



SMART-Plant

Scale-up of low-carbon footprint
material recovery techniques in existing
wastewater treatment plants



AAT

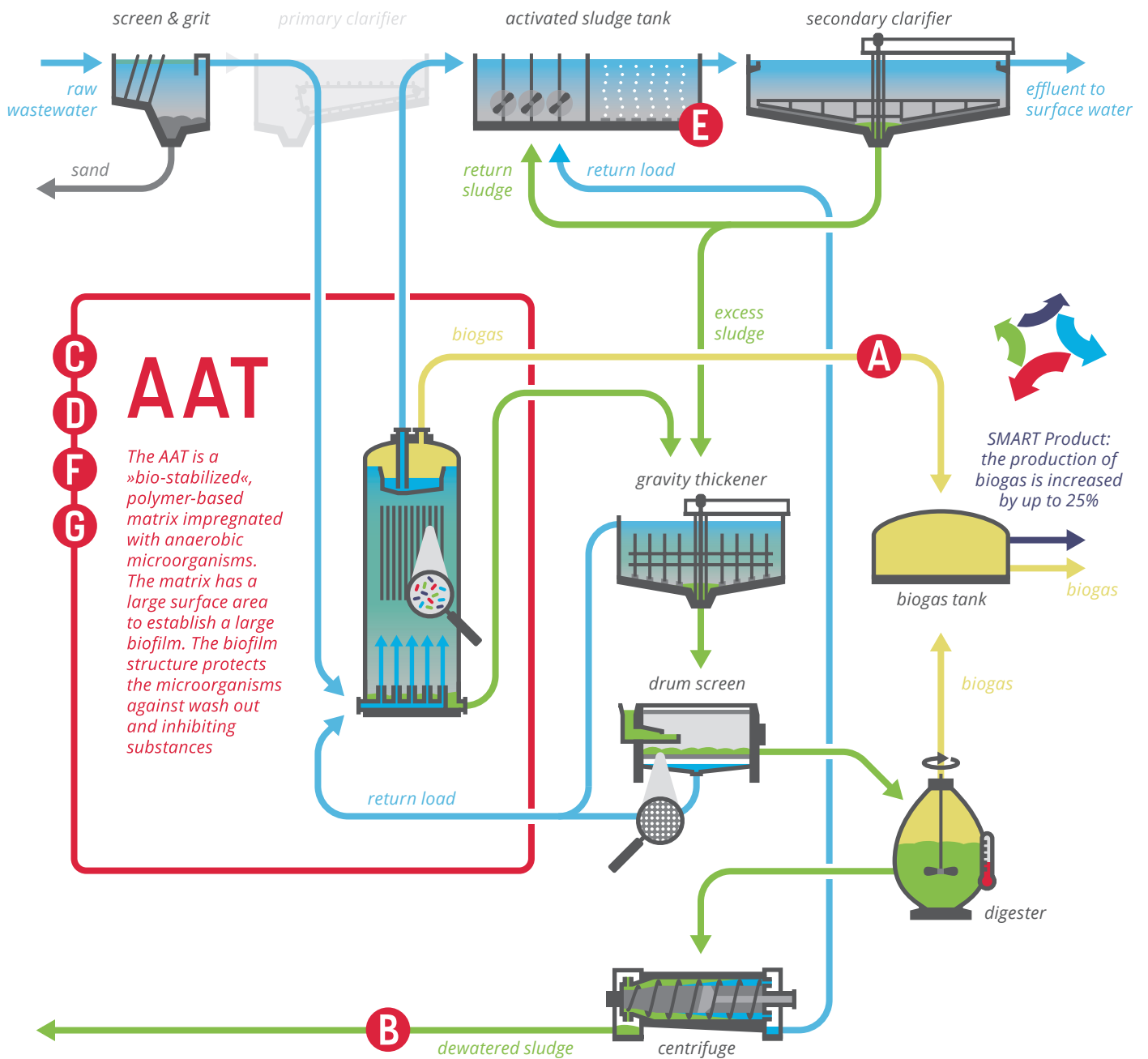
Biogas Recovery in Primary Treatment with Polyfoam Biofilter

AgRobics has developed a patented anaerobic biofilter (AAT) that transforms wastewater into renewable energy. The system combines high COD and TSS removal as well as biogas production and is installed upstream of the aerobic treatment step. It decreases the organic load of the sewage by 30%, which results in a reduction of the energy consumption of the biological stage by 30% and an increase of the biogas production by 25%. An integrated polymeric based immobilization matrix acts as a surface for the attachment of a biofilm, which prevents biomass losses and allows high biomass concentrations.

Within the SMART-Plant project, a demo system with a reactor volume of 25 m³ with the aim to treat 100-120 m³/d of sewage was installed at the municipal wastewater

treatment plant of Karmiel (Israel). This plant has special challenges due to organic-load peaks (e.g. fat and olive mill residuals) from a slaughterhouse and olive mill wastewater and can serve as a representative model of many treatment plants in warm regions.





Unique Selling Points

- A** Production of biogas as renewable energy
- B** Reduction in the amount of biological sludge and the associated disposal costs
- C** Small reactor size due to fast reaction speed and short hydraulic retention time
- D** Low energy consumption
- E** Reduction of the organic load entering the biological stage of the WWTP and less energy costs for aeration
- F** High process stability towards high contamination levels (for example solids, salts, fats, toxins and oils) and irregular organic loads
- G** Simple operation