

11.07.2011

GRANT NO. NDF C6

**GRANT AGREEMENT**

**GHANA LANDFILL GAS CAPTURE & UTILISATION PROJECT**

under

**Second Urban Environmental Sanitation Project**

between

**The Republic of Ghana**

and

**NORDIC DEVELOPMENT FUND**

Dated 24th June, 2011

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## GRANT AGREEMENT

between THE REPUBLIC OF GHANA (the "Recipient") and NORDIC DEVELOPMENT FUND (the "Fund").

### WHEREAS

- a) the Fund was established as a Nordic multilateral development financing institution pursuant to an agreement between the Governments of Denmark, Finland, Iceland, Norway and Sweden for the purpose of promoting economic and social development in developing countries through participation in financing on concessional terms of projects of interest to the Nordic Countries;
- b) the Recipient, having satisfied itself of the feasibility and priority of the project described in Annex 1 to this Agreement (the "Project"), has requested the Fund to assist in the financing of the Project;
- c) the Recipient has entered into an agreement (the "*Credit Agreement*"), dated 13 August 2004, with International Development Association (the "Lead Agency") to assist in the financing of the Second Urban Environmental Sanitation Project;
- d) the Project will be carried out by the Ministry of Local Government and Rural Development (MLGRD) in consultation with the Metropolitan Assemblies of Kumasi, Tamale and Tema (each an "Implementing Agency" collectively the "Implementing Agencies"). The Recipient will make the proceeds of the Grant (as defined in Article 1) available to the Ministry of Local Government and Rural Development as provided for in this Agreement;
- f) the Fund, in accordance with a co-operation agreement dated 23 October 1991, may request the Lead Agency to carry out on behalf of the Fund the monitoring and evaluation of the part of the Project to be financed by the Fund according to the Lead Agency's usual procedures;
- g) the Recipient and the Fund have on 12 April 1996 entered into an agreement on the legal status of the Fund in Ghana;
- h) the Fund has agreed, on the basis, inter alia, of the foregoing, to extend the Grant to the Recipient upon the terms and conditions set forth in this Agreement;

NOW IT IS AGREED:

## ARTICLE I

### Definitions

1.01 Wherever used in this Agreement, unless the context otherwise requires, the several terms defined in the Preamble to this Agreement have the meanings therein set forth, and the following additional terms have the following meanings:

"Agreement" means this particular grant agreement, including all annexes, schedules and agreements supplemental hereto, as such agreement may be amended from time to time;

"Banking Day" means, in relation to any place where transactions under this Agreement have to be carried out, a day on which commercial banks in such place are neither required nor authorised to be closed;

"Closing Date" means a date after which the right of the Recipient to make drawdowns under this Agreement may be terminated by the Fund;

"Contractor" means a supplier of goods, works and/or services for the Project, selected in accordance with Annex 1 to this Agreement;

"Grant" means the grant provided for in this Agreement or any part thereof, as the context requires;

"Dollar(s)", "USD" and the sign "\$" mean the currency of the United States of America;

"EUR" and the sign "€" mean euro, the lawful currency of the member states of the European Union that adopt the single currency in accordance with the Treaty establishing the European Community (signed in Rome on 25th March 1957), as amended by the Treaty on European Union (signed in Maastricht on 7th February 1992);

"Taxes" includes imposts, levies, fees and duties of any nature, whether in effect at the date of this Agreement or imposed thereafter.

ARTICLE II  
The Grant  
Use of the Grant - Financing of Taxes  
Disbursements

2.01 The Fund agrees to grant to the Recipient, on the terms and subject to the conditions set forth or referred to herein, an amount of up to EUR 2,000,000 (two million euros).

2.02 The Recipient shall be entitled to draw down the Grant in accordance with the provisions of this Agreement, for the purpose of paying eligible expenditures incurred in respect of the reasonable cost of goods, works and services required for the Project and to be financed by means of the Grant.

2.03 Unless the Fund shall agree otherwise, no amount of the Grant shall be drawn or be applied, directly or indirectly, on account of expenditures incurred prior to the date of this Agreement.

The use of any of the proceeds of the Grant to pay for Taxes levied by, or in the territory of, the recipient on or in respect of eligible expenditures, or on the importation, manufacture, procurement or supply of goods, works and services for such eligible expenditures, if permitted pursuant to this Agreement, is subject to the Fund's policy of requiring economy and efficiency in the use of the proceeds of its grants. To that end, if the Fund at any time determines that the amount of any such Tax is excessive, or that such Tax is discriminatory or otherwise unreasonable, the Fund may, by notice to the Recipient, adjust the percentage of such expenditures to be financed out of the proceeds of the Grant, as required to ensure consistency with such policy of the Fund.

2.04 Drawdowns shall reflect the implementation of the Project. The proceeds of the Grant shall be paid (i) directly to the Contractor(s), or (ii) to a third party for eligible expenditures under special commitments entered into, in writing, at the Recipient's request and on terms and conditions agreed between the Fund and the Recipient, or (iii) to one or more special accounts opened for the purposes of the Project on terms and conditions acceptable to the Fund.

2.05 Disbursements under the Grant shall be made upon receipt by the Fund of (i) a disbursement request acceptable to the Fund, duly documented, and submitted by or on behalf of the Recipient, or (ii) in case of special commitment, a payment request submitted by the third party to whom the special commitment was provided by the Fund.

