



## INSTALLATION OF HEAT PUMP FOR HEATING THE HOUSE

Investor: XXXXXXXXXXXXX

Project Location: Serbia

Currency: RSD

Date Activity: 21.03.2022

### Description and Goal of the Investment

House description House heating area 200 m<sup>2</sup>, medium insulated building (75 W / m<sup>2</sup>, classic brick facade with insulation) Heating hours during the year 2,548 h (Heating season 5 months, heating 14 h / day) Required thermal energy 7.5 kW x 2,548 h x 2 = 38,220 kWh Now: gas heating Radiator system Gas consumption 4,777.50 m<sup>3</sup> in the heating season Gas price 35.51 dinars / m<sup>3</sup> The cost of gas in the heating season is 169,805 dinars Designer's proposal: installation of a heat pump, water-water system, pump power 16 kW, COP 4 Monthly electricity consumption for heat pump heating is 1,592.5 kWh, VT 1,274 kWh (80% of consumption), NT 318.5 kWh (20% of consumption) According to the EPS calculator (March 18, 2022), the monthly cost for electricity for heating with a heat pump is 17,709 dinars, and the annual x 5 months = 88,545 dinars The house has 1 well at 10 m, yield = 2,400 lit / h. The cost of building another well is 120,000 dinars The price of the heat pump with installation on the existing radiator heating system and connection to the well is 569,000 dinars

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

0

4

2

0

3

Investment value and investment dynamics

! Items	Invested			Year 1			Year 2		
	Price	Durability	Amortization	Price	Durability	Amortization	Price	Durability	Amortization
	RSD	(Years)	Depreciation	RSD	(Years)	Depreciation	RSD	(Years)	Depreciation
Projects, permits, supervision	0	0	0	0	0	0	0	0	0
Heat pump with complete installation	0	0	0	569.000	20	28.450	0	0	0
Well	0	0	0	120.000	15	8.000	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	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
Credit processing	0	0	0	0	0	0	0	0	0
Working capital	0	0	0	0	0	0	0	0	0
Total	0	0	0	689.000	0	36.450	0	0	0
Total Investment	689.000	Working capital turnover ratio		0					

Sources of financing for new investments

	Sources	Year 1	Year 2	Total
Loan	Own capital	689.000	0	689.000
	Amount	0	0	0
	Repayment	0	0	0
	Grace period	0	0	0
	Interest	0	0	0
	Shareholders	0	0	0
	Donations	0	0	0
	Total	689.000	0	689.000

### Loan repayment plan

[illegible]

Loan in Year 1

[illegible]

Loan in Year 2

[illegible]

Total loans

[illegible]

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	81.260	81.260	81.260	81.260
Energy saving	rsd	1	81.260	81.260	81.260	81.260	81.260	81.260	81.260	81.260
		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
EXPENSES		0	0	0	0	0	10.000	10.000	10.000	10.000
		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
		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
Gross wages of workers	Number of employees	0	0	0	0	0	0	0	0	0
Average per month	Gross wages	0	0	0	0	0	0	0	0	0
Gross management salaries		0	0	0	0	0	0	0	0	0
Maintenance		0	0	0	0	0	5.000	5.000	5.000	5.000
Insurance		0	0	0	0	0	5.000	5.000	5.000	5.000
Marketing		0	0	0	0	0	0	0	0	0
Other		0	0	0	0	0	0	0	0	0
OPERATIONAL RESULT		0	0	0	0	0	71.260	71.260	71.260	71.260

Income statement

Year	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15
INCOMES	81.260	81.260	83.698	86.209	88.795	91.459	94.203	97.029	99.940	102.938	106.026	109.207	112.483	115.857	119.333
Operating expenses	10.000	10.000	10.300	10.609	10.927	11.255	11.593	11.941	12.299	12.668	13.048	13.439	13.842	14.258	14.685
EBITDA	71.260	71.260	73.398	75.600	77.868	80.204	82.610	85.088	87.641	90.270	92.978	95.767	98.641	101.600	104.648
Amortization	30.375	36.450	36.450	36.450	36.450	36.450	36.450	36.450	36.450	36.450	36.450	36.450	36.450	36.450	36.450
EBIT	40.885	34.810	36.948	39.150	41.418	43.754	46.160	48.638	51.191	53.820	56.528	59.317	62.191	65.150	68.198
Interest	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
EBT	40.885	34.810	36.948	39.150	41.418	43.754	46.160	48.638	51.191	53.820	56.528	59.317	62.191	65.150	68.198
Tax of profit	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
NET PROFIT	40.885	34.810	36.948	39.150	41.418	43.754	46.160	48.638	51.191	53.820	56.528	59.317	62.191	65.150	68.198

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	770.260	81.260	83.698	86.209	88.795	91.459	94.203	97.029	99.940	102.938	106.026	109.207	112.483	115.857	119.333
Equity	689.000	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Loans	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
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	81.260	81.260	83.698	86.209	88.795	91.459	94.203	97.029	99.940	102.938	106.026	109.207	112.483	115.857	119.333
2. OUTFLOWS	699.000	10.000	10.300	10.609	10.927	11.255	11.593	11.941	12.299	12.668	13.048	13.439	13.842	14.258	14.685
Investments	689.000	0	0	0	0	0	0	0	0	0	0	0	0	0	0
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	0	0	0	0	0	0	0
Operating expenses	10.000	10.000	10.300	10.609	10.927	11.255	11.593	11.941	12.299	12.668	13.048	13.439	13.842	14.258	14.685
Loan annuities	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Tax of profit	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
FINANCIAL FLOW (1-2)	71.260	71.260	73.398	75.600	77.868	80.204	82.610	85.088	87.641	90.270	92.978	95.767	98.641	101.600	104.648
Financial flow cumulative	71.260	142.520	215.918	291.518	369.385	449.589	532.199	617.287	704.928	795.198	888.176	983.944	1.082.584	1.184.184	1.288.831

## 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	689.000 RSD
Average Income	97.980 RSD
Average Net profit	49.877 RSD
$\Sigma$ Net profit / Investment	1,09
Liquidity in all years	Yes
Average Net profit / Average Income	50,91 %
NPV (net present value)	236.929 RSD
IRR (internal rate of return)	8,37 %
Return time discounted	10 Years

## SWOT Analysis

### Strength

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

### Weaknesses

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

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

### Threats

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 <a href="#">↗</a>	BB+/stable appearance <a href="#">↗</a>	Ba2/stable appearance <a href="#">↗</a>
Date Activity	6/11/2021 <a href="#">↗</a>	9/3/2021 <a href="#">↗</a>	3/12/2021 <a href="#">↗</a>
Activity	Rating confirmed <a href="#">↗</a>	Rating confirmed <a href="#">↗</a>	Increased rejting <a href="#">↗</a>

You can download the current Rating via the link [https://nbs.rs/sr/finansijsko\\_trziste/informacije-za-investitore-i-analiticare/rejting\\_RS/](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.

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