

DATA INPUT SHEET FOR POWER GENERATION

SAMPLE REPORT IN ENGLISH

MIXED WASTE 35% ORGANIC- 65% MIXED,1,20,20,5,4,5,10

ENGLISH

select language and measure

INPUT VALUE

UNIT OF MEASURE

English

Metric



IC GEN SETS OPERATING COSTS

SAMPLE REPORT IN ENGLISH

MIXED WASTE 35% ORGANIC- 65% MIXED,1,20,20,5,4,5,10

PEG MODEL WITH MATCHING GEN SET			LIFE CYCLE COST					LIFE CYCLE COST
			MODEL 600FBG-N	MODEL 1000FBG-N	MODEL 400FXG-N	MODEL 200FXG-N	MODEL 5600DSBG-N	
LOADING CAPACITY MAXIMUM	CUBICA METER		8	12	4	2	85	
RATED CAPACITY, POTENCIA TERMICA (kg/HR)	AT 90% LOADING		2,808	4,212	1,404	702	29,835	
AVERAGE KWH CONSUMED PER HOUR			800	1200	600	450	7200	
ELECTRICITY COST PER KWH			\$0.14	\$0.14	\$0.14	\$0.14	\$0.14	
WATER COST PER KL, COSTO DEL AGUA EN KL			\$0.02	\$0.02	\$0.02	\$0.02	\$0.02	
SEWER COST PER KL, COSTO DE ALCANTARILLA EN KL			\$0.00	\$0.00	\$0.00	\$0.00	\$0.00	
MAINTENANCE COST, YR 2-6	FIXED CONTRACT		\$275,000	\$345,000	\$200,000	\$125,000	\$695,000	
ANNUAL HOURS OF OPERATION			8721	8721	8721	8721	8721	
ANNUAL PROCESS TIME			8358	8358	8358	8358	8358	
ANNUAL MATERIAL PROCESSED	PER/POR KILOGRAM		23,468,211	35,202,317	11,734,106	5,867,053	249,349,742	
CURRENT WASTE PROCESSING COST			\$0	\$0	\$0	\$0	\$0.00	
ANNUAL ELECTRICAL COST WITHOUT GEN SET			\$0	\$0	\$0	\$0	\$0	
ANNUAL WATER COSTS			\$24	\$24	\$24	\$24	\$24	
ANNUAL SEWER COSTS			\$0	\$0	\$0	\$0	\$0	
ANNUAL MAINTENANCE COSTS	MATERIAL and LABOR		\$275,000	\$345,000	\$200,000	\$125,000	\$695,000	
PLASMA PROCESS COST			\$275,024	\$345,024	\$200,024	\$125,024	\$695,024	
OPERATORS, STAFF, AND MGMT	NUMBER OF SHIFTS							
LABOR FOR SUPERVISOR	3		\$106,392	\$159,588	\$79,794	\$59,846	\$957,528	
LABOR FOR OPERATORS	4.19		\$200,583	\$300,875	\$150,437	\$112,828	\$1,805,247	
VARIABLE OPERATION AND PROCESS COST			\$581,999	\$805,487	\$430,255	\$297,698	\$3,457,799	
ANNUAL DEPRECIATION COST	SECT. 49.5 CLASS	8	\$978,663	\$1,246,375	\$723,488	\$481,293	\$5,048,188	
ANNUAL FINANCING COST	INTEREST 8.00%		\$494,656	\$622,096	\$375,240	\$220,235	\$2,177,336	
TANGIBLE ASSET TAX			\$0	\$0	\$0	\$0	\$0	
TOTAL FIXED ASSED COST			\$1,473,319	\$1,868,471	\$1,098,728	\$701,528	\$7,225,524	
TOTAL UNIT AND OPERATING COST			\$2,055,318	\$2,673,958	\$1,528,983	\$999,225	\$10,683,323	
SAVINGS OVER CURRENT PROCESSING COST			\$0	\$0	\$0	\$0	\$0	
ESTIMATED CAPITAL COST FOR PLASMA UNIT ONLY			\$6,183,200	\$7,776,200	\$4,690,500	\$2,752,940	\$27,216,700	
ESTIMATED CAPITAL COST FOR BUILDING			\$186,000	\$186,000	\$0	\$0	\$720,000	
ESTIMATED CAPITAL COST FOR TURBINE-IC/ GEN SET			\$1,646,100	\$2,194,800	\$1,097,400	\$1,097,400	\$13,168,800	
ESTIMATED CAPITAL COST PER MODEL SPECIFICATION			\$7,829,300	\$9,971,000	\$5,787,900	\$3,850,340	\$40,385,500	



