

RENEWABLE ENERGY- WASTE & WASTEWATER TREATMENT INTEGRATED SOLUTIONS FOR ISOLATED SITES

Our added-value



Enviroearth integrates practical, easy-to-use, environmentally friendly turnkey systems,

dedicated to isolated and remote sites, producing green energy, treatment and recycling of wastewater and waste.

Our engineers identify and integrate mature and rugged technologies with low carbon intensity that require lighter infrastructures, low maintenance, little energy and natural resources.



15-years experience of complex projects in remote areas

Tristan Da Cunha Island, Easter Island, Greenland, Kiribati, Kenya, Ivory Coast, Juan Fernandez Archipelago, Paraguay,...

Our field engineers are used to working in the most remote places in the world, on inhabited or uninhabited sites that are disconnected or connected to unreliable electrical grids.

Anticipation and risk control, responsiveness, adaptability, diplomacy and listening skills.



Tailored made solutions for:

From design to implementation, we involve and coordinate technical experts and civil works onsite installation.

Providing our customers with an integrated plan and taking in charge the overall project implementation and maintenance for various applications:

- Military Camps
- Mining and Scientific life bases,
- Hotel and resorts,
- Refugee camps and disaster management

Decentralized and stand-alone turnkey units

The energy needs of displaced people in camps are those related to cooking, heating, lightning or even emergency medical purposes. In most camps or remote locations, access to energy and wastewater treatment or waste management are very limited or totally absent. Enviroearth a specialist of isolated sites has **developed turnkey containerized concept based on low carbon technologies and adapted to rugged and harsh environment** particularly in developing countries.

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Modular Hybrid Energy Containers

Based on transportable shipping containers (8, 10 or 20ft) the unit includes a **complete Solar Photovoltaic System** (from 0.6 kWp to 10.8kWp) on adjustable support structure **installed on the roof**. **Solar Charge controller, battery pack storage** for autonomy according size, Inverter/charger are fixed inside the container.

To assure a back-up, an **optional built-in diesel generator** (single or three-phase) **with an integrated tank for fuel** can be included. **Manual or automatic transfer switch** between solar and conventional energy can be operated.

Simple to operate and maintain, the modularity allows to easily expand the power plant who is delivered with energy monitoring remote control system. With these solutions Enviroearth can help its clients in isolated sites to minimize their resource and energy consumption while maximizing security of supply.

Domestic wastewater treatment and recycling

Enviroearth made the choice to integrate, low operation and maintenance, innovative technologies really adapted to the harsh local conditions in isolated sites; Two different technologies to be chosen according local need and conditions, have been tested to be easily deployed onsite, generating no sludge, neither odor and with zero discharge into the environment, being able to turn wastewater



into reusable water for the sanitary, the irrigation, or even soilless agriculture.

Bamboo for water

Bamboo plants have a very high water filtering capacity: It permits degrading and removing naturally organic polluting elements thanks to bacteria present in the roots of bamboo; their high density make them **very effective filters**. The process is nowadays **patented** and installed within various countries and climate, it's well **adapted to tropical areas**.

Extensive solutions with existing soils require from 5 to 10 m² soil surface per PE. **Intensive solutions with assembled material and soils** requiring from 1 to 2.5 m² per PE. Bamboo WWTP is well adapted to local communities and it contributes to create jobs related with the crop of bamboo and the recovery of biomass resulting from the bamboo field growth.

Bio-Solar water Purification (BSP)

BSP technology intensifies ecosystem services taking place at **air/water interface in enclosed tubular systems enabling solar light penetration, organic compounds oxidation and the removal of hazardous substances and microbial contaminants transferred into microalgae biomass.**

Microalgae, while growing fast in nutrient-rich wastewaters illuminated by sun rays, produce oxygen ensuring photo-oxidative



degradation of hazardous substances and microorganisms. **BSP technology doesn't include any evaporation or concentration step.** Gaseous carbon dioxide, that is the only reagent required, can be provided from aerobic wastewater pretreatment (underground tank); **Highly dedicated for hot and dry climate.** Easy to install on site, with tubes on soil. Container version under request.

Both technologies required low energy consumption, limited fluidic system and Civil Works. They can be easily implemented in isolated sites partially using local material reducing capital cost.

Waste Management

It is essential on such isolated site to implement waste collection, separation and disposal; Reuse & recycle will be prioritized over other alternatives for being the most efficient options. Material separation for PET, plastic, glass, metal, paper, cardboard is essential and possible via information and colour containers to be implemented.

Compaction or some way of volume reduction will always be performed before going to Landfill; and inertization before hazardous disposal at special areas; Composting of organics be quite easily introduce with **Compost'Air®** consisting of a set of **juxtaposed trays having an automated ventilation system** for an aerobic composting with no odor and good quality compost.