



Longreach Sewage Treatment Works

# LONG REACH

Kent, UK

## FACTSHEET



### Plant capacity and expected performance:

- B6-3 Cambi THP
- Thermally hydrolyzed Secondary sludge mixed with raw primary sludge
- Multi -phased digestion
- THP steam from Waste Heat only
- 3 MWs electricity
- Cake to agriculture

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## LONG REACH, UK

The Long Reach project is a first of its kind in the UK. Thames water have selected AECOM as main contractor with Cambi as its specialist sub-contractor to build an upgrade to its sludge digestion plant in at Long Reach STW, in NW Kent. The plant has sewage treatment design capacity for 840,000 people equivalent and digests its sludge for use in agriculture as a fertiliser

The aim of the project is to make the site more self-sufficient in energy, and to produce a lower volume of final biosolids that can meet a higher treated standard and that has superior storage qualities without building further digesters. To do this Thames devised a system of hydrolysing mainly the secondary sludge from the treatment process and feeding this in admixture to the existing digesters. This has a number of advantages:

- the volume of digester feed is reduced to about 70% of current volume therefore extending the digestion time;
- the effect of Cambi's thermal hydrolysis process (THP) will make the sludge much more digestible and thus produce more biogas;
- the dewaterability of the agricultural product will increase reducing final quantities by about 1/3 and increasing final product quality;
- the THP system will operate on waste heat from two 1MW Caterpillar engine generators that will supply the heat for the THP process that in turn will be mainly responsible for the digester heating.

Thames Water has tested this system rigorously in their research labs and in addition has devised a system of serial digestion that will dramatically reduce the pathogen content of the sludge. At full scale this will comprise feed the mixed heated sludge to a bank of existing primary digesters and then over spilling in series to 3 of the existing digesters in turn to give an extended period of pathogen die off and secondary biogas production. The THP system will comprise a second generation Cambi B6 x 3 continuous batch system that is extremely compact and that can be assembled on site in a matter of days. The system is designed to operate on steady steam consumption from the engine waste heat boilers

### The benefits of the Cambi process are:

- High VS and dry solids destruction
- 30-33% cake solids in the final product
- 3 MW electricity & THP steam
- Very high digester loading rate and 2-3 times increased digester yield
- Very energy efficient heat treatment
- Cake production decreased to nearly half
- reducing final quantities by about 1/3 and increasing final product quality



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