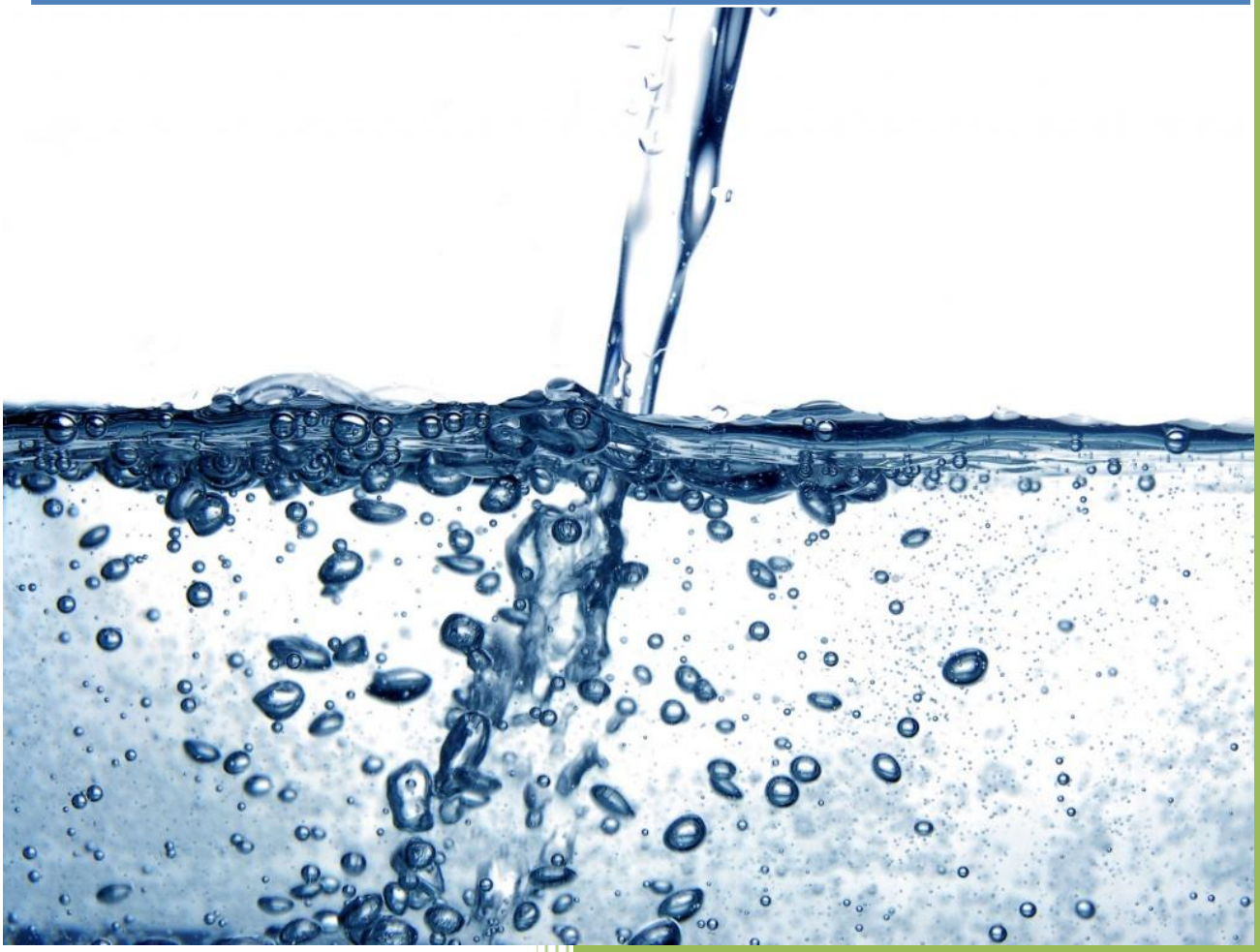
Business plan of a desalination plant using A technology



Piter-Consult

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1. Memorandum on privacy

This business plan is submitted on a confidential basis for the sole purpose of taking a decision on financing the project, and cannot be subjected to any unauthorized use, as well as be disclosed to third parties.