2.06 Each disbursement shall be made on a date determined by the Fund. Unless the Recipient has requested disbursement on a specified later date, disbursement will normally be made not later than 30 calendar days after receipt of the disbursement request, provided that all conditions precedent to disbursement set out in Article III hereof have been fulfilled.

2.07 The Closing Date shall be 31 December 2014, or such later date as the Fund shall establish. The Fund shall promptly inform the Recipient of such later date.

ARTICLE III  
Conditions of Disbursement

3.01 Unless otherwise agreed, the making of disbursements from the Grant shall be subject to the conditions precedent that

(a) this Agreement is in full force and effect, and no event, which would entitle the Fund to suspend disbursements under this Agreement, shall have occurred and be continuing;

(b) the Recipient has taken or caused to be taken all action necessary or advisable to enable the Recipient to receive the Grant and to perform its obligations hereunder, including obtaining all required exemptions, consents and permits; and

(c) the Fund has received and accepted

- (i) a legal opinion showing that this Agreement has been duly authorised or ratified by, and executed and delivered on behalf of, the Recipient and is legally binding upon the Recipient in accordance with its terms;
- (ii) if requested by the Fund, further evidence satisfactory to it that the execution and delivery of this Agreement on behalf of the Recipient has been duly authorised by all necessary authorities;
- (iii) evidence satisfactory to it of the authority of the person or persons authorised to sign disbursement requests and the authenticated specimen signature of any such person;
- (iv) evidence satisfactory to it that other financing contemplated for the Project, including financing from the Recipient, has been obtained, and that conditions precedent to the effectiveness of such financing have been met;
- (v) if relevant, certified copies of implementation agreements, acceptable to the Fund, whereby the Recipient makes the Grant available to the Implementing Agencies;
- (vi) if relevant, evidence that Special Account(s) have been opened on terms and conditions satisfactory to the Fund.

ARTICLE IV  
Currency Provisions

4.01 The proceeds of the Grant shall be disbursed in freely convertible currency with reference to EUR in accordance with section 4.02 hereof.

4.02 Whenever it shall be necessary for the purpose of this Agreement to determine the value of one currency or unit of account with reference to another currency or unit of account as of a given date, such value shall be as reasonably determined by the Fund.

ARTICLE V  
Co-operation and Information  
Recipient's Undertakings and Representations

5.01 The Recipient and the Fund shall co-operate fully to ensure that the purpose of the Grant will be accomplished. To that end, each of them shall furnish to the other party all such information as it shall reasonably request with regard to the general status of the Project.

5.02 (a) The Recipient and the Fund declare their commitment to counteract corrupt practices in relation to the Grant and the execution of the Project. Whenever such corrupt practices are indicated, the Recipient and the Fund shall, at the request of either party, discuss the matter with a view to agree on the form, scope and schedule of investigations and actions and, if applicable, the financing thereof.

(b) The Recipient undertakes to take all necessary action to prevent corrupt practices within its territory and to pursue, by all appropriate means, any such practices whenever identified.

5.03 The Recipient shall promptly inform the Fund of (i) any condition which interferes or threatens to interfere with the accomplishment of the purpose of the Grant (including substantial increase in the cost of the Project), and (ii) any event which with the lapse of time or otherwise would entitle the Fund to suspend disbursements under this Agreement.

5.04 The Recipient recognises that the Fund follows policies similar to other multilateral financial institutions as regards project execution.

ARTICLE VI  
Execution of the Project

6.01 The Recipient shall take or cause to be taken all action which shall be necessary to execute the Project with due diligence and efficiency and in conformity with appropriate administrative, financial, engineering, social, environmental and climate change mitigation and adaptation practices.

6.02 (a) The Recipient shall ensure that the proceeds of the Grant shall be used only for the financing of the Project or, as applicable, Project component(s) for which the Grant is extended. Procurement of the goods, works and services required for the Project and to be financed out of the proceeds of the Grant shall be governed by the provisions of Annex 1 to this Agreement as said provisions may be further elaborated in the Procurement Plan.

(b) The Recipient shall prepare a Procurement Plan in accordance with guidelines acceptable to the Fund for a period covering at least 18 initial months of the project execution, and update the Procurement Plan and furnish such update to the Fund for "no objection" not later than 12 months after the date of the preceding Procurement Plan.

(c) The Recipient shall ensure that in respect of procurement of goods, works and services for the Project, invitations to tender as well as procurement contracts shall, respectively, include clauses that gives the Recipient and the buyer the right to (i) demand investigations of the tenderer's/Contractor's books by independent auditors for the purpose of ascertaining whether or not corrupt practices have taken place, (ii) reject any tender and cancel any procurement contract in case any corrupt practices have taken place in connection with the procurement procedure related to the contract or the execution thereof, (iii) claim compensation for the damage or loss arising from any such rejection of tender or cancellation of contract, and (iv) exclude the tenderer/Contractor, either indefinitely or for a certain period of time, from competing for and participating in the execution of contracts in the territory of the Recipient.

6.03 In addition to the proceeds of the Grant the Recipient shall make available or cause to be made available promptly when needed, all other funds that are required for the execution of the Project (including any funds that may be required to meet any increase in cost).

