



PRODUCTION OF ELECTRICITY AND HEAT ENERGY BIOGAS

Investor: XXXXXXXXXXXX

Project Location: Serbia

Currency: EUR

Date Activity: 20.03.2022

Description and Goal of the Investment

The goal of the project is the financial profitability of production and sale of electricity and heat from raw materials from our own property. The plant would function as a separate production and accounting unit within the agricultural estate that deals with the production of corn and the breeding of dairy cows. Input components for biogas production (corn silage and manure) represent a surplus in the needs of livestock nutrition, ie fertilization of own fields. These surpluses (about 10,000 tons of silage and 14,000 tons of manure) have been sold so far, and this analysis should show whether these surpluses can be better valorized than before by external sales, so that the input components of silage and manure in expenditure figure at market prices at which they are now sold. The selling price of electricity is 0.123 EUR / kWh according to the current feed-in tariff. The time of realization of the investment in the first year is 8 months, and in the second 4 months.

The life of the project

Tax of profit

Discount Rate

Realization of Investment in 1st
year

Realization of Investment in
2nd year

Estimation of Future Annual
Inflation

15

20

4

8

4

3

Investment value and investment dynamics

! Items	Invested			Year 1			Year 2		
	Price	Durability	Amortization	Price	Durability	Amortization	Price	Durability	Amortization
	EUR	(Years)	Depreciation	EUR	(Years)	Depreciation	EUR	(Years)	Depreciation
Projects, permits, supervision	30.000	0	0	5.000	0	0	0	0	0
Land	30.000	0	0	0	0	0	0	0	0
Infrastructure	120.000	6	20.000	0	0	0	0	0	0
Heating pipe	0	0	0	300.000	15	20.000	120.000	15	8.000
Buildings	0	0	0	700.000	20	35.000	0	0	0
Technological equipment	0	0	0	1.800.000	15	120.000	0	0	0
Other equipment	0	0	0	200.000	9	22.222	0	0	0
Production start-up costs	0	0	0	60.000	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
Credit processing	0	0	0	0	0	0	0	0	0
Working capital	0	0	0	49.010	0	0	83.390	0	0
Total	180.000	0	20.000	3.114.010	0	197.222	203.390	0	8.000
Total Investment	3.497.400	Working capital turnover ratio		10					

Sources of financing for new investments

	Sources	Year 1	Year 2	Total
Loan	Own capital	1.614.010	103.390	1.717.400
	Amount	1.500.000	100.000	1.600.000
	Repayment	8	5	0
	Grace period	2	0	0
	Interest	4	5	0
	Shareholders	0	0	0
	Donations	0	0	0
	Total	3.114.010	203.390	3.317.400

Loan repayment plan

Year	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15
Interest	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Repayment	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Annuity	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0

Loan in Year 1

Year	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15
Interest	0	0	64.896	55.162	45.038	34.509	23.559	12.171	0	0	0	0	0	0	0
Repayment	0	0	243.360	253.094	263.218	273.747	284.697	296.085	0	0	0	0	0	0	0
Annuity	0	0	308.256	308.256	308.256	308.256	308.256	308.256	0	0	0	0	0	0	0

Loan in Year 2

Year	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15
Interest	0	5.000	4.200	3.360	2.478	1.552	0	0	0	0	0	0	0	0	0
Repayment	0	16.000	16.800	17.640	18.522	19.448	0	0	0	0	0	0	0	0	0
Annuity	0	21.000	21.000	21.000	21.000	21.000	0	0	0	0	0	0	0	0	0

Total loans

Year	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15
Interest	0	5.000	69.096	58.522	47.516	36.061	23.559	12.171	0	0	0	0	0	0	0
Repayment	0	16.000	260.160	270.734	281.740	293.195	284.697	296.085	0	0	0	0	0	0	0
Annuity	0	21.000	329.256	329.256	329.256	329.256	308.256	308.256	0	0	0	0	0	0	0

Operating income and expenses

At current prices (excluding inflation)

