COGENERATION.

Cogeneration is the process through which we simultaneously obtain useful electrical and thermal energy (steam, hot water,..)

The great advantage offered by cogeneration is the energetic efficiency that may be obtained. This refers to the useful energy extracted from the theoretical primary chemical energy produced by the fuel employed.

By generating energy through a dynamo or an alternator, moved by a thermal motor or a turbine, the benefit from the chemical energy of the fuel is only from 25% to 40%, the rest dissipates in the form of heat employed in the anaerobic digestion. UIT cogeneration a large part of this thermal energy is recuperated before it cam disperse in the atmosphere.

Figura 1. Motor generator

In wastewater treatment stations, the fuel employed in the motor generators is usually biogas. This is produced in the anaerobic digestion where sludge is stabilized by reducing the organic material content and eliminating the pathogenic microorganisms it contains. The biogas produced usually contains between 65-70% CH_4 by volume.

For correct performance levels in the anaerobic digestion, sludge temperature should be between 35-37ºC. This means we need to heat it from the 18-22 ºC at which biological sludge normally is. To do so we use hat water produced by the motor generators.