

1. Co-benefit-based climate change countermeasures and CDM in the water treatment field

(1) Co-benefit-based project as a measure for processing of sludge from sewage treatment plants

GHGs and method for treating contaminated water, etc.		GHGs and details of treating contaminated water, etc.
<p>Actual and current conditions</p>	<p>Problem areas</p> <ul style="list-style-type: none"> - Release of methane from sludge fields - Method for processing dried sludge, etc. 	<p>Current treatment method</p> <ul style="list-style-type: none"> - Sewage treatment is conducted using a settling tank (or lagoon) in the sewage treatment plant. - Large quantities of sludge are produced in sewage treatment. - Produced sludge is stored in sludge fields (sludge pits) for drying/volume reduction. - Dried/reduced sludge is piled outdoors or undergoes combustion processing. <p>Check list</p> <ul style="list-style-type: none"> - Basic sewage treatment facilities are installed. - No particular measures are taken for methane emitted from sludge fields. - No financial plans exist for installation of methane recovery and use facilities. - Energy used within the sewage treatment plant comes from fossil fuels.
<p>Suggested co-benefit-based project</p>	<p>Merits of co-benefit-based countermeasures</p> <ul style="list-style-type: none"> - Prevention of methane releases into the air (effective use in power generation) - Partial power substitution in treatment plants or gas supply to the market 	<p>New treatment methods</p> <ul style="list-style-type: none"> - Existing settling tank treatment continues unchanged. - Emitted sludge undergoes anaerobic fermentation in a bio-digester; methane is recovered. - Recovered methane is used to generate electricity. - Energy obtained from generation is used to substitute power from the grid, etc. (or is provided as gas to the market). <p>New facilities, etc., to be introduced through the co-benefit-based project</p> <ul style="list-style-type: none"> - Bio-digester, generator, etc. <p>Example of past success</p> <ul style="list-style-type: none"> - Beijing sewage treatment project (Gaobeidian sewage treatment plant) <p>Other</p> <ul style="list-style-type: none"> - Combined treatment with organic waste OK (in operation in Japan)

*Methane Gas Capture and Electricity Production at Chisinau Wastewater Treatment Plant, Moldova

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(2) Measures to process organic wastewater from food factories (tapioca, noodles, etc.)

GHGs and method for treating contaminated water, etc.		GHGs and details of treating contaminated water, etc.
Actual and current conditions	<p>Problem areas</p> <ul style="list-style-type: none"> - Generation of methane from lagoon - Water pollution caused by release of wastewater treated in lagoon - Generation of sludge <p>Wastewater 16,900m³/day*</p> <p>Open lagoon</p> <p>CH₄</p> <p>Release of wastewater treated in a lagoon</p> <p>COD 1,296mg/liter</p> <p>Generation of water pollution</p>	<p>Current treatment method</p> <ul style="list-style-type: none"> - Processing in lagoons or settling tanks is conducted in wastewater treatment. - Methane is generated in wastewater treatment lagoons. - Sludge is produced in wastewater treatment. <p>Check list</p> <ul style="list-style-type: none"> - Food is constantly and stably manufactured. - No particular measures are taken for methane emitted from sludge fields. - No financial plans exist for installation of methane recovery and use facilities. - Energy used within the food factory comes from fossil fuels.
Suggested co-benefit-based project	<p>Power supply (Displacement of fossil consumption)</p> <p>Food factory (tapioca, noodles, etc.)</p> <p>Bio-digester</p> <p>CH₄</p> <p>Generator (capacity:5MW)</p> <p>Generation of around 7,000 kWh/year</p> <p>Merits of co-benefit-based countermeasures</p> <ul style="list-style-type: none"> - Control of methane releases to the air - Partial substitution of power used in factory <p>Reduction 270,000tCO₂e/year</p> <p>CH₄</p> <p>Release of treated wastewater</p> <p>COD 1,130mg/liter</p> <p>final sedimentation tank</p>	<p>New treatment methods</p> <ul style="list-style-type: none"> - Existing food manufacturing facilities continue to be used as is. - Emitted sludge undergoes anaerobic fermentation in a bio-digester; methane is recovered and used to generate power. - Energy obtained from generation is used to substitute power from the grid, etc. <p>New facilities, etc., to be introduced through the co-benefit-based project</p> <ul style="list-style-type: none"> - Bio-digester, generator, etc. <p>Example of past success</p> <ul style="list-style-type: none"> - Project to recover and use methane from wastewater produced in tapioca starch manufacturing by PT Budi Acid Jaya, Lampung Province, Indonesia (UN CDMEB registration completed)

*Source: PDD of "PT. BUDI ACID JAYA Tapioca Starch Production Facilities Effluent Methane Extraction And On-Site Power Generation Project in Lampung Province, Indonesia"