Those who are allowed to get familiarized with this business-plan take responsibility and ensure non-proliferation of the information contained herein.

2. Summary

2.1. Short overview

Water covers more than **% of our planet area. But only *% of the total amount of water is fresh. Most natural freshwater resources are represented by ice. And only about *,**% of these resources are suitable for drinking.

More than *,* billion people do not have any access to clean, safe water.

By ****, one-third of the world's population will experience water shortages.

.....

2.2. Offered products and services

Within the framework of this project it is planned to build desalinization plants in regions experiencing water shortages, with further management of these plants and sale of fresh water produced to the population.

Desalination is carried out using a new process technology which is fundamentally different from the one used in common plants, currently working on reverse osmosis technology.

New technology has low capital and operating costs, high quality of cleaning, lack of negative impact on the environment.

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2.3. Mission, goals and objectives

The project mission is to meet the growing needs of the human population in fresh water.

The project goal is to build a desalination plant at the expense of investors, achieve profitability of production, and return on investment due to project profit.

The objective of the project is to achieve performance targets. The project is expected to achieve the following parameters of economic efficiency.

Indicators	Unit of measurement	Value
PV	Euro	*** *** ***
IRR per year	%	**,*%
NPV	Euro	** *** ***
NPV with TV	Euro	** *** ***
Payback period	months	**
Payback period with discount	months	**

Table 1. Project performance indicators

Analysis of forecast indicators of the project economic efficiency shows investment attractiveness of this project, as it is evidenced by the following factors:

- A positive net present value (NPV), constituting ** million Euro, excluding terminal value, and ** million Euro, including terminal value.
- A high internal rate of return (IRR) composing **%.
- The project pays off during the forecast period.

Based on the data presented above, it is concluded that the project in question can be recommended for implementation.

3. Products and services

3.1. Introduction

Currently in the world there is a serious shortage of fresh water, which is disastrously lacking in many areas. At the same time in most regions there is a close access to the sea and to the salt water.

The mission of the project under consideration is to provide population of deficient regions with high-quality desalinated water.

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3.2. Products and services

Within the framework of this project it is planned to build desalinization plants in regions experiencing water shortages, with further management of these plants and sale of fresh water produced to the population.

A new process technology differs by low capital and operating costs, high quality of cleaning, lack of negative impact on the environment.

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3.3. Related products and services

Besides services of building desalination plants and sale of freshwater it is also planned to sale salt resulting from desalination.

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4. Market and industry analysis

4.1. The use of product and services

Desalination plants, services of their design, construction and management are common in regions suffering from shortage of fresh water, in the presence of large volumes of salt water available, which may be sea or ocean.

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4.2. Demographic analysis

Currently, more than **% of the world's population is experiencing a shortage of fresh water. This is because only about *,**% of water on Earth is fresh and safe for human consumption.

At the same time, **% of the world population lives no further than ** kilometers from the sea, **% of the population - *** kilometers from the sea. Due to the almost unlimited availability of seawater, its desalination is considered to be a natural solution.

.....

4.3. Competition

Currently, about ** million cubic meters of water is desalted per day worldwide. This is less than *,*% of the global water consumption.

Competitors basically use reverse osmosis technology, which is characterized by the following:

- **.....**

Desalination technology, the use of which is planned within the framework of the project in question, involves the following competitive advantages:

- **.....**

By **** the world market of desalination will reach *** milliards of US dollars.[1] Humanity will require larger amounts of fresh water, but its sources, first of all - large rivers and lakes, will not be able to satisfy the growing needs. Reverse osmosis technology won't be able to fully compensate for increasing consumption due to the above-mentioned drawbacks. For this reason, one can conclude that **the competition level is not high.**

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4.4. SWOT - analysis

<u>Market threats</u>

[1] Source: .....

The main market threats are related to the effects of negative macroeconomic factors caused by the global economic crisis, and the fall in resource requirements.

