

TE-Ch7_Cost-Allocation-Cogen-Ex-7-1-Residual-value.xls
Example 7-1ResidualValue GT CHP

Item		Unit	Value
Power balance			
Electrical output, net	P_e	kW _e	4,985
Thermal output	P_Q	kW _t	7,510
Fuel Input	$\eta=88\%$	kW _f	14,199
Annual energy balance			
Full load hours		h / a	7,000
Electricity generation *)		MWh _e / a	34,895
Heat generation	Q_t	MWh _t / a	52,570
Fuel consumption	Q_f	MWh _f / a	99,392
Financial constraints			
Gas price in LHV		€ / MWh _f	25.00
Electricity generation price, flat tariff, 220 kV grid		€ / MWh _e	50.00
Use of system fees **)			
Capacity price		€ / (kW _e *a)	55.00
Energy price		€ / MWh _e	8.00
Annual production costs, total C			
Fixed costs ***)	C_{fixed}	th. € / a	880.0
Variable cost (Fuel costs)	C_{fuel}	th. € / a	2,484.8
Subtotal		th. € / a	3,364.8
Electricity credit CC (avoided purchase cost)			
Costs of electricity from grid	CC_{gen}	th. € / a	1,744.8
Use of system costs:			
capacity costs	CC_{fixed}	th. € / a	274.2
energy costs	CC_{energy}	th. € / a	279.2
Electricity credit, total		th. € / a	2,298.1
Electricity credit, specific		€ / MWh _e	65.86
Residual costs of heat			
Capacity cost	$(C_{fixed} - C_{fixed})/P_Q$	€ / (kW _t *a)	80.67
Energy cost	$(C_{fuel} - CC_{gen} - CC_{energy})/Q_t$	€ / MWh _t	8.77
composite heat cost		€ / MWh_t	20.29
Generation cost of HOB ****)	85%	€ / MWh_t	29.41

*) full cogeneration, no bypass operation

***) annualized CAPEX + O&M costs)

***) cost for transmission & distribution

****) for comparison only



