | 480                   | 16           | 16                | G.  |  |  |
|           |                            |         | Awutu-Beach Rd<br>Awutu-Kanyaaku Rd                         | ABB<br>ABK  | 120                   | 4            | 4                 | 0   |  |  |
| 02_04     | Akotsi Junction            | 12,8    | Akotsi Junction-Winneba Rd                                  | ΔJW         | 240                   | 18           | 18                | 0   |  |  |
|           |                            |         | Akotsi Junction-Senya Breku Rd                              | AJ8         | 120                   | 4            | 4                 | 0   |  |  |
|           |                            |         | Akotsi Junction-Akotsi Rd                                   | AJA         | 120                   | 4            | 4                 | 0   |  |  |
| 02 05     | Gomoa Buduatta Junction    | 150     | Buduatta In -Winneba Rd                                     | BJW         | 480                   | 16           | 16                | 0   |  |  |
|           | Control Coddatta york (ion | ,,,     | Buduatta Junction Buduatta Rd                               | B18         | 60                    | 2            | 2                 | o   |  |  |
|           |                            |         |   |             | · ·                   | ]            | Ī                 |     |  |  |
| 02_06     | Potsin In                  | 20,9    | Potsin-Winneba Rd<br>Potsin In -Potsin Rd                   | PW'R        | 240                   | 6            | 6                 | 0   |  |  |
| 02_07     | Adawukwa/Okyereko Jii      | 26      | Okereko-Winneba Rd  | PPR<br>OJW  | 1020                  | 17.4         | 4                 | 0   |  |  |
|           | THE THE PART OF YELCKU JI  | = =     | Okereko-Winneba Ro<br>Okereko JnOkereko Rd                  | 010         | 1020                  | 34           | 34                | 0   |  |  |
| 2 08      |                            | 30,8    | Winneba Rd'About-Swedru Rd                                  | WES         | 120                   | 4            |                   |     |  |  |
| * "^"     | NOS NO NORMA ARROST        | ,,,,,   | Winneba Rd'About-Swedru Rd                                  | WRA         | 120                   | 4            | 4                 | 0   |  |  |
|           |                            |         | Winneba Rd'About-Kasoa Rd                                   | WRW         | 120                   | 4            | 4                 | o   |  |  |
| 02_09     | Mankoadze College In       | 38,4    | Mankoadze In-Cape Coast Rd                                  | MJC         | 240                   | 6            | 8                 | 0   |  |  |
|           | ,                          |         | Cape Coan ite   |             | 12-0                  | ľ            | (*                |     |  |  |
| 72 10     | Ankamu/Apam In             | 44,9    | Apam In-Cape Coast Rd                                       | AJC         | 480                   | !6           | 16                | С   |  |  |
|           |                            | }       | Apam Jn-Apam Rd   | AAR         | 120                   | 4            | 4                 | 0   |  |  |
|           | V                          | 1       | Apam In -Swedru Rd  | ASR         | 60                    | 2            | 2                 | 0   |  |  |
| 03_11     | Kysren/Nkwanta Jn.         | 53,7    | Kyiren Nkwanta-Cape Coast Rd<br>Kyiren Nkwanta In-Kyiren Rd | KNC         | 240<br>120            | 8            | 8                 | 0   |  |  |
| 02_12     | Oteam/Ajumako Jn           | 60,6    | Otuam In-Otuam Rd   | OOR         | 120                   | 4            | 4                 | 0   |  |  |
| -         |                            | 1       | Ajumako In-Otuarn In. Rd                                    | OIC         | 1300                  | 10           | 10                | 0   |  |  |
|           |                            |         | Ajumako In-Ajumako RS                                       | AJR         | 120                   | 4            | 4                 | Ç   |  |  |
| 02_13     | Enyisam Jo                 | 67,8    | Enyisam-Cape Coast Rd                                       | ECC         | 300                   | 10           | 10                | o   |  |  |
|           |                            |         | Enyisam In -Narkwa Rd                                       | EJN         | 60                    | 2            | 2                 | 0   |  |  |
|           |                            |         | Enyisam In -EnyanOnyadze Rd                                 | EI0         | 60                    | 2            | 2                 | 6   |  |  |