According to World Bank estimates, global economic growth in **** stood at *,*%, the forecast for growth in **** is *,*%. In January ****, the head of the European Central Bank Mario Draghi characterized a forecast for the oncoming year as yet non-specified.[2]

In May ****, the Director of the International Monetary Fund Christine Lagarde said that the world economy has still currently been suffering from the effects of the **** crisis.[3]

There is no reliable information about how long this period of economic uncertainty will last at the time of drawing up this document. Most experts agree that it will take *-** years to restore the former economic growth.

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Market opportunities

Market opportunities are associated with the growth of the world population and reduction of fresh water resources.

Water covers more than **% of our planet area. But only *% of the total amount of water is fresh. Most natural freshwater resources are represented by ice. And only about *,**% of these resources are suitable for drinking.

More than *,* billion people do not have any access to clean, safe water.

By ****, one-third of the world's population l experiences water shortages.

It is African countries to the south of Sahara (Tropical / Black Africa) that suffer from the greatest lack of drinking water.

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Strengths

We may name the following strong points of the project under consideration:

- .....

Weaknesses

The only weak point of the project under consideration is that the technology used is unknown on the market.

The following is a comparison analysis of the strengths and weaknesses with opportunities and business threats (SWOT-analysis). In terms of this analysis, opportunities are considered as factors with positive impact on business, threats – as factors with negative influence.

In each list the factors are compared with each other. The order of comparison is shown in the table below.

[2] Source: .....
[3] Source: .....

	Opportunities	Threats
Strong points	**Strengths & Opportunities field** *Whether these strengths allow taking any advantage thanks to this opportunity?*	**Strengths & Threats field** *Whether these strengths help to avoid this threat?*
Weak points	**Weaknesses & Opportunities field** *Whether these weak points make difficult using this opportunity?*	**Weaknesses & Threats field** *Whether these weak points make difficult to avoid this threat?*

Table 2. The order of comparison for SWOT-analysis

Positive answers to the questions listed in the above table are marked with the symbol "√".

The following table shows the SWOT-analysis performed.

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Table 3. SWOT-analysis

On the basis of the SWOT-analysis performed, a list of strategic initiatives was developed to make use of strengths and opportunities, to compensate for weaknesses and minimize threats. This list is presented in the table below. In the column called "Numbers" there are numbers of pairs "Party (enterprise) - environmental factor", in whose interest the initiative is formulated. Numbers of pairs are formed by combining the respective numbers of rows and columns of the preceding table, i.e., the number "**-**" corresponds to a pair "Party №* - Factor №*".

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Table 4. Strategic initiatives

5. Target markets

5.1. Target consumers

The target consumers are private and public entities that have uncovered needs for fresh water, and sufficient funds for construction of desalination plant.

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5.2. Geographic target market

The target market covers all regions of the planet experiencing a deficit of fresh water, having close access to the sea or ocean at the same time.

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5.3. Pricing

The pricing of the project takes into account the following factors:

- .....

In connection with the above, it is reasonable to apply **method of competition-oriented pricing**. Application of this method is a classic solution for implementation of well-known products on the market.

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6. Advertising and promotion strategies

6.1. Promotion strategy

- .....

6.2. Means of advertising

The following tools are used to disseminate information on sold goods and services:

- .....

6.3. Sales forecast

After completion of the plant and start-up of production it is planned to realize * million tons of desalinated water and *** thousand tons of sea salt, obtained as a result of desalination, per year.

7. Management

7.1. The company and its key staff

The following table shows proposed staffing of the planned company.

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Table 5. Staff schedule

7.2. Constant consumption of assets

In operation, the accrued depreciation is calculated on a straight-line basis at an average rate of *% of the property original value per year.

7.3. Preproduction costs

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Table 6. Investment costs

8. Financial analysis

8.1. Cost of goods sold

The following table presents the operating costs of the planned enterprise.

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Table 7. Operating expenses

8.2. Break-even analysis

Calculation of break-even level is presented in the following table.

Index	The average value for the calculation period	*%	*%
Revenues, Euro per month	* *** ***	** ***	** ***
Costs, Euro per month	** ***	** ***	** ***
Fixed costs, Euro per month	** ***	** ***	** ***
Variable costs, Euro per month	*	*	*
Profit before tax, Euro per month	* *** ***	-* ***	* ***

Table 8. Calculation of break-even level

As can be seen from the above table, ...

