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MEMORANDUM OF UNDERSTANDING (MoU)

**THE MUNICIPALITY OF BOGURA
AND**

STICHTING IRC, INTERNATIONAL WATER AND SANITATION CENTRE

CONCERNING

ACCELERATING SUSTAINABLE PROCESSING BOTH FAECAL SLUDGE AND AGRICULTURAL WASTE AND/OR WATERHYACINTH INTO ELECTRICITY AND HEAT TO POWER A MUNICIPAL SOLID WASTE FACILITY WHICH PRODUCES BIO-FUEL, WITH HIGH CALORIC VALUE WHICH WILL REDUCE CO₂ EMISSIONS BY ELIMINATING THE NEED FOR LANDFILLS AND REPLACING FOSSIL COAL AS A SOURCE OF ENERGY.

THE MUNICIPALITY OF BOGURA (HEREINAFTER CALLED THE CITY) and STICHTING IRC, INTERNATIONAL WATER AND SANITATION CENTRE, (HEREINAFTER CALLED IRC) hereinafter referred to individually as the "Party" and collectively as the "Parties";

CONSIDERING the mutual interest of the Parties in developing cooperation to reduce CO₂ emissions and accelerating recycling and utilization of waste as a resource to produce bio-fuel and reducing the health hazards caused by the disposal of untreated faecal sludge;

DESIRING to further develop the friendly relations and strengthen the cooperation between the Parties for accelerating recycling and the sustainable processing of municipal solid waste into bio-fuel, reducing the increasing health hazards caused by landfills without processing the municipal solid waste and causing greenhouse gas emissions, and improving the drinking water, surface water quality and improving fecal sludge management **THE CITY** now wants to commission IRC to facilitate private companies, finance companies and other legal entities to invest in a Build Own Operate and Transfer (BOOT) enterprise, which through sustainable self-generation of electricity, using agricultural waste and sanitized fecal sludge to process the agricultural waste and fecal sludge into safe organic fertilizer and the municipal solid waste into biofuel, and improving the water quality and fecal sludge management, as well as recycle the ferrous and non-ferrous metal waste including aerosols and glass and process the remaining organic and non-organics into bio-fuel which can replace charcoal, and coal used now in cooking, the metal industry, cement factories and coal utilities with the sub-objective of

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reducing **THE CITY's** direct and indirect CO₂ emissions, pursuant to the prevailing laws and regulations of the Republic of Bangladesh.

AUTHORITY the Municipality of Bogura, under the prevailing laws and regulations of the Republic of Bangladesh at the time of signing this MoU, declares that it has the full Authority to enter into a binding mandate with IRC to facilitate a Build Own Operate and Transfer Agreement (BOOT) between the Municipality and A Company or Companies to Construct, Own and Operate and Transfer the assets, after a concession period to be agreed upon for a recycling and sustainable processing of agricultural, and municipal solid waste into electricity, heat, organic fertilizer, propane (from aerosols) and bio-fuel.

THE PARTIES THEREFORE HAVE AGREED as follows:

Objective

The objective of this Memorandum of Understanding (hereinafter referred to as the "MoU") is to provide a framework for cooperation at district level, as an effort to accelerate cleaning the city and improving the health of its citizen by accelerating the safe collection and processing of fecal sludge, agricultural waste and municipal waste and the sustainable processing of municipal solid waste including discarded aerosols into bio-fuel and propane, and sustainable self-generation of electricity, with the sub-objective of reducing **the City's** direct and indirect CO₂ emissions, and improve the quality of water supply and sanitation services in the city.

Scope of Cooperation

The scope of cooperation under this MoU may include:
Strengthening the cooperation of the Parties through technical, commercial and legal intensive evaluation for the development and/or negotiation of agreements in accelerating sustainable processing of municipal solid waste into bio-fuel, sustainable self-generation of electricity, establishing and monitoring cooperative and/or small enterprises for the collection of agricultural waste, fecal sludge, and a maintenance and repair facility for the maintenance of waste collection trucks, sanitation vehicles both vacutugs for emptying pit latrines and sanitation trucks, with the sub-objective of reducing **THE CITY'S** direct and indirect CO₂ emissions and improving their Sustainable Development Goals, by facilitating