Items	Unit of	Unit	Annual volume				Annual amount			
	measure	Price	Year 1	Year 2	Year 3	Next year	Year 1	Year 2	Year 3	Next year
INCOMES		0	0	0	0	0	490.100	1.324.000	1.324.000	1.324.000
Electricity sales	kWh	0,123	2.700.000	8.000.000	8.000.000	8.000.000	332.100	984.000	984.000	984.000
Thermal energy sales	kWh	0,04	2.700.000	5.000.000	5.000.000	5.000.000	108.000	200.000	200.000	200.000
Sale of fertilizers	tons	10	5.000	14.000	14.000	14.000	50.000	140.000	140.000	140.000
		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
EXPENSES		0	0	0	0	0	359.200	695.200	695.200	695.200
Manure	tons	2	14.000	27.000	27.000	27.000	28.000	54.000	54.000	54.000
Corn silage	tons	16	5.000	10.000	10.000	10.000	80.000	160.000	160.000	160.000
Electricity from the grid	Kwh	0,11	220.000	440.000	440.000	440.000	24.200	48.400	48.400	48.400
Gas from the network	SNm3	0,6	20.000	45.000	45.000	45.000	12.000	27.000	27.000	27.000
		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
Gross wages of workers	Number of employees	0	5	12	12	12	0	0	0	0
Average per month	Gross wages	0	700	700	700	700	42.000	100.800	100.800	100.800
Gross management salaries		0	0	0	0	0	20.000	70.000	70.000	70.000
Maintenance		0	0	0	0	0	50.000	80.000	80.000	80.000
Insurance		0	0	0	0	0	3.000	5.000	5.000	5.000
Marketing		0	0	0	0	0	50.000	50.000	50.000	50.000
Other		0	0	0	0	0	50.000	100.000	100.000	100.000
OPERATIONAL RESULT		0	0	0	0	0	130.900	628.800	628.800	628.800

Income statement

Year	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15
INCOMES	490.100	1.324.000	1.363.720	1.404.632	1.446.771	1.490.174	1.534.879	1.580.925	1.628.353	1.677.204	1.727.520	1.779.345	1.832.726	1.887.707	1.944.339
Operating expenses	359.200	695.200	716.056	737.538	759.664	782.454	805.927	830.105	855.008	880.659	907.078	934.291	962.319	991.189	1.020.925
EBITDA	130.900	628.800	647.664	667.094	687.107	707.720	728.952	750.820	773.345	796.545	820.441	845.055	870.406	896.518	923.414
Amortization	85.741	222.555	225.222	225.222	225.222	225.222	225.222	225.222	225.222	225.222	225.222	225.222	225.222	225.222	225.222
EBIT	45.159	406.245	422.442	441.872	461.885	482.498	503.730	525.598	548.123	571.323	595.219	619.833	645.184	671.296	698.192
Interest	0	5.000	69.096	58.522	47.516	36.061	23.559	12.171	0	0	0	0	0	0	0
EBT	45.159	401.245	353.346	383.350	414.369	446.437	480.171	513.427	548.123	571.323	595.219	619.833	645.184	671.296	698.192
Tax of profit	9.032	80.249	70.669	76.670	82.874	89.287	96.034	102.685	109.625	114.265	119.044	123.967	129.037	134.259	139.638
NET PROFIT	36.127	320.996	282.677	306.680	331.495	357.150	384.136	410.742	438.498	457.058	476.176	495.866	516.147	537.037	558.554

The years are not calendar, but are calculated from the day of providing financial resources.

Cash Flow

Year	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15
1. INFLOWS	3.604.110	1.527.390	1.363.720	1.404.632	1.446.771	1.490.174	1.534.879	1.580.925	1.628.353	1.677.204	1.727.520	1.779.345	1.832.726	1.887.707	1.944.339
Equity	1.614.010	103.390	0	0	0	0	0	0	0	0	0	0	0	0	0
Loans	1.500.000	100.000	0	0	0	0	0	0	0	0	0	0	0	0	0
Shareholders	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Donations	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Shareholders	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Operating income	490.100	1.324.000	1.363.720	1.404.632	1.446.771	1.490.174	1.534.879	1.580.925	1.628.353	1.677.204	1.727.520	1.779.345	1.832.726	1.887.707	1.944.339
2. OUTFLOWS	3.482.242	999.839	1.119.953	1.147.555	1.176.007	1.205.337	1.214.688	1.245.651	1.169.376	999.808	1.031.154	1.063.440	1.096.694	1.130.946	1.166.226
Investments	3.114.010	203.390	3.972	4.091	4.214	4.340	4.471	4.605	4.743	4.885	5.032	5.183	5.338	5.498	5.663
Payment of old obligations	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Replacement of fixed assets	0	0	0	0	0	0	0	0	200.000	0	0	0	0	0	0
Operating expenses	359.200	695.200	716.056	737.538	759.664	782.454	805.927	830.105	855.008	880.659	907.078	934.291	962.319	991.189	1.020.925
Loan annuities	0	21.000	329.256	329.256	329.256	329.256	308.256	308.256	0	0	0	0	0	0	0
Tax of profit	9.032	80.249	70.669	76.670	82.874	89.287	96.034	102.685	109.625	114.265	119.044	123.967	129.037	134.259	139.638
FINANCIAL FLOW (1-2)	121.868	527.551	243.767	257.077	270.763	284.836	320.191	335.274	458.977	677.395	696.366	715.906	736.031	756.761	778.112
Financial flow cumulative	121.868	649.419	893.186	1.150.263	1.421.026	1.705.862	2.026.053	2.361.327	2.820.304	3.497.700	4.194.066	4.909.971	5.646.003	6.402.764	7.180.876