GENERATOR SETS PRODUCTION

SAMPLE REPORT IN ENGLISH

MIXED WASTE 35% ORGANIC- 65% MIXED,1,20,20,5,4,5,10

PEG MODEL

MODEL 600FBG-N

MODEL 1000FBG-N

MODEL 400FXG-N

MODEL 200FXG-N

MODEL 5600DSBG-N

PLASMA GAS USED IN PROCESS	NITROGEN	NITROGEN	NITROGEN	NITROGEN	NITROGEN
EFFICIENCY	90%	90%	90%	90%	90%
BTU/KCAL FROM PROCESS GAS	PER HOUR	60,046,272	90,069,408	30,023,136	15,011,568
USABLE BTU/KCAL FROM PROCESS GAS	PER HOUR	55,843,033	83,764,549	27,921,516	13,960,758
BTU/KCAL GAS LOSS IN PROCESS	5%	(2,792,152)	(4,188,227)	(1,396,076)	(698,038)
NET PROCESS EFFICIENCY FOR FUEL GAS PRODUCTION		79.52%	79.52%	79.52%	79.52%
FUEL GAS PRODUCTION BTU/KCAL VALUE		53,050,881	79,576,322	26,525,441	13,262,720
FUEL GAS GENERATION CF PER HOUR		132,627	198,941	66,314	33,157
MCF OF GENERATED GAS PER HOUR		133	199	66	33
VALUE OF GAS GENERATED PER MCF	\$1.23	\$163	\$245	\$82	\$41
ANNUAL VALUE OF SYN GAS GENERATED		\$1,363,392	\$2,045,087	\$681,696	\$340,848
ELECTRICAL GENERATION DESIGN RATING IN KWH		12000	17500	6000	3000
ELECTRICAL GENERATION FOR OPERATION OF PLASMA PROCESS IN KWH		800	1200	600	450
AVERAGE KW OF GENERATED POWER PER HOUR	4,556	11,644	17,466	5,822	2,911
OF PROCESSING HEAT RATE VALUE USED IN					
TOTAL ANNUAL KWH OF GENERATED POWER		97,317,685	145,976,527	48,658,842	24,329,421
ANNUAL KWH USED IN PROCESS		6,686,100	10,029,150	5,014,575	3,760,931
NET KWH FOR RESALE OR BACK TO GRID		90,631,585	135,947,377	43,644,267	20,568,490
SELL PRICE OF POWER	\$0.1400				
DESIGN CAPACITY IN MW		12.0	17.5	6.0	3.0
VALUE OF POWER PER HOUR		\$1,630.19	\$2,445.28	\$815.09	\$407.55
ANNUAL ELECTRICAL SURPLUS PRODUCTION VALUE		\$12,688,422	\$19,032,633	\$6,110,197	\$2,879,589
FIXED RELATED COST INPUT AMOUNT		\$0	\$0	\$0	\$0
FIXED RELATED INCOME INPUT AMOUNT		\$0	\$0	\$0	\$0
WASTE PROCESSING SAVINGS OR COST OFFSET		\$0	\$0	\$0	\$0
ANNUAL POWER GENERATION UNIT AND OPERATING COST		\$581,999	\$805,487	\$430,255	\$297,698
TOTAL INCOME less WASTE SAVING (INCOME)		\$12,106,423	\$18,227,146	\$5,679,942	\$2,581,891
NET INCOME FROM OPERATIONS		\$12,106,423	\$18,227,146	\$5,679,942	\$2,581,891

