

Costing parameters:									
ELT (civil) =	30	years	m_civ =	1,0%	% of civ.CAPEX	Cost level	Medium	default	
ELT (rest)	15	years	m_m&ei =	2,0%	% of mei. CAPEX	Cps =	773	773	eur/m3
ic =	6%		n (insurance)	0,30%	% of CAPEX	Cuasb =	824	824	eur/m3
ai,n civil =	13,76	ann. civil	Cel =	0,15	eur/Kwh	Cab =	268	268	eur/m3
ai,n mei =	9,71	annual. M&EI	Csd =	500	eur/ton TSS	Cd =	464	464	eurm3
ratio euro/us\$	1,3		Cch4 =	0,35	eur/m3 nat. gas	Cth =	876	876	eur/m3
year	2007		Cdl =	0	eur/IE	Cdi =	824	824	eur/m3
inflation %	3%		tperson =	2,0%	% of CAPEX	Cae, surf =	5923	5923	euro/kW inst.
cum. infl %	1,03		fop =	1,0%	% of CAPEX	Cae, dis.aer =	7983	7983	euro/kW inst.
			Pb (avg)	48	kW	Cgen =	3863	3863	euro/kW gen.
			MEt	474	kg TSS/d	fac =	1,45	1,45	(-)
			IE effluent	2784	IE	fi =	1,75	1,75	(-)
			Qch4 (avg)	33	Nm3/d	fciv =	40%	40%	
						fmech =	35%	35%	
						fei =	25%	25%	

Cost of main treatment units (cost per unit volume)				Annual cost	Total costs	Cost per m3 treated	Costs per PE
Volume primary settler	0	€	- USD	-			
Volume UASB	0	€	- USD	-			
Volume aeration tank	3603	€	960.000 USD	1.248.000			
Installed power aeration	71	€	420.000 USD	546.000			
Volume final settler	1460	€	680.000 USD	884.000			
Volume thickener	83	€	70.000 USD	91.000			
Volume digester	482	€	400.000 USD	520.000			
Installed power generation	69	€	270.000 USD	351.000			
Subtotal main treatment units		€	2.800.000 USD	3.640.000			
Construction costs other treatment units		€	1.260.000 USD	1.638.000			
Additional project costs		€	2.100.000 USD	2.730.000			
Total CAPEX		€	6.160.000 USD	8.008.000			
- civil costs		€	2.460.000 USD	3.198.000			
- mechanical costs		€	2.160.000 USD	2.808.000			
- PC and E&I costs		€	1.540.000 USD	2.002.000			
					Investment costs:		Calculation method used
					- total	€ 6.160.000 USD 8.008.000	Cost per unit volume
					- civil	€ 2.460.000 USD 3.198.000	
					- mech/E&I	€ 3.700.000 USD 4.810.000	
					Ann. Investm. costs civil	€ 180.000 USD 234.000	€ 0,16 USD 0,21
					Ann. Investm. costs mech/EI	€ 380.000 USD 494.000	€ 0,34 USD 0,44
					Total ann. Investm. costs	€ 560.000 USD 728.000	€ 0,50 USD 0,65
					Operational costs:		
					Maintenance costs	€ 99.000 USD 129.000	€ 0,09 USD 0,11
					Insurance costs	€ 18.000 USD 23.000	€ 0,02 USD 0,02
					Operator costs	€ 123.000 USD 160.000	€ 0,11 USD 0,14
					Operational costs	€ 62.000 USD 81.000	€ 0,06 USD 0,07
					Aeration costs	€ 63.000 USD 82.000	€ 0,06 USD 0,07
					Energy costs (heating)	€ 4.000 USD 5.000	€ 0,00 USD 0,00
					Discharge levies	€ - USD -	€ - USD -
					Sludge disposal	€ 86.000 USD 112.000	€ 0,08 USD 0,10
					Total operational costs:	€ 455.000 € 592.000	€ 0,41 USD 0,53
					Total annual costs:	€ 1.015.000 USD 1.319.500	€ 0,90 USD 1,17