

BUSINESS PLAN

Country:

Town:

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**SAMPLE OF A
BUSINESSPLAN**

WASTE TO ENERGY

(in the origin are more detailed infos)

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GENERAL INFORMATION

Country

Town

Name of Company

Address

Contact Person

Phone

E-Mail

Sales Partner

KIND OF INPUT MATERIAL

Certificate (CER) in € **10.00** €/t/CO₂equ

Kind of input material: **MSW (proposed Heating Value: 19 GJ) - Heating Value from Waste Analysis: 14 GJ**

Clean up dumpsites: **YES**

Moisture content: **20.00%**

Inerts (incl. Ash): **10.00%**

Operating Hours: **7,500** hrs./yr.

Gatefee: **5.00** €/ton

Feed in Tarif: **130.00** €/MWh

Input amount: **200,000** t/year

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Drying to 15% =	170,000	tons/year	MSW/t/hr.:	22,67
		Theoretical H _U :	2,380,000	GJ
		=	661,111	MW
		=	88,15	MW _{th}
		Energy Content of Gas =	61,70	MW _{th}
		Required for drying =	1,54	MW
Possible Quantity for BIOMASS	10,000	t/yr	MW _{el} /year	171,562
			KW _{el} /year	171,562,103
MW THERMAL NET	60.16			
MW ELECTRICITY NET	22,87			
Recycling Material		% of input tons/year	tons/year	Revenue €/ton
Glass		1	1,700	10,00
Metal		1	1,700	10,00
PET		2	3,400	10,00
PE		0	0	10,00
PVC		0	0	10,00
Paper/Cardboard		2	3,400	10,00
TOTAL			10,200	Tons/year from Dumpsite

Price Facility: € 114,375,000.00

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EMPLOYEE & SALARY

Payroll periode in Month 12

Shifts 3

	No.units	Total/shift	Gross salary	Payroll/month	Payroll/year
Managing Director	1	1	1,500	1,500	18,000
Managing Assistant	1	1	1,000	1,000	12,000
Shift Supervisor	3	3	900	2,700	32,400
Technican	4	12	900	10,800	129,600
Auxiliary staff	3	9	700	6,300	75,600
Staff administration	1	1	700	700	8,400
Reserve (extension)	3	9	500	4,500	54,000
Consultant	1	1	10,000	10,000	120,000
TOTAL					450,000

START UP COST

	Quantity	€/Unit	TOTAL		
Waste to Energy Facility	1		114,375,000	91,91	%
Baling System Mobil	1	754,000	754,000	0,61	%
Baling System Stationary	0	790,000	0	0,00	%
Project Development			1,500,000	1,21	%
Shipping			2,000,000	1,61	%
START UP COSTS 3 MONTH					
Salaries and Fees		YES	112,500	0,09	%
Buildings-Infrastructure			3,500,000	2,81	%
Engineering Studies			2,000,000	1,61	%
Validation UNFCCC			200,000	0,16	%
Capital Raising		4%	4,977,660		
TOTAL-WITHOUT CAPITAL RAISING			124,441,500	100	%
			AMORTIZATION/YEAR	5.4	

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ERADICATION AND INTEREST CALCULATION

Investment incl. Capital Raising	129,419,160 €	Year	Out.dbt	Interest	Annuity	Debt
		1	129,419,160	5,176,766	11,647,724	122,948,202
Tax Rate of the Country	20%	2	122,948,202	4,917,928	11,388,886	116,477,244
Cost Equity	7%	3	116,477,244	4,659,089	11,130,047	110,006,286
Runtime/Year	20	4	110,006,286	4,400,251	10,871,209	103,535,328
Interest Rate	4%	5	103,535,328	4,141,413	10,612,371	97,064,370
		6	97,064,370	3,882,574	10,353,532	90,593,412
Amount borrowed	129,419,160 €	7	90,593,412	3,623,736	10,094,694	84,122,454
Eradiation	6,470,958 €	8	84,122,454	3,364,898	9,835,856	77,651,496
		9	77.651.496	3.106.059	9.577.017	71.180.538
		10	71.180.538	2.847.221	9.318.179	64.709.580
		11	64.709.580	2.588.383	9.059.341	58.238.622
		12	58.238.622	2.329.544	8.800.502	51.767.664
		13	51.767.664	2.070.706	8.541.664	45.296.706
		14	45.296.706	1.811.868	8.282.826	38.825.748
		15	38.825.748	1.553.029	8.023.987	32.354.790
		16	32.354.790	1.294.191	7.765.149	25.883.832
		17	25.883.832	1.035.353	7.506.311	19.412.874
		18	19.412.874	776.514	7.247.472	12.941.916
		19	12.941.916	517.676	6.988.634	6.470.958
		20	6.470.958	258.838	6.729.796	0