6.04 The Recipient shall insure or cause to be insured, or make adequate provision for the insurance of, the imported goods to be financed out of the proceeds of the Grant against hazards incidental to the acquisition, transportation and delivery thereof to the place of use or installation. Any indemnity for such insurance shall be payable in a freely usable currency to replace or repair such goods.

6.05 The Recipient shall:

(i) maintain records and procedures adequate to record and monitor the progress of the Project (including its cost and the benefits to be derived from it), to identify the goods, works and services financed out of the proceeds of the Grant and to disclose their use in the Project;

(ii) enable the Fund's representatives to visit any facilities and construction sites included in the Project and to examine the goods, works and services financed out of proceeds of the Grant and



any plants, installations, sites, works, buildings, property, equipment, records and documents relevant to the performance of the obligations of the Recipient under this Agreement; and

(iii) furnish to the Fund at regular intervals reasonably detailed information concerning the Project, its budgeted and actual cost, the budgeted and actual expenditure of the proceeds of the Grant, and the goods and services financed out of such proceeds. Audited accounts of the use of the Grant for the preceding financial year (January-December) shall be provided not later than 30 June each year up to and including Project completion.

6.06 Promptly after completion of the Project, but in any event not later than six months after the Closing Date or such later date as may be agreed for this purpose between the Recipient and the Fund, the Recipient shall prepare and furnish to the Fund a reasonably detailed report on the execution and initial operation of the Project, its cost and the benefits derived and to be derived from it.

## ARTICLE VII

### Suspension and Cancellation

7.01 If any of the following events of suspension shall have occurred and be continuing, the Fund may, by notice to the Recipient, suspend in whole or in part the right of the Recipient to draw down the Grant:

- (a) The Recipient shall have failed to perform any obligation under this Agreement.
- (b) The Recipient shall have failed to make payment of principal, charges or any other amount due to the Fund under any credit, grant or guarantee agreement between the Recipient and the Fund.
- (c) The Fund shall have suspended in whole or in part the right of the Recipient to make drawings under any credit or grant agreement with the Fund because of a failure by the Recipient to perform any of its obligations (other than payment obligations) under such agreement.
- (d) As a result of events which have occurred after the date of this Agreement, an extraordinary situation shall have arisen which shall make it improbable that the Project can be carried out or that the Recipient will be able to perform its obligations under this Agreement.
- (e) An extraordinary situation shall have arisen in which any further disbursement by the Fund would exceed its resources available for disbursement.
- (f) A representation made by the Recipient in or pursuant to this Agreement, or any statement furnished in connection therewith, and intended to be relied upon by the Fund in extending the Grant, shall have been incorrect in any material respect.
- (g) (i) (A) The right of the Recipient to draw down the proceeds of any grant or loan made to the Recipient (other than by the Fund) for the financing of the Project shall have been suspended, cancelled or terminated in whole or in part,

pursuant to the terms of the agreement providing therefor,  
or

(B) any such grant shall have become repayable or any such loan shall have become due and payable prior to the agreed maturity thereof.

(ii) Subparagraph (i) of this paragraph shall not apply if the Recipient establishes to the satisfaction of the Fund that (A) such suspension, cancellation, termination or prematuring is not caused by the failure of the Recipient to perform any of its obligations under such agreement; and (B) adequate funds for the Project are available to the Recipient from other sources on terms and conditions consistent with the obligations of the Recipient under this Agreement; and

(h) The Recipient has failed to pay any of its external debt to a multilateral financial institution

(i) Payments to the Recipient are prohibited by a decision of the United Nations Security Council taken under Chapter VII of the Charter of the United Nations

The right of the Recipient to draw down the Grant shall continue to be suspended in whole or in part, as the case may be, until the event or events which gave rise to such suspension shall have ceased to exist, unless the Fund shall have notified the Recipient that the right to draw down has been restored in whole or in part, as the case may be.

7.02 If (a) the conditions precedent to the first disbursement have not been fulfilled 90 calendar days after the date of this Agreement, or (b) the right of the Recipient to draw down the Grant shall have been suspended for a continuous period of thirty days, or (c) at any time, the Fund determines, after consultation with the Recipient, that an amount of the Grant will not be required to finance the Project's costs to be financed out of the proceeds of the Grant, or (d) after the Closing Date, an amount of the Grant shall remain undrawn, the Fund may, by notice to the Recipient, terminate the right of the Recipient to draw down the Grant or, as applicable, the relevant amount of the Grant. Upon the giving of such notice, the Grant or the relevant amount of the Grant, shall be cancelled.

7.03 Notwithstanding any suspension or cancellation, all the provisions of this Agreement shall continue in full force and effect except as specifically provided in this Article.

## ARTICLE VIII

### Repayment

8.01 The Recipient shall upon the Fund's demand promptly repay to the Fund (or, if applicable and agreed by the Fund, to the Special Account) any amount of the Grant used for purposes not permitted by or pursuant to this Agreement.

8.02 The Recipient shall upon the Fund's demand promptly repay to the Fund any amount of the Grant standing to the credit of a Special Account if the Fund determines, after consultation with the Recipient, that such amount will not be required to finance the Project's costs to be financed out of the proceeds of the Grant.

