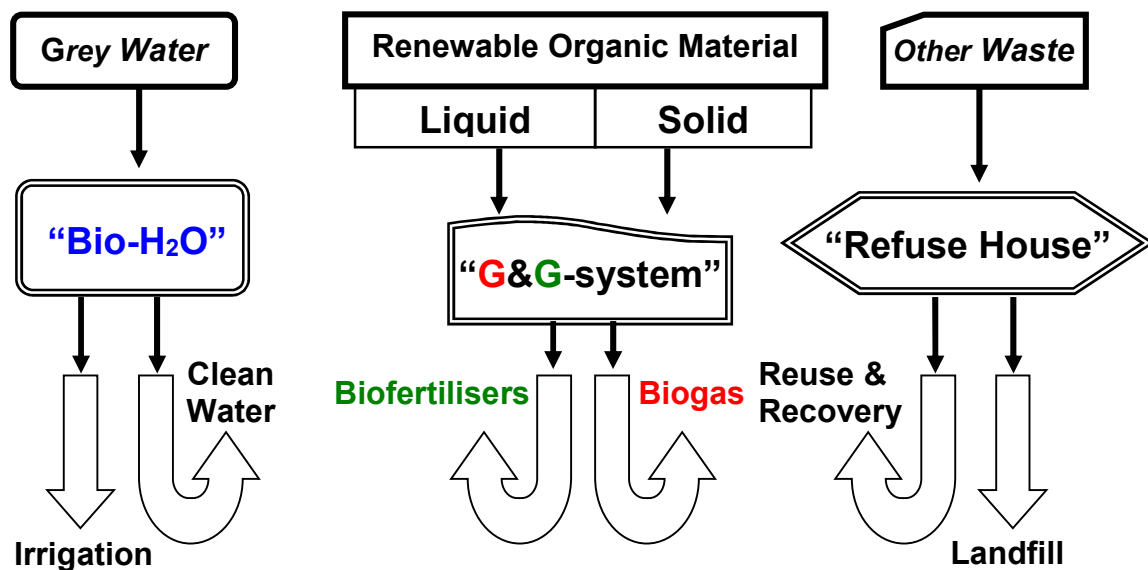


## Concept SOLIWA

for the integrated waste and wastewater “at source” management of solid and liquid waste/residues in closed local system.



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## Description of SOLIWA

### “Bio-H<sub>2</sub>O”

Grey water is cleaned biologically. About 15 per cent less water will be polluted, as human excreta is collected in novel toilets. The cleaned grey water can be reused for irrigation or for other purposes.

### “G&G-system”

An efficient batch system for bioconversion of ROM into biogas and biofertilisers. Raw materials for bioconversion are taken from renewable organic solid<sup>1</sup> and liquid<sup>2</sup> waste from households, from central markets, from the food and feed industry, slaughterhouses as well as from forestry, agri- and horticulture. Fuel crops mixed with other materials can also be used.

A mixture with a high content of dry matter is treated in a three-step process of bioconversion. Firstly, aerobic, then anaerobic and finally aerobic transformation is carried out in a new kind of closed bioreactors connected to a bio filters. The contents of the bio filters are reused in the process.

The biogas produced in the anaerobic step is converted into electricity and heat, used as fuel for vehicles, or both. Part of the electricity is used for equipment in the system.

Biofertilisers, adjusted for cultivation needs, contain energy rich organic structures, plant nutrients and beneficial microorganisms. Structures are important for soil organisms and as CO<sub>2</sub> sinks. The content and quality of biofertilisers can be modified with respect to needs of crops and the state of the soil.

### “Refuse House”

Mixed waste of inorganic and non-renewable materials such as glass, plastic, metal and toxic waste are sorted, and then handled by specialists for reuse, recovery, destruction or burying on landfills.

<sup>1</sup> Solid organic wastes can be dry or wet. Examples of dry organic materials are: paper, paper packages, straw, wood and wooden residues, bark, dry leaves. Examples of wet organic materials are: food residues, grass clippings, weed plants and crop residues. In today's Western Europe, household waste is being generated at a rate of over 1kg per person per day. *In Sweden 76 per cent are of organic origin (REFORSK, 1998)!*

<sup>2</sup> Liquid organic waste is both from human and animal excreta. Human excreta in developed countries averages 1.2 kg per person per day. *In Sweden, human excreta is diluted with 200 to 550 litres of wastewater per day!*