

# BUSINESS PLAN

***“Going Green GmbH”***



Consulting and planning towards the future...

Vision: Create a link from the client towards a sustainable use of energy to comply with the future needs.

Mission: through a detailed analysis of a defined system to find solutions for a better use of energy with the specialized knowledge of each member of the team.

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## Executive Summary

The new planning and consulting company “**Going Green GmbH**” offers system competence for all kinds of renewable energy technology, like Solar thermal systems, Photovoltaic, Wind energy, Bio energy as well as consultancy in energy use and innovative systems.

The customers are mainly private persons or private cooperatives which are interested in implementing sustainable energy systems with a high return of invest.

The founders are young motivated engineers with a knowledge based on the actual state of affairs.

The climate protection goals of Europe, action plans and program’s, the knowledge, awareness and will of the people as well as the rising prices of fossil fuels are a promising circumstances to an increasing demand for renewable energies.

The unique selling point of this company is the widespread offer, knowledge and experiences of the different renewable energy technologies in one hand – the “**Going Green GmbH**”



## About the Founding Members

“Going Green GmbH” is to be founded by Dipl.-Ing. (FH) Christian Heeg, Tobias Klapper, BSc and Ing. Qco. Sebastián del Valle; as for now the three will be referred as “the founders”.

Scientifically the three hold university degrees that accredit them as engineers as well as a professional experience in the area of renewable energies.

Mr. Dipl.-Ing. Heeg degree is on Renewable Energy Technology and for the last years has been working in different renewable energy companies and passed already a seminar of founding a new business.

Mr. Klapper holds a Bachelor of Science on Environmental Technology and has worked on design of wind energy fields.

Mr. Ing. Qco. del Valle has a degree on Chemical Engineering and experience on evaluation and execution of hybrid renewable energy systems.

The study “Technology and Resource Management in the Tropics and Subtropics” at the “Institute of Technology in the Tropics (ITT)” is a supplemental educational qualification for all of them, which will lead to a Master degree.

With this background experience is easy to foresee that “Going Green” is to be a successful consulting company with up to date knowledge and a wide “know how network”.



## The Idea

The idea of creating such a concept came after analyzing the situation that as the time passes by there is an increasing concern from local governments and private persons about using renewable energy resources. After this first thought it also came into consideration that the concept of a consulting company in which is concentrated the knowledge of the different forms of renewable resources is not easy to find.

So it was that “Going Green” was born as a new concept that will bring together the knowledge to create renewable systems that will perfectly fit the energy needs of our future costumers.

### Place:

- Company is based in Cologne with a range of business on all NRW and in cases of consideration EU-wide.

### Activities:

- Planning and consulting
- No building, just advice and networking
- Technology handled:
  - Thermal Systems (Solar thermal, Geothermal, Bio energy)
    - Coordination, design and dimensioning for private house owners or public utility housing enterprise
    - Include planning for heating water
  - Photovoltaic
    - Coordination, design and dimensioning for private house owners or public utility housing enterprise
  - Wind energy
    - Projection of energy yield
    - Projection of shadow impact



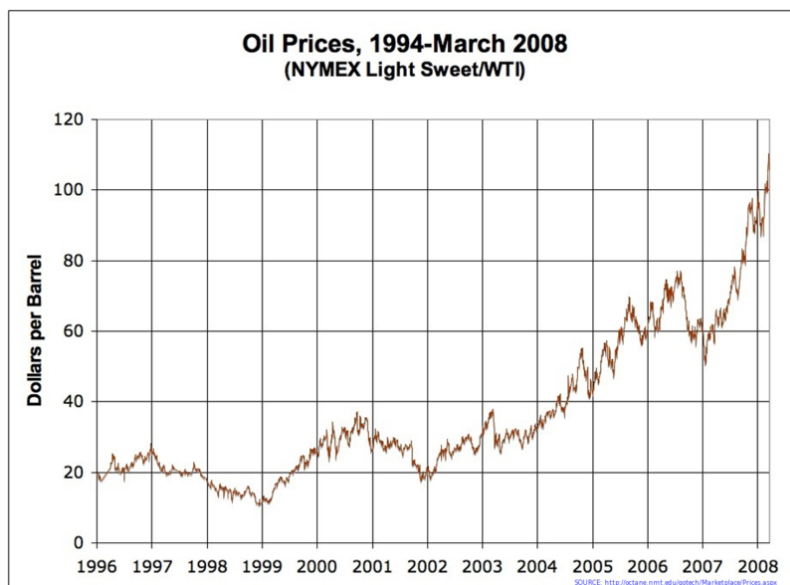
- Bio energy
  - Coordination, design and dimensioning of Biogas systems for farmers, land owners, rural cooperatives or other investors
  