8.3. Quantitative analysis

Schedule of revenues for the project is shown in the following diagram.

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Chart 1. Schedule of revenues

As can be seen from the above chart, ...

The following diagram shows the structure of revenue.

As seen in the chart below, ...

.....

Chart 2. Structure of revenues according to their sources

Schedule of costs shown in the following diagram.

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Chart 3. Schedule of costs

As can be seen from the above chart, ...

.....

Chart 4. Structure of costs

8.4. Gains and losses

Gains and loss statement is presented .....

Table 9. Budgeted income and loss statement, **Euro.**

As can be seen from the table, ...

8.5. Cash flow

Budgeted cash flow statement is presented in *Table 10. Budgeted cash flow statement,*

As can be seen from the table, …….

8.6. Enterprise balances

Balance is presented in ……

*Table 11***.**

As can be seen from the table, ……..

8.7. Risks

<u>Organizational and managerial risks</u>

The risk of errors in selection of personnel

Lack of qualified personnel may lead to poor performance of the functions, failure of sales plans, losses, and bankruptcy of the company.

Measures to reduce (eliminate) these risks: ……..

Probability of this risk - average**.**

Degree of influence – high.

Possibility of risk management – complete.

Risk of loss or damage

This type of risk can arise as a result of fire, natural disasters, and illegal actions of individuals.

Measures to reduce (eliminate) this risk: …….

Probability of this risk - average**.**

Degree of influence - high.

Possibility of risk management - partial.

Risk of low demand for the services provided

Demand for the services provided is predicted based on the data of marketing analysis. In such circumstances, the risk occurrence is little likely.

Measures to reduce (eliminate) this risk: ……..

Probability of this risk - sub average**.**

Degree of influence – high.

Possibility of this risk management - partial.

Risk of high prices for traded goods and services

Expected rates of payment for traded goods and services are set at the average market indicators. In this regard, the emergence of the risk situation is unlikely.

Measures to reduce (eliminate) this risk: ……..

Probability of this risk - sub average**.**

Degree of influence – high.

Possibility of this risk management - partial.

<u>Financial risks</u>

Risk of non-payment

The negative impact of this type of risk is manifested by the lack of funds in the enterprise, reduction of its profits.

Measures to reduce (eliminate) this risk: ……..

Probability of this risk - low**.**

Risk of a lack of funding for the project

The negative impact of this type of risk is manifested in the absence of possibility to carry out or complete the project due to lack of funds.

Measures to reduce (eliminate) this risk: ……..

Probability of this risk - sub average**.**

Possibility of risk management - partial.

<u>Economic risks</u>

Risk of a significant change in the tax system

Significant changes in the tax system increase in tax rates, reconsideration of tax calculation and payment policy can have a serious negative impact on the project in question.

Measures to reduce (eliminate) this risk: ……..

Probability of this risk - sub average**.**

Degree of influence – high.

Possibility of risk management – not available.

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Table 9. Budgeted income and loss statement, Euro.

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Table 10. Budgeted cash flow statement, Euro

.....

Table 11. Balance, Euro

9. Annex. The effectiveness of the project

Main criteria for calculation of the project cost-effectiveness rates are presented in the table below.

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Table 12. Criteria for calculation of economic efficiency

The following table summarizes indicators of project economic efficiency.

Indicators	Unit of measurement	Value
PV	Euro	*** *** ***
IRR per year	%	**,*%
NPV	Euro	** *** ***
NPV with TV	Euro	** *** ***
Payback period	months	**
Payback period with discount	months	**

Table 13. Indicators of project economic efficiency

The analysis of forecast indicators of the project economic efficiency indicates investment attractiveness, as evidenced by the following factors:

- Positive net present value (NPV) constituting ** million euros, excluding terminal cost, and ** million euro, including terminal cost.
- High internal rate of return (IRR), which is **%.
- The project pays off during the forecast period.

10. Annex. Conclusion

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