| 02_14     | Mankesim Round About       | 77.1    | Mankesim-Ajumako Rd   | MAA         | 120                   | 4            | 4                 |     |  |  |
| -         |                            |         | Mankesim-Cape coast Rd                                      | MAC         | 120                   | 4            | 4                 | o   |  |  |
| 02_15     | Mi'mans In                 | 82.8    | Mfman Girls-Salipond Ceramics                               | MFS         | 600                   | 20           | 20                | 0   |  |  |
| -         |                            | 1       | Saltpond In-Saltpond Rd                                     | SAS         | 60                    | 2            | 2                 | o   |  |  |
|           |                            | 1       |   |             |                       |              |                   |     |  |  |
| 02_16     | 2nd Salpond In             | 85,8    | Saltpond In-Saltpond Rd                                     | SIS         | 60                    | 2            | 2                 | 0   |  |  |
|           |                            | 1       | Saltpond-Cape Coast Rd                                      | SCC         | 240                   | 8            | 8                 | 0   |  |  |
| 02_17     | Anomabu Hospital           | 94,3    | Anomabu Hospital -Cape Coast                                | AHC         | 240                   | 8            | £                 | 0   |  |  |
| 02_18     | Yamoransa In               | 103,5   | Yamoransa-Fosu Rd   | YAF         | 150                   | 5            | 5                 | 0   |  |  |
| 92_19     | Samme Siv. High School     | 104,4   | Yamorania In -Cape Coast Rd<br>Sammo Sirr High School       | SSH         | 240                   | 16<br>8      | 16<br>8           | 0   |  |  |
|           | Moree Toll Boots           |         | Motee Toll Booth  |             |                       |              |                   |     |  |  |
|           |                            | 105,9   |   | МТВ         | 690                   | 20           | 20                | 0   |  |  |
| 02_21     | 3rd Ridge In               | 1111.4  | 3rd Ridge Junction-Cape Coast<br>Rd Slip I                  | PJC<br>6 IS | 150                   | 5            | 5                 | 0   |  |  |
|           |                            | 1       | Shp 2   | PJL         | 60<br>50              | 2            | 2                 | 0   |  |  |
| 02_22     | Pedu In.                   | 113     | Pedu Junction-Cape Coast Rd                                 | PJC         | 180                   | 12           | 12                | To  |  |  |
| 02_23     | Elmina Beach Reson In      | 122,1   | Elmina Beach Resort   | EBB         | 120                   | 4            | 4                 | 0   |  |  |
|           |                            |         | Access  | PJA         | 60                    | 2            | 2                 | lo_ |  |  |
| 02_24     | Archbishop Poners In       | 122,7   | Eimina -Archbishop Porter                                   | EAB         | 50                    | 2            | 2                 | 0   |  |  |
|           | 1                          | 1       | Elmina Town<br>Elmina-Cape Caost                            | ELT         | 120<br> 300           | 10           | 10                | 0   |  |  |
| 03_25     | <br> Elmina In             | 123,4   | Elmina Jn-Takoradi Rd                                       | EJT         | 150                   | 5            | 3                 | - 0 |  |  |
|           |                            |         |   | ,,,,        | 173                   |              |                   |     |  |  |
| 02_26     | Essaama Jii                | 128.8   | Essaama In-Takoradi Rd                                      | EST         | 350                   | 12           | 12                | О   |  |  |
|           |                            |         | Assaama In-Elmina Rd<br>Essaama In-Elmina Rd                | ESE         | 50                    | 2            | 2                 | lo  |  |  |
|           |                            |         | Cosaaina m-Cimina KC  | ESR         | 56                    | 2            | 2                 | jo  |  |  |
| 92_27     | Mempasem Axle Land St      | a 129,6 | Mempasem Axle Land Station                                  | MAL         | 180                   | 5            | 5                 | 0   |  |  |
|           | t                          | 1       | <u> </u>  | 1           | . 1                   |              |                   |     |  |  |