## ARTICLE IX

### Enforceability and Arbitration

#### Failure to Exercise Rights

#### Waiver of Immunity

9.01 The rights and obligations of the Recipient and the Fund under this Agreement shall be valid and enforceable in accordance with the terms hereof notwithstanding the law of any state or political subdivision thereof to the contrary. Neither the Recipient nor the Fund shall be entitled in any proceeding under this Article to assert any claim that any provision of this Agreement is invalid or unenforceable because of any provision of the Articles of Agreement or the Statutes of the Fund.

9.02 Any dispute, controversy or claim arising out of or relating to the interpretation, application or performance of this Agreement, including its existence, validity or termination, which has not been settled by agreement of the parties within 60 calendar days, shall be settled by final and binding arbitration under the Permanent Court of Arbitration Optional Rules for Arbitration Involving International Organizations and States, as in effect on the date of this Agreement.

The place of arbitration shall be Paris and the language of the arbitral proceedings shall be English.

9.03 Service of any notice of process in connection with any proceeding under this Article may be made in the manner provided for in section 10.02 hereof. The parties hereto waive any and all other requirements for the service of any such notice of process.

9.04 No delay in exercising or omission to exercise any right, power or remedy accruing to any party under this Agreement upon default or otherwise shall impair any such right, power or remedy or be construed to be a waiver thereof, nor shall any action of such party in respect of any default affect or impair any right, power or remedy of such party in respect of any other or subsequent default.

9.05 The parties hereby expressly waive any right of immunity they might have on the grounds of sovereignty or otherwise in connection with any arbitral proceeding pursuant to section 9.02 hereof or with the enforcement of any award pursuant thereto.

## ARTICLE X

### Miscellaneous Provisions

10.01 The Minister of the Recipient at the time responsible for finance is designated as representative of the Recipient for the purposes of signing and executing on behalf of the Recipient any documents used in connection with this Agreement. This notwithstanding, an Implementing

Agency and the Fund may agree in writing upon any change to, or further specification of, Annex 1, Project Description, including the attached Procurement Schedule, provided that the amount of the Grant will not be increased, and any such change or further specification shall be deemed an integral part of this Agreement.

10.02 Any document, notice or request required or permitted to be given or made under this Agreement shall be made in writing in the English language and may be delivered (i) by airmail or internationally recognised courier service, (ii) by telefax, or (iii) by other electronic means to the party to which it is required or permitted to be given or made, at such party's address specified below or at such other address as such party shall have designated by notice to the other party. Any document, notice or request expressly required under this Agreement shall, if given by telefax or by other electronic means, promptly be confirmed by letter, and the Fund shall not be under any obligation to take any action until receipt of such letter.

For the Fund:

Nordic Development Fund  
P.O.Box 185  
FI-00171 Helsinki, FINLAND  
tel: +358 9 18 00451      telefax: +358 9 622 1491

For the Recipient:

Ministry of Finance and Economic Planning  
P.O.Box M40  
Accra, GHANA  
Attn.: Director, External Resource Mobilization (Multilateral Division)  
  
tel: +233 302 663304/ 686100      telefax: . +233 302 669475

For the Implementing Agency/Agencies:

Ministry of Local Government and Rural Development  
P.O. Box M50  
Accra, GHANA  
tel: +233 30 266 3668      telefax: +233 30 268 2003

Kumasi Metropolitan Assembly  
P.O. Box 1916,  
Kumasi, GHANA  
tel: +233 32 202 3184      telefax: +233 32 202 3707

Tamale Metropolitan Assembly

P.O. Box 4,

Tamale, GHANA

tel: +233 37 202 2950

telefax: +233 37 202 2653

Tema Metropolitan Assembly

P.O. Box 301,

Tema, GHANA

tel: +233 30 320 2827

telefax: +233 03 320 8011

10.03 The Fund may disclose this Grant Agreement and any information related to this Grant Agreement in accordance with its policy on access to information, in effect at the time of such disclosure.

10.04 This Agreement is made in two copies each of which shall be an original.

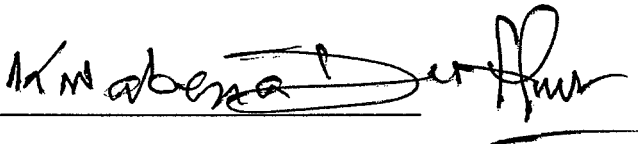
10.05 The following annex forms part of this Agreement:

Annex 1 Project Description/Procurement

IN WITNESS WHEREOF the parties hereto, acting through their duly authorised representatives, have caused this Agreement to be signed with their respective names as of \_\_\_\_\_ .2011.