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- Investing and developing in the recycling of metal (ferro and non-ferro), glass and aerosols;
- Investing and developing of sustainable and replicable waste processing facilities to produce bio-fuel from the remaining municipal solid waste not covered in text;
- Facilitating, the collection of agricultural waste including but not limited to water hyacinth, and cornstovers;
- Facilitate the Investing Construction and Operation of the generation of electricity and heat required for the processing of the Municipal Solid Waste into bio-fuel, and strengthening the supply of electricity to the Bangladesh Power Development Board under the existing tariffs and regulations for electricity, generated from biogas.
- Facilitating a franchise for the collection of fecal sludge from septic tanks and pit latrines,
- Facilitating training of a SME for the maintenance and repair of the City's waste and sanitation collection vehicles
- Willing to support a joint study and administrative team between IRC and City officials to collect data, document, map and analyze on a regular basis the quality of ground, surface and drinking water sources (deep wells) in and around the waste sites and find potential economically and financially viable technical solutions to further enhance the access to safe drinking water of the District inhabitants contributing to SDG 6;
- Willing to support a joint study and administrative team between IRC, ICDDR'B and City officials to regularly check the safe collection and transfer of fecal sludge, as well as regularly analysis of the organic fertilizer produced by the BOOT companies to assure that no parasites, heiminths and other pathogens are passed to agricultural production or contamination of ground and drinking water near the transfer sites.
- Optimization and utilization of the research and development for waste processing and fecal sludge processing in the district.
- Any other forms of cooperation as may be agreed by the Parties.

Executing Agencies

For the purpose of the implementation of this MoU, executing agencies for this cooperation will be:

- MUNICIPALITY OF BOGURA**, to collaborate with other related parties in the field of Sanitation, Agricultural and Municipal Solid Waste supply and processing; Generation of sustainable energy solutions, including Energy Efficiency and Management.

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- b. **IRC** to work with Development Partners in particularly the Government of the Netherlands, Financial Institutions and Commercial Technology Providers and facilitate the Preparation of Concept Papers, Feasibility Studies, Appraisal Reports and/or Information Memorandum for Investors and Development Financial Institutions, Private Sector Investors, Development Partners, and implement the proposed program. The municipality encourages and will IRC to recover the cost for these studies and network activities from the BOOT consortium and Development Partners.

Duty of THE CITY

Indicative data, services and resources to be provided by **THE CITY** include but are not limited to the following data, services and resources to IRC or its selected partners:

- All available relevant information on the mutual agreed sites and landfills in the Municipality.
- Provide land for the construction of the recycling and the conversion of the fecal sludge, plant, agricultural, and municipal solid waste in electricity and bio-fuel.
- The land would be made available on a timely as-is basis to enable commencement of the design and construction phase.
- Obtain requisite clearances, approvals, permits and licenses in connection with bio-fuel production from municipal solid waste, as well as electricity generation from fecal sludge, plant and agricultural waste, in compliance with the LGD (Paura) Act, Environment Act and the Electricity Act.
- Obtain Power Purchase Agreements for the excess electricity produced by the Company.
- At least two years before the transfer of the BOOT assets to the Municipality, the Municipality, in close coordination with the BOOT company will identify counselors, city engineers, and other staff, to be trained, at the expense of the BOOT company, in all Operation and Maintenance aspects of the assets, to facilitate a smooth transition of the assets to the municipality.
- Obtain long term off-take agreements for the "certified" organic fertilizer for government parks (Institutions or Departments, etc).

Duty of IRC

The Parties will determine specific areas of cooperation in accordance with Article 2 and its related activities by mutual consent. The detailed provisions relating to its forms and methods, financial obligations as well as the conditions of the agreed areas of cooperation will be set forth in separate arrangements to be concluded

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between the Parties. Indicatively these activities will include but are not be limited to:

