



biomass technology group

Biomass consultants, researchers and engineers

BTG Biomass Technology Group BV is a private firm of consultants, researchers, and engineers, operating worldwide in fields of sustainable energy production from biomass and waste

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**Costa Rica – Anaerobic treatment plants for coffee waste water**

Type of project: Design, implementation, technical assistance and capacitation  
Location: Central Valley of Costa Rica. Metropolitan area (San Ramón – Cartago)  
Project period: 1997 – 2001  
Clients: Coffee processing companies: Beneficio San Juanillo, Beneficios Volcafé (Costa Rica), Coope Libertad R.L., Coopro Naranjo R.L., Coope Jorco R.L., Beneficio San Antonio S.A., Beneficiadora Santa Eduvigis S.A.  
Co-financing: Ministry of Development Cooperation, The Netherlands Fundecooperaci’  
Partners: Amanco Costa Rica  
Costarican Coffee Institute  
Total project costs: US\$ 2,500,000

**Project description**

In the mid-nineties, the Costariccan government forced the coffee sector to incorporate a waste water treatment system in their processing plants. An anaerobic treatment system was identified as one of the most appropriate technologies: apart from an efective biological treatment, the system leads to production of biogas, a clean renewable fuel that can be used to generate electricity and/or heat.

After the successful implementation and operation of a demonstration plant at Beneficio San Juanillo, Naranjo in 1997, similar treatment systems were implemented at eight other coffee processing plants. Since their start-up, the plants are in good condition and show excellent operational results.

Client	Technical aspects coffee company				System specifications		
	Processing capacity (fan/day)	Water consumption (m3/fan)	Contami- nation (kg COD/fan)	Treatment capacity (kg COD/day)	Reactor volume (m3)	Maximal biogas product. (m3/dia)	Electricity generation capacity (kW)
Coope Jorco	1,400	0.7	7.0	5,000	500	1,500	-
Coope Libertad	2,800	0.5	8.0	15,000	1,500	4,000	281
Coopro Naranjo	3,600	0.4	6.0	15,000	1,500	4,000	-
Pilas	1,500	0.3	4.2	5,000	750	2,250	-
San Antonio	1,500	0.6	6.7	10,000	1,000	2,500	219
San Diego	1,200	0.6	6.5	5,000	750	1,500	-
San Juanillo	650	0.6	10.0	5,000	500	1,100	62
Sta Eduvigis	1,200	0.8	8.0	7,500	750	2,250	-

