KERJASAMA LOW CARBON DEVELOPMENT KAWASAKI- BANDUNG

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KOTA BANDUNG

PENDAHULUAN

- Kerjasama dimulai dari diskusi Pemerintah Jepang untuk bisa kerjasama dengan kota Bandung pada saat (BPLH dan DISHUB) mengikuti training pencemaran pengendalian pencemaran udara dari sektor transportasi yang diselenggaran oleh Institute Global Strategies for Environment (IGES) bertempat di Gedung UNEP Tokyo pada bulan November 2013; jika berminat (dengan surat minat dari Walikota) disarankan untuk membuat proposal


Bandung
Ecovillage
Bandung Sustainable Planning
Secretary of Environmental Control of Bandung
Badan Pengendalian Lingkungan Hidup Kota Bandung
2014

PROPOSAL BANDUNG ECO VILLAGE

Proposal diajukan mencakup aspek-aspek lingkungan dengan konsep perkampungan berkelanjutan, yaitu pengelolaan sampah, pengelolaan limbah cair, skywalk, parkir hidrolik , TPS Bawah tanah, transport ramah lingkungan dan edukasi gaya hidup ramah lingkungan, serta bike sharing

Aspek yang Disetujui dari proposal e untuk Feasebility Study 2014

- Pengelolaan sampah dengan bio digester
- LED pada penerangan jalan raya
- Evisiensi energi di bangunan

International Cooperation Activities through Green Innovation in Kawasaki City

"Program for Feasibility Studies on Large-Scale Joint Credit Mechanism (JCM) Projects Towards Environmentally Sustainable Cities in Asia" of the Ministry of the Environment: Project to support the creation of an environmentally sustainable city through city cooperation between Bandung City and Kawasaki City (from Fiscal 2014)

This project utilizes the Joint Credit Mechanism (JCM), a new mechanism promoted by the Government of Japan to properly assess Japan's contribution in emissions reduction and absorption of greenhouse gases (GHGs) from energy in other countries. Towards the goal of developing an environmentally sustainable city plan for Bandung City, Indonesia, a feasibility study is implemented on specific technologies for waste and energy, aiming at city planning for an environmentally sustainable city, identifying financing schemes, and supporting human resources development in Bandung City. In addition, the GHG emissions actually reduced through the project will be assessed quantitatively as an amount of reduction contributed by Japan, thereby aiming to contribute to the achievement of Japan's GHG emissions reduction target.

The conference between Kawasaki Environment Research Institute and the Bandung City Environmental Management Board (February 2014)

Low Carbon Technology
- Waste treatment through the energy technology based on methane fermentation
- Energy-saving streetlights (LED)
- Energy-saving equipment for buildings

Technologies, systems and other innovations from Kawasaki are provided to help create an environmentally sustainable city

Kawasaki City

Cooperation

Bandung City

Emissions reduction and absorption of GHGs

Eco-village Initiative of Bandung City

Feasibility Study
- Evaluation of the adequacy of system design
- Development of MRV methodologies

Study of the Details of the System
- Setting up a system required for introducing low-carbon technologies

Support in Human Resources Development
- Hold human resources development workshops in preparation for the introduction and implementation of the system

Energy-saving streetlights (LED)

Energy-saving equipment for buildings

Photo credit: Hitachi Zosen Corporation

The facility for methane fermentation treatment of food and other waste (including biogas power generation)

Used for achieving Japan's GHG reduction target

Inception meeting held in Bandung City

Participating and cooperating organizations

Project to Introduce Energy-Saving Streetlights (LED) and Energy-Saving Equipment for Buildings

Current Situation of Bandung City

Bandung City has been requested by the national government to reduce the amount of electricity used in the entire city by 20% compared to fiscal 2010. The City is proactively implementing the following energy-saving measures.

1) Streetlights

Bandung City possesses as many as 27,000 streetlights along the roads spread throughout the city (139 km), and presently most of them are sodium-vapor lamps. The City plans to introduce 53,000 LEDs in the future, which will include the replacement of existing lamps and the installation of additional lamps.