LIFE-CYCLE COST COMPARISON PLASMA VS. CURRENT

MODEL 600FBG-N	Year	1 2021	2 2022	3 2023	4 2024	5 2025	6 2026
CURRENT ENERGY COST OR WASTE PROCESSING COST		\$0	\$0	\$0	\$0	\$0	\$0
Initial Installation Costs		\$0					
FIXED WASTE PROCESSING Costs		\$0	\$0	\$0	\$0	\$0	\$0
Labor cost for current operations NOT INCLUDED		\$0	\$0	\$0	\$0	\$0	\$0
OTHER COST NOT IDENTIFIED		\$0	\$0	\$0	\$0	\$0	\$0
CURRENT ENERGY INCOME		\$0	\$0	\$0	\$0	\$0	\$0
CURRENT WASTE INCOME		\$0	\$0	\$0	\$0	\$0	\$0
(Costs to Own and Operate) Subtotal:	(INCOME)	\$0	\$0	\$0	\$0	\$0	\$0
Current Material Operating Cash Flow (Before Tax NPV)	\$0						

PEAP PLASMA PROCESS COST		\$24	\$25	\$25	\$26	\$26	\$27
Initial Installation Costs Amortized	8 YEARS	\$978,663	\$978,663	\$978,663	\$978,663	\$978,663	\$978,663
Energy Costs		NA	NA	NA	NA	NA	NA
Labor Cost for Plasma System		\$306,975	\$313,115	\$319,377	\$325,764	\$332,280	\$338,925
Maintenance Cost		\$275,000	\$275,000	\$275,000	\$275,000	\$275,000	\$275,000
ENERGY INCOME		-\$12,688,422	-\$12,942,190	-\$13,201,034	-\$13,465,055	-\$13,734,356	-\$14,009,043
WASTE INCOME		\$0	\$0	\$0	\$0	\$0	\$0
(Costs to Own and Operate) Subtotal:	(INCOME)	(\$11,127,760)	(\$11,375,389)	(\$11,627,970)	(\$11,885,602)	(\$12,148,388)	(\$12,416,429)
Proposed Plasma Operating Cash Flow (Before Tax NPV)	\$135,117,519						

NPV Savings OR Cost over 15 years	\$7,829,300	Inflation Rates			Energy	
	\$135,117,519	NPV Discount Rate - "Hurdle Rate"			5.0%	Cur
	NA	Ops, Maint, Repairs, Labor Costs			2.0%	
		Conventional and Energy Costs			2.0%	Percent

WASTE WITH ELECTRICAL GENERATION

7 2027	8 2028	9 2029	10 2030	11 2031	12 2032	13 2033	14 2034	15 2035
\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0
\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0
\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0
\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0
\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0
\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0
\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0
\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0

\$27	\$28	\$28	\$29	\$29	\$30	\$31	\$31	\$32
\$978,663	\$978,663	\$978,663	\$978,663					
NA	NA	NA	NA	NA	NA	NA	NA	NA
\$345,704	\$352,618	\$359,670	\$366,864	\$374,201	\$381,685	\$389,319	\$397,105	\$405,047
\$275,000	\$275,000	\$275,000	\$275,000	\$275,000	\$275,000	\$275,000	\$275,000	\$275,000
-\$14,289,224	-\$14,575,008	-\$14,866,509	-\$15,163,839	-\$15,467,115	-\$15,776,458	-\$16,091,987	-\$16,413,827	-\$16,742,103
\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0
(\$12,689,830)	(\$12,968,700)	(\$13,253,148)	(\$13,543,284)	(\$14,817,885)	(\$15,119,743)	(\$15,427,638)	(\$15,741,691)	(\$16,062,024)

Energy Cost Savings Comparison (15 yrs)

Waste Treatment Processing Cost OR (Income)	\$0
Plasma Energy Cost OR (Income)	(\$200,205,480)
Net Costs Savings OR LOSS	NA