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| 22_28         | Enyensudu Township | 134.5 | Enyensudu Township        | ENT | 180  | 6    | 6   | 0   |
|---------------|--------------------|-------|---------------------------|-----|------|------|-----|-----|
| 2 29          | Komenda Junction   | 141,2 | Komenda In- Takoradi Rd   | кот | 300  | 10   | 10  | ō   |
|               |                    |       | Komenda In-Komenda Rd     | KOK | 60   | 2    | 2   | 0   |
|               |                    | i     | Komenda In-Kissi Rd       | KOL | 60   | 2    | 2   | 0   |
| 2 30          | Aburansa           | 145,5 | Aburansa An-Taabradi Rd   | ART | 120  | 4    | 4   | 0   |
|               |                    |       | Aburansa An-Abobiano Rd   | ABA | 60   | 2    | 2   | 0   |
| 02_31         | Domenase           | 146,7 | Domenase-Takoradi Rd      | DOT | 300  | 10   | 10  | jo  |
| 02_32         | Komerida           | 149,4 | Komenda Sefwi-Takoradı Rd | KST | 120  | 4    | 4   | 0   |
| 02_33         | Asemase            | 151,6 | Asemase -Takoradi Rd      | AST | 240  | 8    | 8   | 0   |
| 02_34         | Obinyin            | 152,2 | Obinyin-Takoradi Rd       | ОВТ | 180  | 6    | 6   | 0   |
| 02_35         | Anteasembua        | 152,8 | Anteasembua-Takoradi Rd   | ANT | 120  | a    | 4   | o   |
| 02_36         | Saduktom           | 153,9 | Bedukrom-Takeradi Rd      | BAT | 240  | 8    | e   | 0   |
| 02_37         | Beposo             | 155,3 | Beposo Nkran-Takotadi Rd  | BEN | 240  | 8    | 8   | 0   |
| 02_ <b>3B</b> | Bepase Toll Booth  | 156,1 | Beposo Toll Booth         | BET | 900  | 30   | 30  | 0   |
| 02_39         | Beposo Dunkwa      | 157,6 | Beposo Dunkwa-Takoradi Rd | BED | 240  | 8    | 8   | ō   |
| 02 40         | Daboase            | 161,7 | Daboase-Takoradi          | DAT | 240  | 18   | 8   | 0   |
| _             |                    |       | Daboase In-Daboase        | DAD | 60   | 2    | 2   | o   |
| 02_41         | Old Daboase        | 162,6 | Old Daboase In-Takoradi   | OLD | 240  | 8    | 8   | 0   |
| 02.42         | Annie Aboso        | 154,1 | Annto Aboso-Takoradi      | ANN | 180  | 6    | 6   | 9   |
| 02_43         | Ohiamaadwen        | 165,2 | Ohramaadwen-Takoradi      | OHI | 240  | ie i | 6   | 6   |
| C2_44         | Kumasi Assamang    | 170,1 | Kumasi Assamang           | KUA | 240  | 8    | 8   | 0   |
| 02_45         | Shama Junction     | 171   | Shama In-Shama            | SHS | 60   | Б    | 8   | 0   |
|               |                    |       | Shama Jn-Takoradi         | SHT | 240  | Z    | 12  | 0   |
| 02_46         | lchasban           | 174,} | Ichaahan Town             | INT | 390  | 16   | 10  | 0   |
|               |                    |       | Ichaaban-Aboadze          | INA | 120  | 4    | 4   | ļo_ |
|               | 1                  | -     | ì                         |     | 17.1 | 584  | 584 | 10  |