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REVENUES

Est. Rev. of Certificates

Main Producer of Energy	LIGNITE					
Lignite Facility produce	205,875	tCO ₂ e				
Facility produce	62,620	tCO ₂ e				
DIFFERENCE (Est.)	143,254	tCO ₂ e				
	Tons/year					
Gatefee	170,000	MSW		850,000	3.42	%
Recycling	1,700	Glass		17,000	0.07	%
	1,700	Metal		17,000	0.07	%
	3,400	PET		34,000	0.14	%
	0	PE		0	0.00	%
	0	PVC		0	0.00	%
	3,400	Paper Cardboard		34,000	0.14	%
Biomass	10,000	t/yr	10	100,000	0.4	%
Electricity	171,562	MWhr		22,303,073	89,61	%
CER Waste	143,254	tCO ₂ e		1,432,543	5,76	%
CER Dumpsite	10,200	tCO ₂ e		102,000	0,41	%
			TOTAL	24,889,617		

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O & M COSTS

TOTAL SALARY	450,000
Residual Substance Deposition	170,000
Purchase Input Material	0
Service Maintenance	1,779,435
External Audit	200,000
MARKETING	0
FEES	0
ENERGY CONSUMPTION	3,345
OUTSOURCING	
Security	2,000
Tax Advisor	10,000
Advocate	10,000
INSURANCE	1,186,290
RENT	0
R & D	1,000,000
ADMINISTRATION	24,000
OTHER	1,000,000
TOTAL	5,835,070

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PROFIT & LOSS STATEMENT

	YEAR										
	0	1	2	3	4	5	6	7	8	9	10
CASH		24.889.617	26.134.097	27.440.802	28.812.842	30.253.485	31.766.159	33.354.467	35.022.190	36.773.300	38.611.965
EXPANSES		5.835.070	5.951.771	6.070.807	6.192.223	6.316.067	6.442.389	6.571.237	6.702.661	6.836.715	6.973.449
EBDIT		19.054.546	20.182.326	21.369.995	22.620.619	23.937.417	25.323.770	26.783.230	28.319.528	29.936.585	31.638.515
DEPRICIATION											
Buildings		175.000	175.000	175.000	175.000	175.000	175.000	175.000	175.000	175.000	175.000
MSW Facility		5.718.750	5.718.750	5.718.750	5.718.750	5.718.750	5.718.750	5.718.750	5.718.750	5.718.750	5.718.750
Baling		37.700	37.700	37.700	37.700	37.700	37.700	37.700	37.700	37.700	37.700
Other		0	0	0	0	0	0	0	0	0	0
DEPRICIATION		5.931.450	5.931.450	5.931.450	5.931.450	5.931.450	5.931.450	5.931.450	5.931.450	5.931.450	5.931.450
EBIT		13.123.096	14.250.876	15.438.545	16.689.169	18.005.967	19.392.320	20.851.780	22.388.078	24.005.135	25.707.065
Tax		2.624.619	2.850.175	3.087.709	3.337.833	3.601.193	3.878.464	4.170.356	4.477.615	4.801.027	5.141.413
Income after Taxation		10.498.477	11.400.700	12.350.836	13.351.335	14.404.773	15.513.856	16.681.424	17.910.463	19.204.108	20.565.652
TOTAL CASH FLOW	-129,419,160	10.498.477	11.400.700	12.350.836	13.351.335	14.404.773	15.513.856	16.681.424	17.910.463	19.204.108	20.565.652
Credit Installment		-11.647.724	-11.388.886	-11.130.047	-10.871.209	-10.612.371	-10.353.532	-10.094.694	-9.835.856	-9.577.017	-9.318.179
Reserves		0	0	0	0	0	0	0	0	0	0
END CASH BALANCE		-1.149.247	11.814	1.220.788	2.480.126	3.792.402	5.160.323	6.586.729	8.074.606	9.627.090	11.247.473
ROI		-130.568.407	-129.407.345	-128.198.371	-126.939.033	-125.626.757	-124.258.836	-122.832.430	-121.344.553	-119.792.069	-118.171.686