- a. Carry out feasibility assessments to determine the most technically and financially sustainable options/technologies for the conversion of the fecal sludge, plant, agricultural, and municipal solid waste in electricity and bio-fuel.
- b. Facilitate assessments to ascertain that the volume of fecal sludge, plant and agricultural waste, where necessary augmented with other sustainable energy solutions, such as anaerobic digestion, solar or wind energy to generate electricity for the operation of the Company's operations as well as the municipal solid waste to bio-fuel operations.
- c. Facilitate Social and Environment Impact Assessments for the entire chain of the proposed electricity generation and recycling and waste-to-bio-fuel facilities.
- d. Secure the funds necessary for construction and development of the proposed agricultural waste recycling to energy and heat and the municipal Solid Waste-to-bio-fuel facilities. In addition IRC will work with the City and the BOOT Company to finance the logistics of the collection of fecal sludge from pit-latrines and Septic tanks and the agricultural waste. IRC will assist the city to improve and expand the collection of Municipal Solid Waste.
- e. IRC will assist the **CITY** and other authorities to do due diligence to provide the permits to operate and/or secure, all the requisite clearances, approvals, permits and licenses in connection with bio-fuel production from municipal solid waste, as well as electricity generation from fecal sludge, plant and agricultural waste, paying close attention to the LGD Act, Environment Act and the Electricity Act.
- f. Facilitate the construction and commissioning of the recycling facilities, waste-to-electricity and waste to bio-fuel facilities as required for the sites, mutually agreed upon.
- g. Monitor in close collaboration with City officials the operations of the waste-to-electricity and waste to bio-fuel facilities for the concession period. Including monitoring the expected pollution decrease of ground and drinking water in the vicinity of the dumpsites and expected reduction in prevalence of parasites, helminthes and other pathogens causing diarrhea and intestinal diseases, caused by unsafe collection and treatment of fecal sludge.
- h. Assist the CITY to work with the BOOT Company, at least two years before the transfer of the assets with training of counselors, administrators and engineers to facilitate a smooth transition of the Assets
- i. Ensure that at the end of the concession period, the waste-to-electricity and waste to bio-fuel facilities are transferred to the CITY in good working order.

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Confidentiality

- Each Party shall undertake to observe the confidentiality and secrecy of documents, information, and other data and materials received or supplied, directly or indirectly to the other Party during the period of the implementation of this MoU ("Confidential Information").
- If either of the Party wishes to disclose any Confidential Information resulted from the cooperation activities under this MoU to any third party, the disclosing Party must obtain prior written consent from the other Party before any disclosure can be made. The disclosing Party must submit such request of written consent within a period not less than 2 (two) months before the expected date of disclosure.
- The Parties agree that the provisions of this Article shall continue to be binding between the Parties, notwithstanding the termination or expiration of this MoU.
- The provisions of this Article shall not prejudice the prevailing laws and regulations of the Parties.

Limitation of Personnel Activities

Any individuals/officials of a Party engaged in activities under this MoU shall respect and not interfere with political independence, sovereignty, territorial integrity of the district and the host country, and avoid any activities inconsistent with the purpose and objectives of this MoU.

Intellectual Property Rights

- The protection of intellectual property rights shall be enforced in accordance with the laws and regulations of the Parties' respective countries.
- In cases where a specific project may result in intellectual property, the Parties will set up appropriate provisions in a separate arrangement concluded between the Parties under this MoU.

Settlement of Differences

Any differences related to the interpretation or implementation of this MoU shall be resolved amicably through consultation and negotiation between the Parties, based on mutual benefit, equality, cooperation, and mutual trust.

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Amendment

The provisions of this MoU may be amended at any time with the mutual consent of both Parties in a written form. Such amendment shall form an integral part of this MoU.

Entry into Force, Duration, and Termination

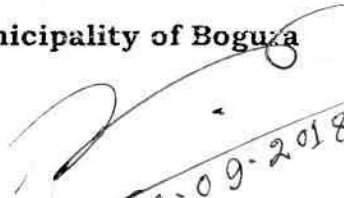
- This MoU shall enter into force on the date of its signing by both Parties and shall be effective for a period of 1 (one) years and may be extended by mutual written decision of the Parties.
- Either Party may terminate this MoU at any time by giving written notification to the other Party at least 3 (three) months prior to the intended date of termination.
- The termination of this MoU shall not affect the validity and duration of any other agreements made pursuant to this MoU, and any on going programs or projects undertaken under this MoU until the completion of such programs or projects.

IN WITNESS WHERE OF, the undersigned have signed this MoU.

Signed in duplicate at Bogura on 20th September 2018, in the English language,

FOR THE Municipality of Bogura

FOR IRC


20.09.2018



Adv. A.K.M. Mahbubur Rahman
Mayor of Bogura Municipality

Patrick Moriarty
CEO
STICHTING IRC,
INTERNATIONAL WATER AND
SANITATION CENTRE

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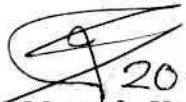
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Witness:

- 
20.09.2018
1. Abu Henā Mostofa Kamal
Executive Engineer
Bogura Municipality.

Witness:


20.09.2018
Antonie de Wilde
Senior Associate
STICHTING IRC,
INTERNATIONAL WATER AND
SANITATION CENTRE

- 
20.09.18
2. Md. Al Mehedi Hasan
Town Planner
Bogura Municipality.

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