- General energy consulting
  - Consulting for building energy use → Energy Performance Certificate
  - Hybrid systems
  - Low energy buildings

## Market Analysis

An internet-based market analysis has been conducted. The future demand and opportunities of renewable energies, especially solar thermal and photovoltaic has been analysed.

### *Energy Prices*

Since several years, the prices of fossil fuels are steadily increasing due the demand in emerging markets and further the decrease of resources.



**Pic.1 Oil Prices**

The „Deutsche Institut für Wirtschaftsforschung (DIW)“ assume that the prices of oil and natural gas will still rise.

The people recognized too, that the consumption causes the climate change. The increased awareness has established in society and politics.



## ***Policy***

As known, the European Union decided, to reduce the emissions of greenhouse gases of 20 % until 2020. According to this goal the use renewable energies should increase to 20 % of total energy usage.

Activities of the Federal Government of Germany:

### Renewable Energy Sources Act

The Renewable Energy Sources Act, established in 2000, guarantees fees for supply of electricity into the grid for 20 years. So the installation of photovoltaic, biogas, wind generators, geothermal and water power generation just depending on the location and its predicted energy yield.

### Thermal Act

The new incentive program for the heat market offers € 350 million in 2008 and further € 500 million Euro in 2009. Grants for heat pumps are also implemented.

Mr. Sigmar Gabriel (German minister for environment) said: “The federal government will increase the share of renewables in the heat sector to 14 % in 2020. ... The core of the law is a binding target of using renewables for new buildings and for the exchange of heating systems in old buildings.”