CASH FLOW - CASH FLOW TO INVESTOR

EBIT		13.123.096	14.250.876	15.438.545	16.689.169	18.005.967	19.392.320	20.851.780	22.388.078	24.005.135	25.707.065
Less interest		-5.176.766	-5.176.766	-5.176.766	-5.176.766	-5.176.766	-5.176.766	-5.176.766	-5.176.766	-5.176.766	-5.176.766
Earnings before taxes		7.946.330	9.074.109	10.261.779	11.512.403	12.829.200	14.215.553	15.675.013	17.211.312	18.828.368	20.530.299
Taxes		-1.589.266	-1.814.821	-2.052.355	-2.302.480	-2.565.840	-2.843.110	-3.135.002	-3.442.262	-3.765.673	-4.106.059
Net income	0	6.357.064	7.259.287	8.209.423	9.209.922	10.263.360	11.372.442	12.540.011	13.769.050	15.062.695	16.424.239
Investment by shareholder	0	0	0	0	0	0	0	0	0	0	0
Net cash flow to shareholders	0	6.357.064	7.259.287	8.209.423	9.209.922	10.263.360	11.372.442	12.540.011	13.769.050	15.062.695	16.424.239
NPV at cost of equity	444.994										
Market value of equity	6.357.064										

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WEIGHTED AVERAGE COSTS OF CAPITAL

	Cost of Capital	Proportion of Market Value	Weighted Cost of Capital
Debt after Tax	3,2%	95,3%	3,1%
Equity	7,0%	4,7%	0,3%
Weighted average cost of capital			3,4%

FREE CASH FLOW

	YEAR										
	0	1	2	3	4	5	6	7	8	9	10
EBIT		13.123.096	14.250.876	14.250.876	16.689.169	18.005.967	19.392.320	20.851.780	22.388.078	24.005.135	25.707.065
Taxes		-2.624.619	-2.850.175	-2.850.175	-3.337.833	-3.601.193	-3.878.464	-4.170.356	-4.477.615	-4.801.027	-5.141.413
EBIAT		10.498.477	11.400.700	11.400.700	13.351.335	14.404.773	15.513.856	16.681.424	17.910.463	19.204.108	20.565.652
Investment	-129.419.160	0	0	0	0	0	0	0	0	0	0
Free cash flow	129.419.160	10.498.477	11.400.700	11.400.700	13.351.335	14.404.773	15.513.856	16.681.424	17.910.463	19.204.108	20.565.652
NPV at WACC	440.216.569										

AFTER TAX CASH FLOW FROM LENDERS

Investment		5.176.766	5.176.766	5.176.766	5.176.766	5.176.766	5.176.766	5.176.766	5.176.766	5.176.766	5.176.766
Interest tax shield		-1.035.353	-1.035.353	-1.035.353	-1.035.353	-1.035.353	-1.035.353	-1.035.353	-1.035.353	-1.035.353	-1.035.353
After tax interest		4.141.413	4.141.413	4.141.413	4.141.413	4.141.413	4.141.413	4.141.413	4.141.413	4.141.413	4.141.413
Principal receipt (repayment)	129.419.160										
Principal plus after tax	129.419.160	4.141.413	4.141.413	4.141.413	4.141.413	4.141.413	4.141.413	4.141.413	4.141.413	4.141.413	4.141.413

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CONCLUSION

	YEAR										
	0	1	2	3	4	5	6	7	8	9	10
Cash flow to shareholders	0	6.357.064	7.259.287	8.209.423	9.209.922	10.263.360	11.372.442	12.540.011	13.769.050	15.062.695	16.424.239
After tax cash flows to lenders	-129.419.160	-4.141.413	-4.141.413	-4.141.413	-4.141.413	-4.141.413	-4.141.413	-4.141.413	-4.141.413	-4.141.413	-4.141.413
FREE CASH FLOW	-129.419.160	2.215.651	3.117.874	4.068.010	5.068.509	6.121.947	7.231.029	8.398.597	9.627.636	10.921.281	12.282.826