REPUBLIC OF GHANA

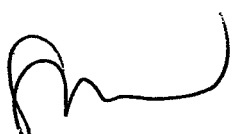
By: \_\_\_\_\_



Ministry of Finance and Economic Planning

NORDIC DEVELOPMENT FUND

By: \_\_\_\_\_



Satu Santala, Member of the Board of Directors



Leena Klossner, Deputy Director

**Grant Agreement: GHANA LANDFILL GAS CAPTURE & UTILISATION PROJECT**

**KEY PROJECT INFORMATION:**

<b>Sector/Climate change focus:</b>	Infrastructure / Solid Waste Management Mitigation of climate change
<b>Recipient country/institutions:</b>	Republic of Ghana Ministry of Local Government and Rural Development Kumasi Metropolitan Assembly Tamale Metropolitan Assembly Tema Metropolitan Assembly
<b>Lead/Partner Agency:</b>	The World Bank / IDA
<b>Lead/Partner Agency Project:</b>	Second Urban Environmental Sanitation Project
<b>Project implementation period:</b>	<b>2011-2014</b>
<b>Cost -estimate and Financing plan:</b>	<p>NDF grant of EUR 2 million is estimated to cover the total cost of the international pre-investment consulting services for three landfills.</p> <p>Subsequent Clean Development Mechanism (CDM) related investment &amp; supervision costs are estimated at EUR 5.8 million and are to be covered by private CDM investors, Metropolitan/Municipal Assemblies (MAs), the Government and, eventual other financiers.</p>
<b>Relevance and rationale for NDF's climate change mandate:</b>	<p>The project aims at reduction of greenhouse gas (GHG) emissions. It is assumed to generate investments, revenues from sales of carbon credits under the Clean Development Mechanism (CDM) framework and revenues/savings from methane-based electricity production.</p>

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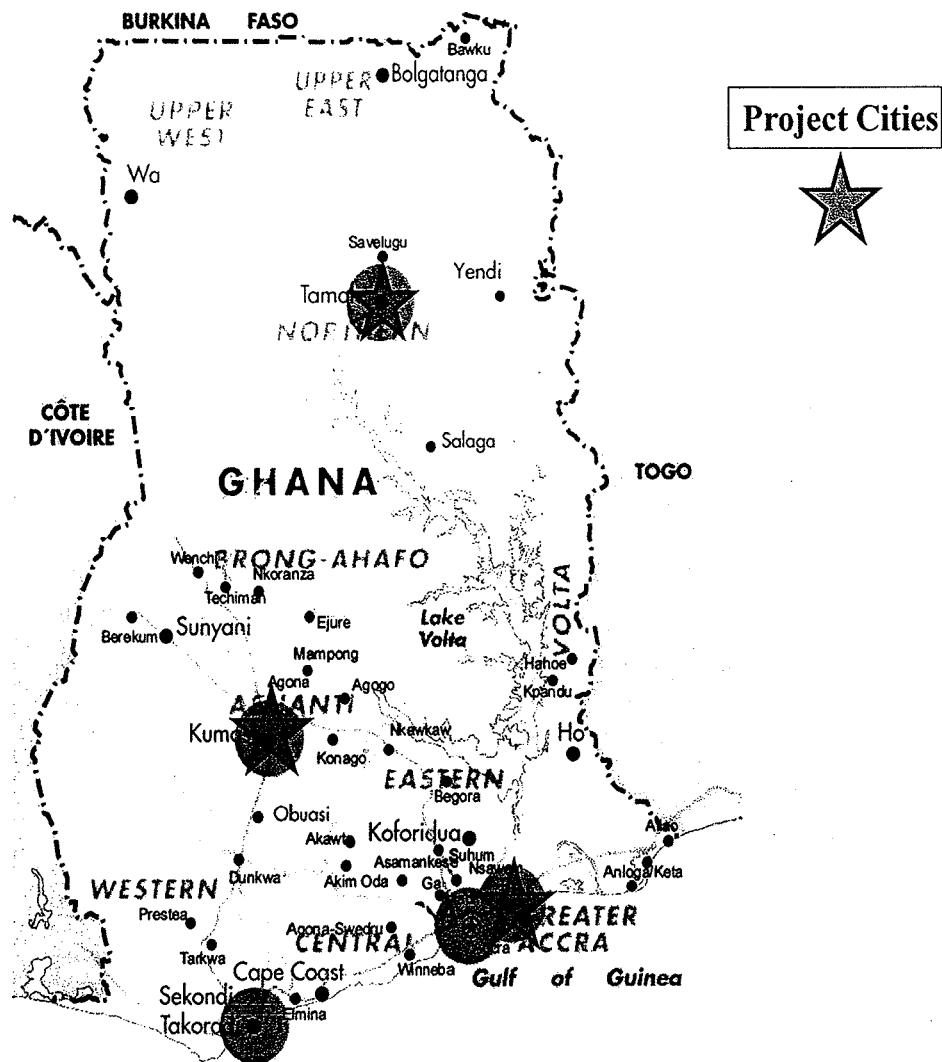
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## Abbreviations

CDM	Clean Development Mechanism
CER	Certified Emission Reductions
CH <sub>4</sub>	Methane
tCO <sub>2</sub>	tons of Carbon Dioxide (equivalent)
EPA	Environmental Protection Agency
EUR	euro
GHG	Greenhouse gas
GoG	Government of Ghana
GWh	Gigawatt hours
IDA	International Development Association
LFG	Landfill gas
MA	Metropolitan or Municipal Assembly
MDG	Millennium Development Goals
MLGRD	Ministry of Local Government and Rural Development (of Ghana)
MWh	Megawatt hours
NDF	Nordic Development Fund
O&M	Operation and Maintenance
PCU	Project Coordination Unit
SDR	Special Drawing Rights
ToR	Terms of Reference
UESP(II)	(Ghana)(2nd) Urban Environmental Sanitation Project
UN	United Nations
UNFCCC	United Nations Framework Convention on Climate Change
USD	United States Dollar
WB	The World Bank



## Schedule I: Project Description



### 1.1 Introduction

The Ministry of Local Government and Rural Development (MLGRD) Ghana requested NDF in a letter of 5 January 2010 for financing from NDF grants for the proposed “Landfill Gas Capture & Utilization Project” developed under the World Bank led Ghana Second Urban Environmental Sanitation Project (UESP II). The proposed project had been earlier screened and put into the NDF’s pipeline on 8 September 2009. The pipeline pre-appraisal concluded that the project is eligible for NDF funding and is in compliance with the climate change mandate of NDF and in accordance with the Fund’s climate and development oriented objectives. Following the request from the MLGRD, NDF initiated an Appraisal Mission to Ghana in April-May 2010 that resulted to a Board document on the basis of which the NDF Board approved on 8 June 2010 grant financing up to EUR 2 million for the Project.