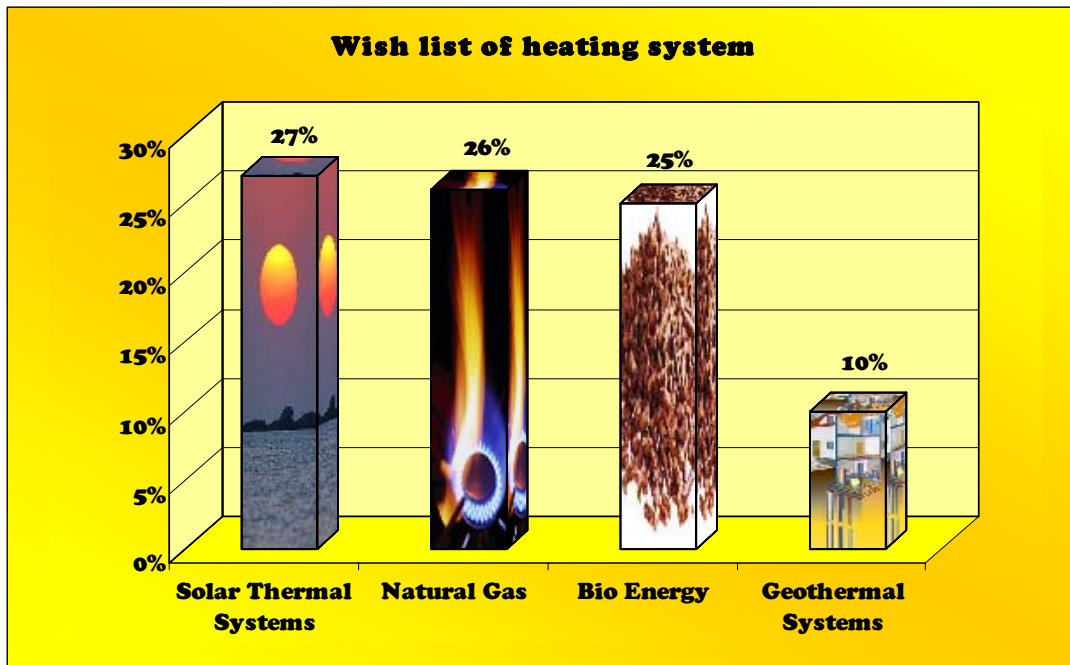
## ***Customers***

### Solar energies

Solar thermal energy is the most favoured thermal energy source of germane customers. This is the result of a representative study “Acceptance of photovoltaic and solar thermal in Germany 2007” of the “SOKO-Institut (Institut für Sozialforschung und Kommunikation)” in Bielefeld. 10 % of home owners are already using solar energy.



For 27 % of all home owners solar thermal systems are always high on the list, following by 26 % for natural gas, 25 % for bio energy technologies and 10 % for geothermal systems.



Pic.2 Wish list of heating systems (See SOKO-Institut)

Therefore we can also see a high potential for bio energy heating systems, e.g. pellet heating as well as geothermal systems.

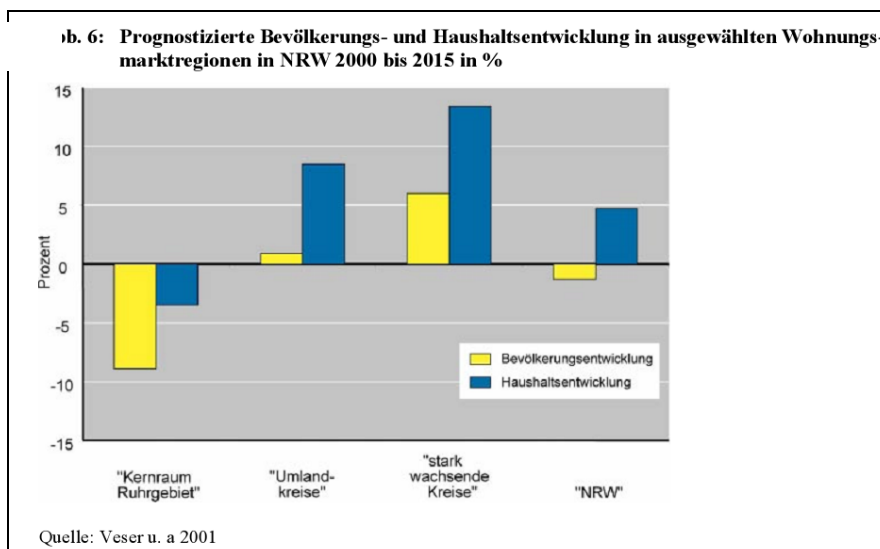
A market analysis of the “Bundesindustrieverband Deutschland Haus-, Energie- und Umwelttechnik e.V. (BDH)” illustrated, that 70 % of the energy potential of heating systems is insufficient and more than 20 % of existing systems (more than 2 Mio.) are older than 25 years without any use of the energy potential.

Further the number of households in Germany will increase mostly in the federal states of West Germany, what will also lead to a increasing demand for new heating and photovoltaic systems.



**Pic.3 Number of private households**

This verifies also the report “Demographische Entwicklung – Schrumpfende Stadt“ made by the „Institut für Landes- und Stadtentwicklungsforschung des Landes Nordrhein-Westfalen“, that shows an increase of private household in rural districts, which means mostly an increase of new houses for single families or new apartment houses in our core land North Rhine Westphalia (NRW).