2) Energy-saving in buildings

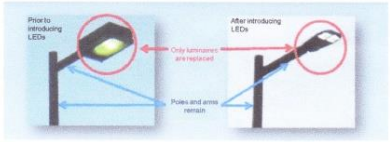
The City is pursuing studies on energy-saving in buildings, for example by implementing a study on energy consumption of four buildings in the city using the grant provided by the Ministry of Energy of Indonesia in 2011.

Details of the Feasibility Study

1) Streetlights

(i) Study on the current situation
- No. of streetlights that will be replaced with LEDs
- Distribution by type
- Lighting hours, amount of electricity used, electricity rates
- Guidelines of Bandung City

(ii) Simulation for introduction
- Selection of the LED lighting to be introduced
- Examination of methods of operation (lighting hours, etc.)
- Assessment of energy-saving effect and development of a cost recovery plan



2) Energy-saving in buildings

(i) Walkthrough survey
- How the air conditioners and lighting equipment are set up and their operational status
- Potential for energy saving

(ii) Data collection and analysis
- Collection of data on the amount of electricity used through a monitoring system
- Identification of problems and points of improvement by analyzing information on the equipment and monitoring data

(iii) Selection of the equipment to be introduced and assessment of energy saving effect
- Selection of the energy-saving equipment to be introduced
- Assessment of energy-saving effect and development of a cost recovery plan

[Examples of chiller manufacturers]

DAIKIN EBARA

Effects of Introduction

1) Streetlights

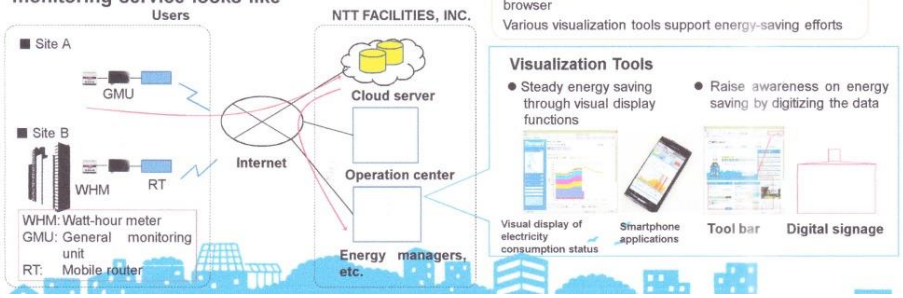
Reduction of electricity cost by 30% to 40% in Bandung City as a whole by changing streetlights to LEDs.

2) Energy-saving in buildings

Reduction of electricity cost of institutions by about 20% through replacing chillers with new ones and through other measures.

[Reference] Monitoring Technology

A picture of what the energy monitoring service looks like



Technology of Methane Fermentation

Current Situation of Bandung City

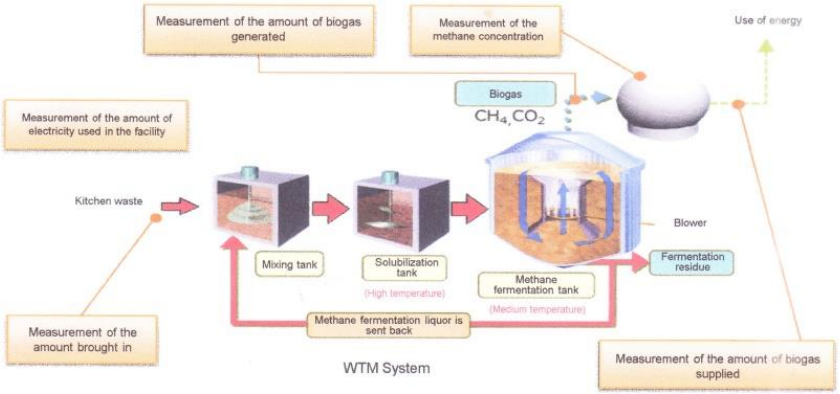
Municipal waste and septic tank sludge are not managed properly, and organic matter contained in the waste generates greenhouse gases (GHGs) and contaminate rivers and groundwater.

