

Low Environmental Impact Type Wastewater Treatment and Resource Circulation System Dissemination Project Utilizing Anaerobic Aerobic Filter Method (A2F) in Fiji

Implementation Systems

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Background

- There are 11 sewage treatment plants in Fiji, but most of them are **simple lagoon type**, and consequently the treated water quality does not satisfy the specified effluent standard, which is why **the sewage treatment method must be improved**.
- Improvement of the sewage treatment is urgently needed **especially in the western region** where Fiji's largest international airport is located and resort facilities are concentrated because; 1) rapid population growth is expected, 2) tourism resources such as beaches must be conserved, 3) more than half of the existing sewage treatment plants are receiving wastewater in excess of the treatment capacity.

Project Outline

- **By applying the Anaerobic Aerobic Filter Method (A2F)**, which is an economical and environmentally friendly sewage treatment system, **the function of the sewage treatment plant will be improved** without expanding the existing site area.
- **By recovering methane gas generated in the A2F treatment process and promoting its use as renewable energy**, a resource recycling society will be created.

[Implementation Content]

1) Feasibility Study

Studying the current state of the target area, cooperation with related organizations, evaluating the project cost

2) Demonstration Test

A2F demonstration test in Fiji, local optimization of the process design

3) Verification of Project Effect and Business Model

Business model construction, verification of future development potential, examination of countermeasures for any arising issues

Location

Viti Levu / Fiji

<Subject of Survey>

- Existing sewage treatment plant
- Island resort, resort hotels
- Sugar mill, food processing factory

<Place of demonstration test>

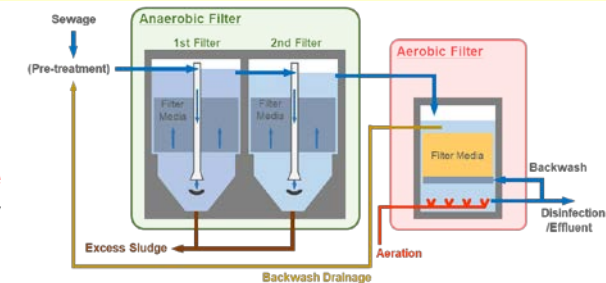
- Navakai sewage treatment plant



Outline of Technology

Anaerobic Aerobic Filter Method (A2F) consists of an anaerobic filter and an aerobic filter. **Stable treatment can be expected** under the high water-temperature conditions in Fiji.

- Good treated water quality
- **Low aeration = energy saving**
- **Low excess sludge production**
- Methane gas is recoverable (**power self-reliance sewage treatment** is theoretically feasible)



Expected Results and Business Prospects

- Expected results: **Prevention of water pollution, reduction of health damage such as water borne infections, preservation of important tourism resources such as beaches, promotion of energy saving sewage treatment**
- Business model: Starting with **the renewal of the existing 4 plants in the western region**, horizontally expand to **other regions in Fiji and neighboring island countries**, and sales to the private sector. In the future, aim to develop a **resource recycling package that includes methane gas recovery and power generation**.