Note

From the future accumulation, the program automatically included in the projections the replacement of fixed assets with a shorter lifespan than the project life Residual (residual value of the project) after the project life is not calculated in the last year of the project life because the market value of fixed assets after the end of the project life cannot be realistically estimated, and can significantly affect the financial effects.

Financial results of the investment

Parameter	Amount
Investment	3.497.400 EUR
Average Income	1.540.826 EUR
Average Net profit	393.956 EUR
Σ Net profit / Investment	1,69
Liquidity in all years	Yes
Average Net profit / Average Income	25,57 %
NPV (net present value)	1.414.088 EUR
IRR (internal rate of return)	8,3 %
Return time discounted	11 Years

SWOT Analysis

Strength

Own raw materials, contract for the supply of electricity to the public network

Your strengths can be qualified staff, team, experience, available resources (technological equipment, raw material base), market position, innovative products, investment and creditworthiness.

Weaknesses

No contract for the supply of thermal energy has been signed.

Poor creditworthiness, lack of team, experience, qualified staff, creditworthiness, ie. financial resources (especially for beginners in business), inflexibility (poor adaptation to market changes), poor financial analysis to prove the profitability of the idea and attract co-investors...

Opportunity

Possibility of donations

Innovative product, developed more advanced technology, profitability of the idea, favorable market situation, ie. favorable economic-socio-political environment,....

Threats

If there is no sale of thermal energy

Unfavorable economic, socio-political environment, lack of state incentives and favorable loans, especially for business start-ups, strong competition in the planned activity, strong competition that quickly develops more innovative products.

Appendix

Agency	Standard and Poor's	Fitch Ratings	Moody's Service
Rating	BB+/stable appearance ↗	BB+/stable appearance ↗	Ba2/stable appearance ↗
Date Activity	6/11/2021 ↗	9/3/2021 ↗	3/12/2021 ↗
Activity	Rating confirmed ↗	Rating confirmed ↗	Increased rejting ↗

You can download the current Rating via the link https://nbs.rs/sr/finansijsko_trziste/informacije-za-investitore-i-analiticare/rejting_RS/. Attached is the latest rating rating from STANDARD & POOR'S, MOODY'S INVESTORS SERVICE and RATING FITCH. It is important if foreign investments or foreign investors are planned. More in the blog <https://investasistent.com/investiciona-i-kreditna-sposobnost-investitora/>

Note

An investment is eligible for realization if all indicators in the Financial Result have recommended values, if the SWOT analysis is realistic (more in the blog [SWOT Analysis](#)) and if the investment and creditworthiness is realistically assessed and accepted by a potential lender or co-investor (more in the blog [Investment and Investor Creditworthiness](#)). The key parameters on the basis of which it is concluded whether the investment is financially justified are: NPV (Net present value), which must be positive, and shows how much the investor will earn in the project life at current prices, IRR (internal rate of return) which is an indicator of interest invested capital, which in the basic variant must be at least 2 times higher than the discount rate, Discounted return on investment, which must be shorter than the life of the project, Average annual Net profit min 15-20% of average income. If the budget shows a loss on the Income Statement and / or illiquidity in the Financial Flow (often occurs in the first years of the project life if production is gradually established and / or due to the need to conquer the market, due to employee salaries, depreciation and due loan installments), and other above parameters are good, does not mean that you should give up the investment, but indicate that in those years it is necessary to invest additional external funds to maintain liquidity.

Disclaimer

We did not check the reliability of the input data (investment value, income and expenses, SWOT analysis), as well as investment and creditworthiness. Therefore, before starting the investment, all entered data should be checked again, especially the procurement and sales market.

[INVESTMENT ASSISTANT TEAM](#)

If you want our opinion on the investment in question, contact our consultants by [e-mail](#) with specific questions.