Waste scattered around the riverside area of Citarum River

A river in the city full of waste

A septic tank in a drainage canal

Methane Fermentation



Activities under the Feasibility Study

The Study will be implemented aiming at reducing GHGs and improving environmental and sanitary conditions, by collecting and using biogas and liquid manure through methane fermentation treatment of organic waste such as kitchen waste. Following are the main components of the study.

(1) Sorted collection methods for food waste and household waste from households
(2) Basic design of technical aspects of the methane fermentation facility
(3) How to use biogas, and the amount of GHGs reduced
(4) How to use liquid manure
(5) Development of the measuring, reporting and verification (MRV) methods to determine the amount of reduced GHGs

Expected Effects

1. Reduction of GHGs
(1) Reduction of methane and other gases from final disposal sites
(2) Reduction of fossil fuel consumption through the use of biogas

2. Improvement of environmental and sanitary conditions
(1) Promotion of the 3Rs for municipal and other waste
(2) Improvement of the water environment
(3) Improvement of public hygiene

Permasalahan implementasi JCM

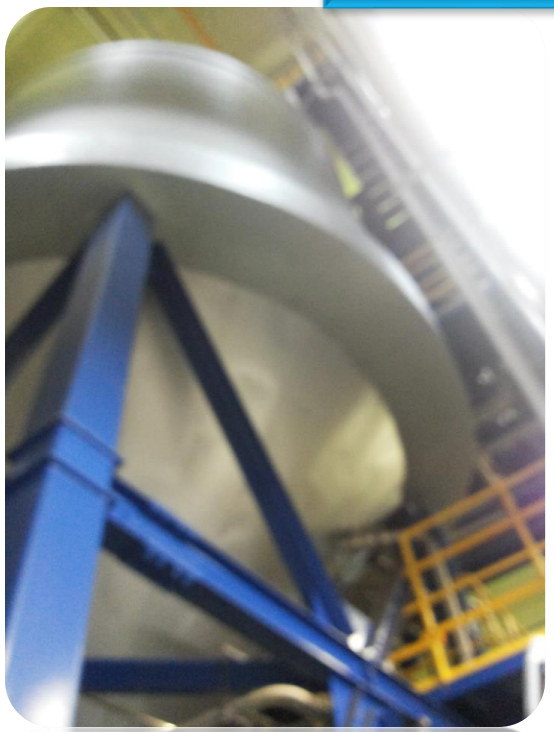
- Ketentuan pengadaan barang dan jasa untuk pembangunan sarana dengan skema JCM (50% Jepang, 50% Indonesia) belum mendukung. Sehingga pola kerjasama ini dengan pemerintah daerah sulit dilanjutkan.
- Pihak jepang mensyaratkan ada laporan keuangan dari pihak swasta yang bekerja sama dengan pihak JCM. Namun laporan dari pihak swasta di indonesia sulit didapatkan.
- Implementasi JCM untuk penerangan jalan raya tidak dapat dilanjutkan karena prosedur lelang tidak mendukung.
- Implementasi JCM untuk sektor swasta tidak dapat dilanjutkan karena persyaratan laporan keuangan.

Rencana pembangunan Biodigester

- Proyek JCM di sektor limbah padat dengan Biodigester dapat dilanjutkan dengan pola kerjasama bussines to bussines antara perusahaan daerah PD. Kebersihan dengan perusahaan swasta jepang (hibah JCM disalurkan melalui perusahaan jepang tersebut.
- Nilai 50% yang harus disediakan oleh Kota Bandung diatur dengan pengadaan barang yang dilakukan dengan lelang yaitu berupa bangunan pendukung biodigester tersebut.
- 50% hibah JCM melalui perusahaan swasta Jepang dialokasikan untuk mesin utama biodigester

MOU Kawasaki-Bandung

Biodigester untuk Mengolah Sampah Organik 15 ton/hari



Pola kerjasama Biodigester (JCM)