**Pic.4 Development of inhabitants and households in NRW**

For the next years the consulting company Roland Berger is forecasting a market growth of solar thermal systems of 20 % per year all over Germany.

### Wind energy

Actually the highest market growth potential is settled in the sectors of repowering existing wind generators and the implementation of offshore parks.

But there are still areas in South Germany which can efficiently used with latest technologies of higher wind mills.

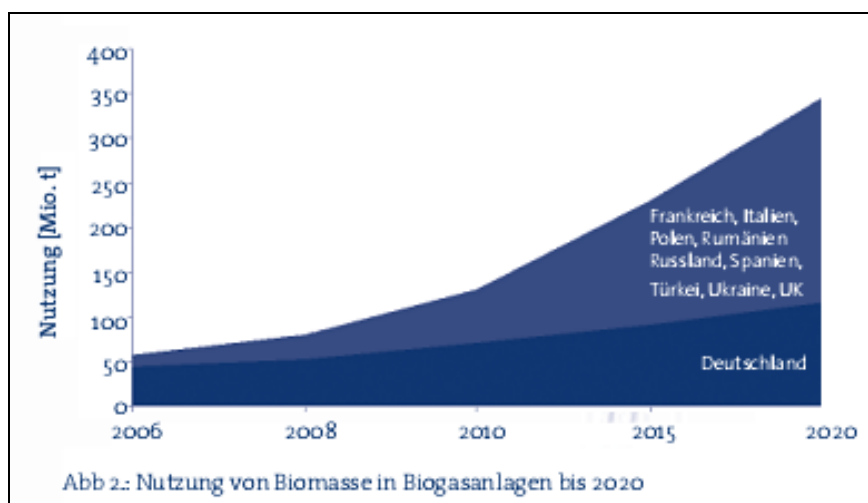
In general the market share for the German wind industry is tending to foreign markets.

### Biomass

In the heating sector we already analysed the situation.

For electricity or gas production by biogas the potential is still high, but the discussion about food costs representing a risk and the demand for biotechnology systems is stagnating at the moment in Germany.

But strategies and studies (“Regionale Struktur- und Einkommenswirkungen der Biogasproduktion in NRW“ by FH Südwestfalen, „Markt für Biogasanlagen in Europa“ by trendresearch) show that there will still an increase of demand. Especially decentralized systems in NRW and in France, which is close to NRW, will a coming market.



Pic.5 Use of biomass (See trendsearch)



Energy Performance Certificate (for Buildings)

After the implementation of the law that any flat and building has to be certificated its energy performance, there is a high demand for qualified specialists in the sector buildings with special technical building services.

### ***Competitors***

For Renewable Energy Planning Agencies and Consultancies of our size is no special study about number and quality. For sure there are many competitors, but we detected agencies, which are mostly specialized in a certain objective. Further the growing market in general calls for more companies in this sector.

### ***Summary***

The market analysis shows, that the highest market potential is for thermal systems. We will concentrate on this kind of projects. But to cover as most as possible customers we offer further planning and consultancy in all areas of renewable energy. In this kind of work we will have a unique selling point.

## Organization

The company is being given the legal form of an “Association with Limited Liability” that on the German law is a GmbH - “Gesellschaft mit beschränkter Haftung “. The reason why Going Green is getting this legal status is because of the benefits that this type of legal form receives. These benefits are as follows:

- Each partner has limited liability (accountability)
- Lower need of start capital when compared to an AG (stock corporation)
- The owners of the company are independent to decide how many shares are being holds by them.

Each founder will receive an equal share of the company’s asset’s, as well they will give 50% of the initial capital, consisting of the sum of € 35955,25.