IRR

Initial Outlay (IO)	124.441.500,00
Annual Cash flow (ACF)	24.889.617,08
IRR	20,00 %

AMORTIZATION - PAY OFF METHODE

MSW Facility	124.441.500,00
Lifetime in years	20
Straight line depreciation	6.222.075,00
Average profit per year (5 yrs.)	29.357.135,20
Average capital return	35.579.210,20
Amortization/year	3,50

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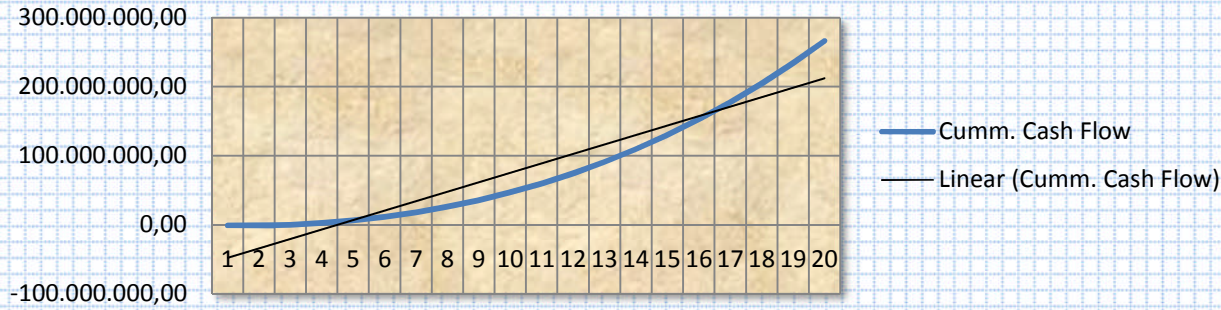
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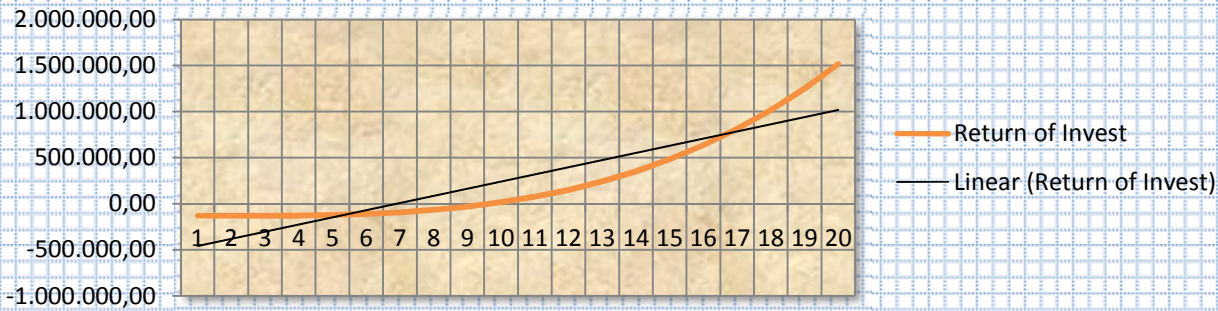
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Cumm. Cash Flow



Return of Invest



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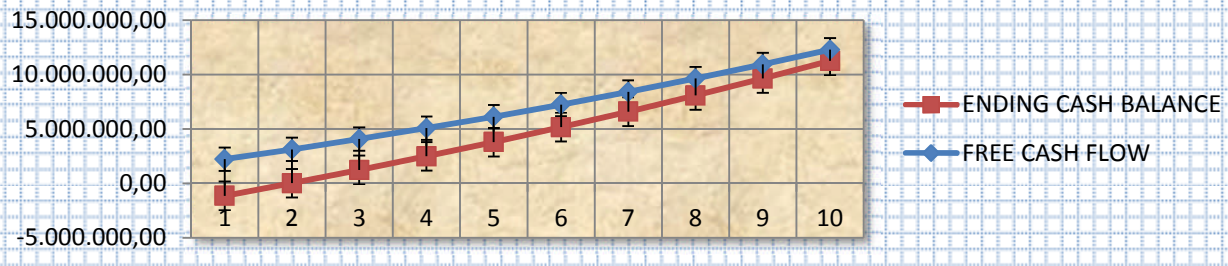
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Comparison Ending Cash Balance and Free Cash Flow



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Sensitivity Analysis