| _[   | ocatio              | n Name            | КМ           | Se    | ction    |  | Ced         |                 |            | ch/M   | No. n<br>Pole:<br>Surv | cy     | l.igh |       | Diff | -   |   |
|------|---------------------|-------------------|--------------|-------|----------|--|-------------|-----------------|------------|--------|------------------------|--------|-------|-------|------|-----|---|
| -    |                     |                   |              |       |          |  | 1           |                 | 180        |        | 6                      |        | Plan  | ning. | 10   | -   |   |
| _    |                     |                   | 1)           |       | dun      | an In-Offinso                                | AO          | ` !             | 150<br>50  |        | 2                      |        | 2     |       | 1    |     |   |
| 11   | Aduma               | n Junction        | 1''          | د ا   | . tom    | an In-AdumanRd                               | AA          |                 | 120        | ~~~~~~ | 4                      |        | 4     |       | jo   | Ì   |   |
|      |                     |                   | 15.2         |       | henk     | cro-Terrem Rd                                | AH          |                 | 180        |        | 6                      |        | 6     |       | 1-   |     |   |
| 02   | Ahenk               | 10n               |              | 1.    | 4 heni   | rro-Techiman Ro                              |             |                 | 240        |        | 8                      |        | 8     |       | 0    | 1   |   |
|      |                     | ,                 | 23.6         |       | OLLO     | offinso, Techiman Rd                         | Or          |                 | 60         |        | 12                     |        | ]2    |       |      |     |   |
| 03   | OR O                | il iuzo           | -            | - 1.  | Old C    | offinso-PKD Guest House                      | OI          | <u></u> -<br>∟B | 12         |        | 8                      |        | 4     |       | 4    | - 1 |   |
| 04   | 019 0               | ifinso Toll Booth | 24.          |       | Old (    | Offinso-Toll Booth                           |             |                 | 1_         |        | 8                      |        | 18    |       | 0    |     |   |
|      | 1                   |                   | 30           |       | Name     | ong Tawn                                     | 3.          | ΑT              | 2.         |        | 12                     |        | 12    |       | 1    |     |   |
| 05   | Name                | gaç               | 130          | ,4    | Nam      | iong In-Kokon                                |             | JK_             | 6          |        | - 8                    | ****   | 8     |       | 0    |     | Ì |
|      |                     |                   | 133          |       |          | am Town                                      | S           | ΚT              | 12         | 40     | 10                     |        | - 1   |       | - 1  |     | 1 |
| 06   | Seka                | Tr.               | ددا          | در    | )        |  |             |                 | 4          |        | 8                      |        | 18    |       | 0    |     | ١ |
|      |                     |                   |              |       | Can      | OD   |             | AM              | 2          | 40     |                        |        | -   " |       | Ì    |     | _ |
| 0    | Abo                 | four Camp         | 14           | ,     |          |  |             |                 | 4          |        | 6                      |        | 6     |       | C    |     | 1 |
|      |                     |                   | - 17         | 0'4   | Ah       | ofour Town                                   | - }         | ABT             | - [1       | 80     | 0                      |        | 1     |       | 1    |     | _ |
| 08   | Abo                 | four Town         | - P          | 0 4   | 100      |  |             |                 | -+         |        |                        |        |       | <br>i | 0    |     |   |
| -    |                     |                   |              | 9,6   | 1N       | wankwaa                                      | - 1         | NKA             | ٠ }        | 120    | ١,                     |        | - [   |       |      |     |   |
| 3_0  | Nkv                 | vankwaa           | P            | 7,0   | 11.7     |  |             |                 |            |        |                        |        |       | 4     | (    | )   |   |
|      |                     |                   |              | 8.9   | 14.      | oso Town                                     | -           | ΑĽΊ             |            | 120    | ľ                      |        |       |       | 1    |     | _ |
| 3_1  | 0 Asc               | 1020              | 10           | 75,2  | 12.      | ouso-Dema Rd                                 |             | AUI             |            | 50     |                        | £<br>B |       | 8     |      | )   | _ |
|      |                     |                   |              | 93'9  | A/       | rancho Curve                                 | 1           | AFC             |            | 240    |                        | 14     | ł     | 14    | ļ    |     | _ |
| 13_1 | 1 Afr               | ancho             | 1,           | 737   |          | rancho Town                                  |             | AFT             |            | 430    |                        | 14     |       | 14    |      | 0   |   |
|      |                     |                   |              | 97.4  | - 127    | cw Techiman Rd                               |             | NTI             | ξ.         | 420    | 1                      | 14     | 1     |       | 1    |     |   |
| 03_1 | 2 No                | w Techiman        | Ĭ            | 71,4  | - ['"    |  |             | 1-              |            | 12.0   |                        | 8      |       | 6     |      | 0   |   |
|      |                     |                   |              | 101.3 | T        | anos Mini Market                             |             | TM              | M          | 240    |                        | ٥      |       | 1     |      |     |   |