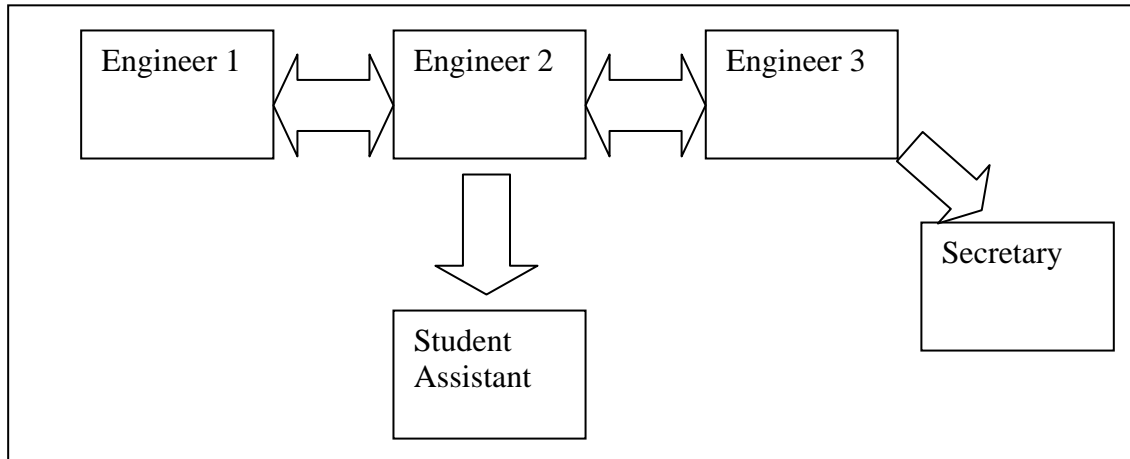
In the company the three of them will hold as well the same power de take decisions, meaning that it will require the acceptance of the three to go forward with a planned activity.

For each project there will be general discussion between the three to decide towards which field of expertise the project is leaning, and then one of the members will take the role of the coordinator for that project. This doesn’t mean that from this point on the other two will be detached from the project; the knowledge of the three will always be available at any moment for any project that comes in.

There will be place for an assistant, he will be a student that is going through an engineering study that supports and is compatible with the needed knowledge of the company. He will be in direct command from the three founders and share projects with them.

To take care of the secretarial chores, a secretary will be hired. She or he will be in charge of external communications with clients, up to date the company’s agenda, securing a steady flow of office equipment and keeping the communication flow going.

Company's Organizational Diagram



## Financial Plan

This company require an initial investment of 71910.50 €. On the following Tables is described in detail the budget.

**Tab. 1 Initial Budget**

<i>Item</i>	<i>Cost</i>	<i>Quantity</i>	<i>Total</i>	<i>Depreciation years</i>	<i>Depreciation rate (%)</i>	<i>Cost of Depretiation</i>
<i>Working desks</i>	350.00 €	5	1,750.00 €	10	10	175.00 €
<i>Rolling file cabinet (small)</i>	195.00 €	10	1,950.00 €	10	10	195.00 €
<i>Bookshelf</i>	289.00 €	5	1,445.00 €	10	10	144.50 €
<i>Bookshelf with door</i>	319.00 €	4	1,276.00 €	10	10	127.60 €
<i>Metal File Cabinet</i>	149.00 €	2	298.00 €	10	10	29.80 €
<i>Desk lamp</i>	49.00 €	5	245.00 €	10	10	24.50 €
<i>Ceiling lamp</i>	39.00 €	6	234.00 €	10	10	23.40 €
<i>Working chairs</i>	125.00 €	5	625.00 €	10	10	62.50 €
<i>Visitors chairs</i>	78.00 €	15	1,170.00 €	10	10	117.00 €
<i>Conference table</i>	500.00 €	1	500.00 €	10	10	50.00 €
<i>Electronic material/working material</i>	1,000.00 €	1	1,000.00 €	10	10	100.00 €
<i>Computer equipment</i>	1,000.00 €	5	5,000.00 €	4	25	1,250.00 €
<i>Copy machine</i>	379.00 €	1	379.00 €	4	25	94.75 €
<i>Laser printer</i>	214.00 €	1	214.00 €	4	25	53.50 €
<i>Company Auto (Toyota Prius 2008)</i>	24,900.00 €	1	24,900.00 €	5	20	4,980.00 €
<i>POLYSUN 4 (Solar thermal software)</i>	1,499.00 €	1	1,499.00 €	4	25	374.75 €
<i>PV*SOL 3.0 (Photo Voltaic software)</i>	698.00 €	1	698.00 €	4	25	174.50 €
<i>Biogas! (Biogas design)</i>	433.00 €	1	433.00 €	4	25	108.25 €
<i>WindPro (Wind energy program)</i>	15,000.00 €	1	15,000.00 €	4	25	3,750.00 €
<i>WAsP (Evaluation software for wind plants)</i>	2,700.00 €	1	2,700.00 €	4	25	675.00 €
<i>Miscelaneous literature</i>	1,500.00 €	1	1,500.00 €	10	10	150.00 €
<i>Rent deposit</i>	9,094.50 €	1	9,094.50 €			
<b>Total</b>			<b>71,910.50 €</b>			<b>12,660.05 €</b>