LIFE-CYCLE COST COMPARISON PLASMA VS. CURRENT

MODEL 5600DSBG-N		Year	1 2021	2 2022	3 2023	4 2024	5 2025	6 2026
CURRENT ENERGY COST OR WASTE PROCESSING COST			\$0	\$0	\$0	\$0	\$0	\$0
Initial Installation Costs			\$0					
FIXED WASTE PROCESSING Costs			\$0	\$0	\$0	\$0	\$0	\$0
Labor cost for current operations NOT INCLUDED			\$0	\$0	\$0	\$0	\$0	\$0
OTHER COST NOT IDENTIFIED			\$0	\$0	\$0	\$0	\$0	\$0
CURRENT ENERGY INCOME			\$0	\$0	\$0	\$0	\$0	\$0
CURRENT WASTE INCOME			\$0	\$0	\$0	\$0	\$0	\$0
(Costs to Own and Operate) Subtotal:		(INCOME)	\$0	\$0	\$0	\$0	\$0	\$0
Current Material Operating Cash Flow (Before Tax NPV)		\$0						
PEAP PLASMA PROCESS COST			\$24	\$25	\$25	\$26	\$26	\$27
Initial Installation Costs Amortized	8	YEARS	\$5,048,188	\$5,048,188	\$5,048,188	\$5,048,188	\$5,048,188	\$5,048,188
Energy Costs			NA	NA	NA	NA	NA	NA
Labor Cost for Plasma System			\$2,762,775	\$2,818,031	\$2,874,391	\$2,931,879	\$2,990,517	\$3,050,327
Maintenance Cost			\$695,000	\$695,000	\$695,000	\$695,000	\$695,000	\$695,000
ENERGY INCOME			-\$6,110,197	-\$6,232,401	-\$6,357,049	-\$6,484,190	-\$6,613,874	-\$6,746,152
WASTE INCOME			\$0	\$0	\$0	\$0	\$0	\$0
(Costs to Own and Operate) Subtotal:		(INCOME)	\$2,395,789	\$2,328,841	\$2,260,554	\$2,190,902	\$2,119,856	\$2,047,389
Proposed Plasma Operating Cash Flow (Before Tax NPV)		(\$496,687)						
NPV Savings OR Cost over 15 years NPV Percentage Savings (-- LOSS)	\$40,385,500	Inflation Rates					Energy	
	(\$496,687)	NPV Discount Rate - "Hurdle Rate"		5.0%				
	NA	Ops, Maint, Repairs, Labor Costs		2.0%				
		Conventional and Energy Costs		2.0%		Percent		

WASTE WITH ELECTRICAL GENERATION

7 2027	8 2028	9 2029	10 2030	11 2031	12 2032	13 2033	14 2034	15 2035
\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0
\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0
\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0
\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0
\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0
\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0
\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0
\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0

\$27	\$28	\$28	\$29	\$29	\$30	\$31	\$31	\$32
\$5,048,188	\$5,048,188	\$0	\$0					
NA	NA	NA	NA	NA	NA	NA	NA	NA
\$3,111,333	\$3,173,560	\$3,237,031	\$3,301,772	\$3,367,807	\$3,435,163	\$3,503,867	\$3,573,944	\$3,645,423
\$695,000	\$695,000	\$695,000	\$695,000	\$695,000	\$695,000	\$695,000	\$695,000	\$695,000
-\$6,881,075	-\$7,018,696	-\$7,159,070	-\$7,302,252	-\$7,448,297	-\$7,597,263	-\$7,749,208	-\$7,904,192	-\$8,062,276
\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0
\$1,973,473	\$1,898,079	(\$3,227,011)	(\$3,305,451)	(\$3,385,460)	(\$3,467,069)	(\$3,550,310)	(\$3,635,217)	(\$3,721,821)

Energy Cost Savings Comparison (15 yrs)

Current Processing Cost OR (Income)	\$0
Plasma Energy Cost OR (Income)	(\$7,077,454)
Net Costs Savings OR LOSS	NA