| 03_  | 3 Ta                | 020n              | 1            | .01,2 | ´  '`    |  |             | 1-              |            | 1      |                        | 1:2    |       | 112   |      | 0   |   |
|      |                     |                   |              | 105,  | o tr     | adieso Town                                  |             | 11A             | 1          | 360    |                        | 1      |       | 1     |      | L   |   |
| 03_  | 14   18             | dieso             |              | ,,,,, | - 1      |  |             | 1=              |            | 240    |                        | 18     |       | 8     |      | 0   |   |
|      |                     | echiman Custom B  | arrier       | 107   | 3 1      | echiman Custom Barrier                       |             | TC              | ø          | 240    |                        | 1      |       | 1     |      | 1   |   |
| 03_  | 15 {T               | echiman Custom b  | , a, i i c i | ]     | 1        |  |             | ٠               | m          | 300    |                        | 110    |       | 10    |      | 0   |   |
| L_   |                     | Y-11-             |              | 108   | 7 1      | Cunturiso Town                               |             | KΨ              | از         | 1,00   |                        | 1      |       | 1     |      | 1   |   |
| 03   | _16 \K              | untunso Town      |              | 1     | <i>`</i> |  |             | 1:              | <u> </u>   | 350    |                        | 12     |       | 12    |      | 0   |   |
| L-   |                     | To com            |              | 1110  | 3        | Hansua Town                                  |             | H               | ΑT         | 330    |                        | 1.     |       | 1     |      |     |   |
| ťΰ3  | _17 }               | lansua Town       |              |       | i i      |  |             |                 | ES         | 240    |                        | ε      |       | 8     |      | ю   |   |
| ļ.,, |                     |                   |              | 111   | 4        | Techiman Sir High Scho                       | ol .        |                 | HS<br>F2   | 60     |                        | 2      |       | 2     |      | }   |   |
| 03   | _18                 | Techiman          |              |       | 1        | Tachiman Snr High Scho                       | QΙ          |                 | ns<br>HT   | 600    |                        | 20     | )     | 20    |      |     |   |
| i    | į                   |                   |              |       |          | Frontage Tech High Schi                      | 901-        | 1,              |            | 1      |                        |        |       | 1     |      |     |   |
| 1    | i                   |                   |              | 1     |          | Techiman Town                                |             |                 | 3JK        | 120    |                        | 14     |       | 14    |      | 10  |   |
| 1    |                     | E - Loction       |              |       |          | Bursa Junction-Kafarida                      | ia R3       | - 1             | JJK<br>BJU |        |                        | 6      |       | 6     |      | -   |   |
| c    | 3_19                | Bunsa Junction    |              |       |          | Bunso Junction-Kumasi                        |             |                 | 610<br>814 | 1      |                        | 5      |       | 5     |      | 1   |   |
| į    |                     |                   |              | Ì     |          | Bunsu Junction-Accra                         |             | 1               | (D) M      |        |                        |        |       |       |      |     |   |
| Į    |                     | 1                 |              |       |          |  |             |                 | ΚĀ         |        |                        | 2      |       | 2     |      | 0   |   |
| 17   | 3 20                | Kade Junction     |              | 1     |          | Kade In Kade Rd                              |             | ļ               | KΑ         | - 1    | 0                      |        | 7     |       |      |     |   |
| l'   | 13 _ 64             |                   |              |       |          | Kade In-Anyinam Town                         |             |                 | لدار       |        |                        | - 1    | 2     | 2     |      | 10  | • |
|      | 33 21               | Juaso Junction    |              | Ì     |          | Juaso Junction-Juaso R                       | •           |                 | JAI        |        | X)                     |        | 10    |       | 0    |     | 3 |
| - 1  | 11_(0               |                   |              |       |          | Juazo- Kumasi Rd<br>Mankranso Junction-M     | ankra       | nso             | M          | M 6:   | )                      |        | 2     | 2     |      | Ι,  | 1 |
| -    | 03 22               | Kumasi Sunyani    | Rd           |       | 30,B     | Mankranso Junction M<br>Mankronso Junction S | *********** | i Rd            |            |        | 0                      |        | 7     |       |      |     | 0 |
| 1    | U3_ZZ               | Tourist Transfer  |              |       |          | Mankronse Junction-3                         | 17.4        |                 | TE         | τ 9    | )                      | į      |       | - 1   | 5    | ,   | J |
| į    | 03 23 Tepa Junction |                   | on           |       | 68,4     | Tepa Junction-Tepa Ro                        | 12 A        |                 | TE         |        | 80                     |        |       |       | 6    |     | 4 |
|      | 03 Z Z Z            | 1.00              |              |       |          | Tapa Junction-Becham                         | 7.0         |                 | 1          |        | .32                    |        | 251   | - 1   | 247  | Į   | 4 |
|      |                     | - <del></del>     |              |       |          | 1  |             |                 | 1          |        |                        |        | 1     | Į     |      |     | _ |

# **APPENDIX 2**

Facility Amount

EUR 7,500,000

Repayment Period

14 years

**Graced Period** 

7.5 years

Maturity

21.5 years

Interest Rate

0.9% (0%+ OeKB Guarantee margin 0.9%)

Commitment Fee

0.5%

Management Fee

0.5%

Upfront Fee

0.5%

**GRANT ELEMENT** 

49.84%