The initial capital is intended to be acquired through a bank loan and own funds.

**Tab. 2 Initial capital**

<b>Total Investment</b>	<b>71,910.50 €</b>
<b>50% own capital funds</b>	<b>35,955.25 €</b>
<b>50% outside financing</b>	<b>35,955.25 €</b>

**Tab. 3 Overview of the financial situation for the first 10 years**

<i>year</i>	<i>Balance of debt</i>	<i>Interest rate (%)</i>	<i>Interest Cost paid p.a.</i>	<i>Repayment p.a.</i>
1. year	35,955.25 €	8	2,876.42 €	3,595.53 €
2. year	32,359.73 €	8	2,588.78 €	3,595.53 €
3. year	28,764.20 €	8	2,301.14 €	3,595.53 €
4. year	25,168.68 €	8	2,013.49 €	3,595.53 €
5. year	21,573.15 €	8	1,725.85 €	3,595.53 €
6. year	17,977.63 €	8	1,438.21 €	3,595.53 €
7. year	14,382.10 €	8	1,150.57 €	3,595.53 €
8. year	10,786.58 €	8	862.93 €	3,595.53 €
9. year	7,191.05 €	8	575.28 €	3,595.53 €
10. year	3,595.52 €	8	287.64 €	3,595.53 €
<b>Total Interest paid</b>			<b>15,820.31 €</b>	

**Total repayment**

**35,955.25 €**

**Tab. 4 Fixed costs**

<i>Item</i>	<i>Cost</i>	<i>Cost (year)</i>
<i>Web page maintenance</i>	9.99 €	119.88 €
<i>Internet connection</i>	49.99 €	599.88 €
<i>Telephone</i>	150.00 €	1,800.00 €
<i>City services</i>	150.00 €	1,800.00 €
<i>Advertisements</i>	150.00 €	1,800.00 €
<i>Rent</i>	3,451.50 €	41,418.00 €
<i>Monthly office materials</i>	300.00 €	3,600.00 €
<b>Total</b>	<b>4,261.48 €</b>	<b>51,137.76 €</b>



Some of the fix costs where not mentioned since they are included on other costs, for example a cleaning service is already included on the monthly rent paid.