## **1.2 Rationale and Relevance**

### **1.2.1 Rationale**

The proposed Landfill Gas Capture & Utilization Project will be in line with, and under the auspices of, the World Bank led Second Urban Environmental Sanitation Project. It will strengthen the climate change profile of the UESP II by paving way for concrete CDM actions guided by NDF's own objectives, approaches and procedures. The project is expected to lead to reduced emission of Greenhouse Gases (GHG) and substitute the use of energy from fossil fuels with renewable energy by utilising the methane from the landfills for electricity generation. The project will also strengthen the financial and operational performance of the solid waste management operations in the selected cities.

The proposed CDM project activity is in agreement with the criteria laid down by the Government of Ghana (GoG) for CDM projects in terms of its "contribution to alleviation of poverty by generating additional employment, removal of social disparities and contribution to provision of basic services to the people and hence leading to improvement in quality of life of, at least, the people within the targeted communities".

### **1.2.2 Relevance to NDF's New Mandate**

The project has undergone climate change screening according to NDF's procedures and is found to fit well into the Fund's mandate. The proposed project is eligible for NDF funding since it contributes to: (i) the mitigation of climate change by limiting anthropogenic emissions of GHGs; (ii) integration of climate change concerns with Ghana's development objectives through its response to the Environmental Protection Agency (EPA) requirements; and (iii) Ghana's efforts to meet its international climate change commitments. The Project falls within the following NDF priority areas: Mitigation of Climate Change, Renewable Energy and Capacity Building. The project design is targeting three of UNFCCC principal objectives that are fundamental to its design and the project budget is allocated for preparation and facilitation of investments related to the achievement of these objectives.

## **1.3 Project Background**

The proposed project is under the framework of the Ghana UESP II, co-financed by the World Bank/IDA, NDF, and others (2004-2011). Its objective is to improve urban living conditions in Accra, Kumasi, Sekondi-Takoradi, Tamale and Tema. The UESP II includes activities aimed to improve environmental health, sanitation, drainage, vehicular access, and solid waste management with special emphasis on the poor. The key components are (1) Storm Drainage, (2) Sanitation, (3) Solid Waste Management, (4) Community Infrastructure Upgrading in Low-income Communities and, (5) Institutional Strengthening in Central and Local Government Agencies (financed by NDF credit No. 430).

The proposed project is related to Component (3) of UESP II. The original designs of the three project landfills prepared in late 1990s and early 2000s do not include comprehensive systems for landfill gas management. Landfills for Kumasi and Tamale were constructed during the first UESP while the landfill in Tema is to be established under UESP II, next to an existing dumpsite. Landfills for Accra and Sekondi-Takoradi are also part of UESP II but are deemed to be premature for inclusion into the proposed new NDF grant project. Improvements to management and operation of the landfills are being carried out under the NDF credit for UESP II, together with upgrading of waste handling equipment.

## **1.4 Project Objective**

The overall objectives of the proposed NDF intervention are linked to those of the UESP II, namely to contribute to the achievement of the water and sanitation MDGs by increasing access to sustainable water and sanitation services. The purpose of the new NDF financed project is to strengthen the climate change mitigation profile of the UESP II with the objective of reducing the emissions of greenhouse gases (GHGs) from the solid waste landfills. The project also aims at increasing the use of renewable energy, and at improving the livelihoods and living conditions of the urban poor in the project cities, thus contributing to the attainment of the MDG targets. The project will also strengthen the financial situation and improve the solid waste management services in the project cities thus contributing to enhanced environmental health and living conditions of the concerned populations.

The estimated net reduction of GHG emissions of the three project landfills over a period of 10 years is around 1.2 million tons of CO<sub>2</sub> equivalent.

## **1.5 Project activities and Expected Results**

The LFG project will include project design, design of the LFG capture and utilisation systems and preparation of the related procurement documents, arrangements for financing of the investments, procurement and installation of the LFG systems and supervision thereof, commissioning and related training and, finally, sustainable operation and maintenance of the systems.

The NDF grant shall be used to prepare the ground for, and pursue the implementation of, bankable CDM projects to implement the landfill gas (LFG) capture and utilisation investments and operations in the following three landfills under the UESP II: (i) Kumasi Landfill (existing); (ii) Tamale Landfill (existing); and (iii) Tema (existing dumpsite and new landfill).

The immediate results of the NDF-financed consultancy will be active CDM projects in progress by MAs in partnership with private operators and carbon trade investors who will implement the necessary structural investments and support sustainable landfill operations, LFG capture & utilisation, and carbon credit activities. The investment stage activities will include works, procurement and installation of LFG capture and utilisation systems and, supervision of the works and supply contracts.

After the investment stage, the systems will be commissioned supported by necessary training after which they are expected to be in efficient and sustainable use for their economic lifetime, upto 20 years or more, under conditions of improved solid waste management, strengthened landfill operations, and enhanced economic robustness.

The preliminary estimates of LFG emission reduction potential are based on detailed modelling. The total baseline emissions from the three landfills accumulated over a 10 years crediting period (Table 1) are estimated at about 2.8 million tons CO<sub>2</sub> equivalents, while the accumulated net emissions reduction (ER) volume is 1.2 mill CO<sub>2</sub> equivalents. The ER volume is equivalent to the number of Certified Emission Reduction (CER), which will be generated through the CDM project. Based on actual verified data the CERs will be issued by the UN Clean Development Mechanism Executive Board.

**Table 1 Accumulated LFG Emission Reductions and Electricity Potential**

EMISSION DATA & RESULTS FOR 10 YRS CREDITING PERIOD				
	KUMASI	TAMALE	TEMA	TOTAL
<b>Emissions data</b>				
BASELINE EMISSIONS acc. (tCO <sub>2</sub> )	1,752,858	464,470	585,407	2,802,735
NET EMISSION REDUCTIONS acc (tCO <sub>2</sub> = CER)	747,347	196,561	248,262	1,192,170
<b>Energy data</b>				
CAPTURED METHANE acc. (tCH <sub>4</sub> )	35,588	9,360	11,822	56,770
ENERGY HEATING VALUE (MWh)	538	141	179	858
ELECTRICITY GENERATING POTENTIAL- GWh (25% efficiency)	134.5	35.4	44.7	214.6

The estimated market values of carbon credits and electricity production are summarised in Table 2 and the results show a considerable income potential especially for Kumasi. The other two projects indicate a more moderate result but still a relatively sizeable revenue potential when power generation is included.

**Table 2 Summary of Estimated Revenue Potential**

REVENUE POTENTIAL FOR 10 YRS CREDITING PERIOD				
	KUMASI	TAMALE	TEMA	TOTAL
MARKET PRICE OF CERs (EUR/tCO <sub>2</sub> )	13	13	13	13
MARKET VALUE OF CARBON CREDITS (CER) acc. (Mill EUR)	9,7	2,6	3,2	15,5
PRICE OF ELECTRICITY (EUR/KWh)	0,03	0,03	0,03	0,03
MARKET VALUE OF ELECTRICITY SALE acc. (Mill EUR)	4,6	1,2	1,5	7,3
Sum REVENUE POTENTIAL acc. (Mill EUR)	14,4	3,8	4,8	23,0

As summarized in Table 3, the three selected landfills are considered economically viable in terms of the carbon credit and electricity generation potential that would result in a pay-back period of the CDM investments in the order of 3-7 years.

**Table 3 Key Economic Indicators**

	Kumasi	Tamale	Tema
IRR	36%	15%	12%
Pay-back (years)	3	6	6

### NDF's components

The NDF grant will cover the consulting services for: (i) CDM project design; (ii) maturing the project and paving the way for structural investments and sustainable CDM operations including carbon credits; (iii) enabling the MAs entering into agreements with private CDM investors and taking on the responsibility for the CDM operations; and (iv) facilitating the procedures and formalities to secure carbon credits. These activities are placed under three location-based components: Component 1: Kumasi, Component 2: Tamale, and Component 3: Tema.

NDF grant will be used to finance the pre-investment consultancy services for the three components under one contract. NDF financed activities will come to an end early at the investments stage.

The identified scope of the pre-investment services/activities in each city will include (i) Political and Strategic Context Analysis; (ii) Analysis of Landfill Site Condition and Operational

Practices; (iii) Optimization and Design of LFG Recovery & Utilization System, (iv) Institutional and Operational Requirements; (v) Project Implementation Plans including also tender documents for the selected feasible alternative; (vi) Preparation and execution of a CDM project approval by UN CDM Executive Board; (vii) Draft version of a legal cooperating agreement between the Metropolitan/Municipal Assembly (MA), a potential landfill operator and a CDM investor; and (viii) Negotiation support, i.e. prepare the ground for commercial negotiations between MA and a CDM investor and propose a position paper for MA as a basis for the commercial negotiations. The pre-investment services will be implemented as one contract (bundled) covering Kumasi, Tema and Tamale landfills, carried out by one consulting firm/group based on competitive bidding.

### Cost Estimates and Financing Plan

Table 4 shows the provisional estimates of construction costs and the proposed NDF funded consultancy services related to LFG capture and utilisation for each of the selected landfills. The table reflects that the cost ceiling of the proposed NDF CDM project is estimated at EUR 2 million.

**Table 4 Provisional Cost Estimates**

<b>ITEM</b>	<b>Kumasi</b>	<b>Tamale</b>	<b>Tema</b>	<b>Total EUR</b>
<b>TOTAL CONSTRUCTION COSTS (incl. supervision)</b>	<b>2,871,000</b>	<b>1,232,000</b>	<b>1,694,000</b>	<b>5,797,000</b>
<i>O&amp;M of CDM Operations EUR/yr</i>	<i>229,680</i>	<i>98,560</i>	<i>135,520</i>	
<b>NDF FUNDED SERVICES</b>	<b>Kumasi</b>	<b>Tamale</b>	<b>Tema</b>	<b>Total EUR</b>
Total Fees	444,000	286,000	420,000	1,150,000
Expenses	244, 200	157 300	231 000	632,500
Contingencies and unforeseen (12%)	82,584	53,196	78,120	213,900
<b>TOTAL NDF PROJECT COSTS</b>	<b>770,784</b>	<b>496,496</b>	<b>729,120</b>	<b>1,996,400</b>
<b>Round figure</b>	<b>770,000</b>	<b>500,000</b>	<b>730,000</b>	<b>2,000,000</b>

## **Schedule II: Implementation Arrangement, Project Monitoring, Reporting and Evaluation**

### **2.1 Project Organization**

The responsibility for project implementation will be with the Ministry of Local Government and Rural Development (MLGRD) and its Project Coordination Unit (PCU) coordinating all donor-supported projects under UESP II and, with the Metropolitan Assemblies (Mas) of the project cities.

The pre-investment consulting services for the three components will be bundled under one NDF contract.

Supervision of works and installation will be financed by MAs and investors separately for each component.

### **2.2 Project Reports; Completion Reports**

The Project Coordination Unit (PCU) of MLGRD shall be responsible for quarterly and annual progress reporting and for Completion Report.

Standard requirements for reporting will be included in the contract for the consultants' services.

### **2.3 Financial Reporting/Audits**

Financial reporting and auditing will be harmonized with those of UESP2.

### **2.4 Monitoring and Evaluation**

The oversight function for project implementation and performance will be assigned to the UESP II Steering Committee that meets once a year with staff of the World Bank, NDF and other project implementation partners to review and guide the implementation process. The Ministry's desk officer dealing with NDF cooperation will also be an important entry point for the regular monitoring of project implementation. It is proposed to include the evaluation of the Landfill Gas Project into the post-project evaluation of the UESP II by the World Bank tentatively planned for 2014.

## Schedule III: Grant Proceeds, Disbursement, Eligible Expenditures

### 3.1 Disbursement

The Recipient may request disbursement of the grant proceeds in accordance with the provisions of the Grant Agreement, this Schedule and such additional instructions as NDF may specify by notice to the Recipient.

The disbursements will be made to finance eligible expenditures for the project through direct payments to the Consultant.

Requests by the Recipient for direct payments to the Consultant shall be supported by copies of invoices, certificates and other necessary documents as well as by copies of or references to contracts signed with the payee.

Unless otherwise agreed by NDF in writing during the project implementation, there will be no Special Account opened for the NDF grant funds.

The payments for the consulting contract shall be made directly by NDF based on disbursement requests submitted by MLGRD/PCU. The payments will be tied to progress of the services. Tentative disbursement estimate is as follows:

### 3.2. Eligible Expenditures

The following table specifies the categories of eligible expenditures that may be financed out of the proceeds of the Grant, the allocations of the amounts of the Grant to each category and the percentage of expenditures to be financed in each category.

#### Definition of Eligible Expenditures

Category	Amount of the Grant Allocated (EUR)	Percentage of Expenditures to be Financed
<b>C. Consultants' fees and expenses</b>		
<b>C.1 Consultants' fees and expenses without VAT &amp; NHIL</b>	2,000,000	100%
<b>C.2 VAT&amp; NHIL on Consultants' fees and expenses without*)</b>	300,000	0%
<b>TOTAL</b>	<b>2,300,000</b>	

\*) assumed as 12.5%+2.5% (output tax)

## Schedule IV: Procurement

The proposed NDF financed part of the landfill gas recovery and utilisation project will involve only consulting services. The procurement of these will follow the NDF Procurement Guidelines for Grant-financed Projects that are compatible with the procurement guidelines of the World Bank. Procurement will be carried out by the MLGRD/PCU in cooperation with the three MAs of Kumasi, Tamale and Tema. Procurement will be advertised internationally, in Ghana and on the NDF website and procurement opportunities will be open for the global business community.

Procurement of works, LFG capture and utilisation systems and related supervision services shall be carried out by the investors (in cooperation with the MAs) following the rules and guidelines to be agreed with MLGRD and the MAs. These may be separate for each of the three sites.

### 4.1 NDF General Procurement Guidelines

*All consultants' services* shall be procured in accordance with Section 5 of the "NDF General Procurement Guidelines for Grant-financed Projects", and with the provisions of this Schedule.

### 4.2 Particular Methods of Procurement of Consultants' Services

Except as otherwise provided in Section 4.4 - Procurement Thresholds - or later in this Section, consultants' services shall be procured under contract awarded on the basis of *Quality- and Cost-based Selection*.

### 4.3 Review by NDF of Procurement Decisions

The contract shall be subject to Prior Review by NDF. The following shall be subjected to NDF's prior review: Prequalification/shortlisting of interested firms, Request for Proposals (RFP), major amendments and addenda to RFP, Evaluation of Technical Proposals, Combined Evaluation of Technical and Financial Proposals, Draft Contract.

In addition, all amendments of contracts raising the initial contract value by more than 15% of original amount or above the prior review thresholds will be subject to Prior Review by NDF.

### 4.4 Procurement Thresholds

Expenditure Category	Contract Value Threshold (EUR)	Procurement Method	Contracts Subject to Prior Review (EUR)
4. Consulting Services with Firms	Above EUR 100,000	QCBS	All contracts
	Below EUR 100,000	Qualifications/Other	Above EUR 30,000