**Tab. 5 Pay Roll**

<i>Position</i>	<i>Hour wager (EUR)</i>	<i>Working hours per week</i>	<i>Monthly (EUR)</i>	<i>Yearly (EUR)</i>
<i>Engineer 1</i>	40	40	6,400.00 €	76,800.00 €
<i>Engineer 2</i>	40	40	6,400.00 €	76,800.00 €
<i>Engineer 3</i>	40	40	6,400.00 €	76,800.00 €
<i>Secretary</i>	25	40	4,000.00 €	48,000.00 €
<i>Student Assistant</i>	10	24	960.00 €	11,520.00 €
<b>Total</b>			<b>24,160.00 €</b>	<b>289,920.00 €</b>

**Tab. 6 Calculation of the maximal revenue**

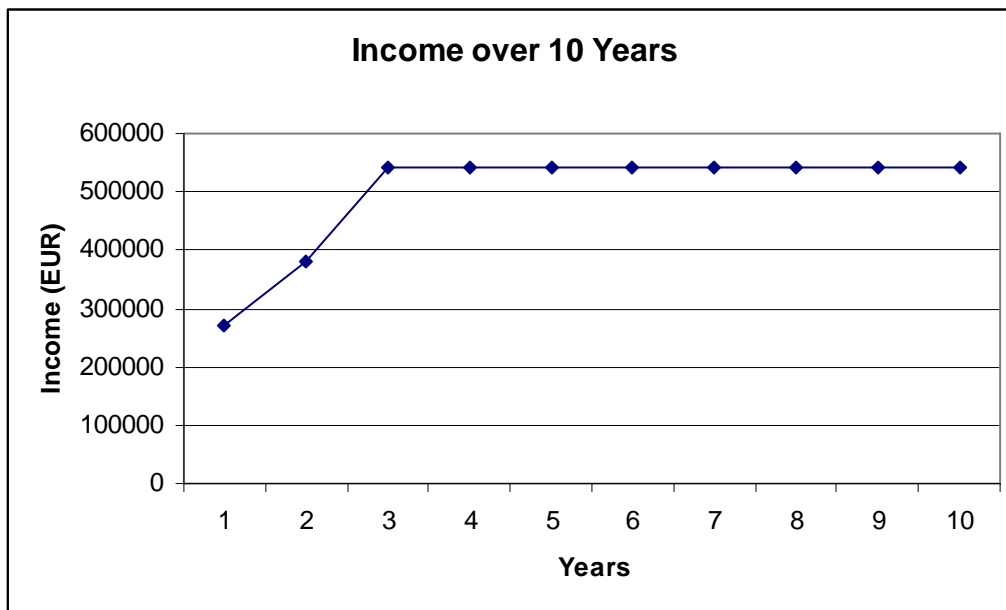
<i>Concept</i>	<i>Working Hours (week)</i>	<i>Holidays (25 days)</i>	<i>Working Hours (year)</i>	<i>Acquirement of Projects (per year)</i>	<i>Hours per project</i>	<i>Working Hour</i>	<i>Generated income</i>
<i>Engineer 1</i>	40	200	1880	120	15.6666667	90	169,200.00 €
<i>Engineer 2</i>	40	200	1880	120	15.6666667	90	169,200.00 €
<i>Engineer 3</i>	40	200	1880	120	15.6666667	90	169,200.00 €
<i>Student Assistant</i>	25	125	1175	48	24.4791667	30	35,250.00 €
							<b>542,850.00 €</b>

The maximal revenue was done to cover the expenses from the table 2, 3 and 4. A total of approximately 16 hours will be invested by each member of the team for the projects with exception of the student Assistant that will be given a representative 24 hours per project. The price of the working hour is set according to tariff by other engineer consultancy offices of the same branch. When calculating according to this tariff, it was found that the revenue needs are covered and still gives a margin of profit for the company.

**Tab. 7 Income over 10 years**

<i>year</i>	<b>1</b>	<b>2</b>	<b>3</b>	<b>4</b>	<b>5</b>	<b>6</b>	<b>7</b>	<b>8</b>	<b>9</b>	<b>10</b>
<i>Acquirement rate</i>	50%	70%	100%	100%	100%	100%	100%	100%	100%	100%
<i>generated Income</i>	271,425.00 €	379,995.00 €	542,850.00 €	542,850.00 €	542,850.00 €	542,850.00 €	542,850.00 €	542,850.00 €	542,850.00 €	542,850.00 €

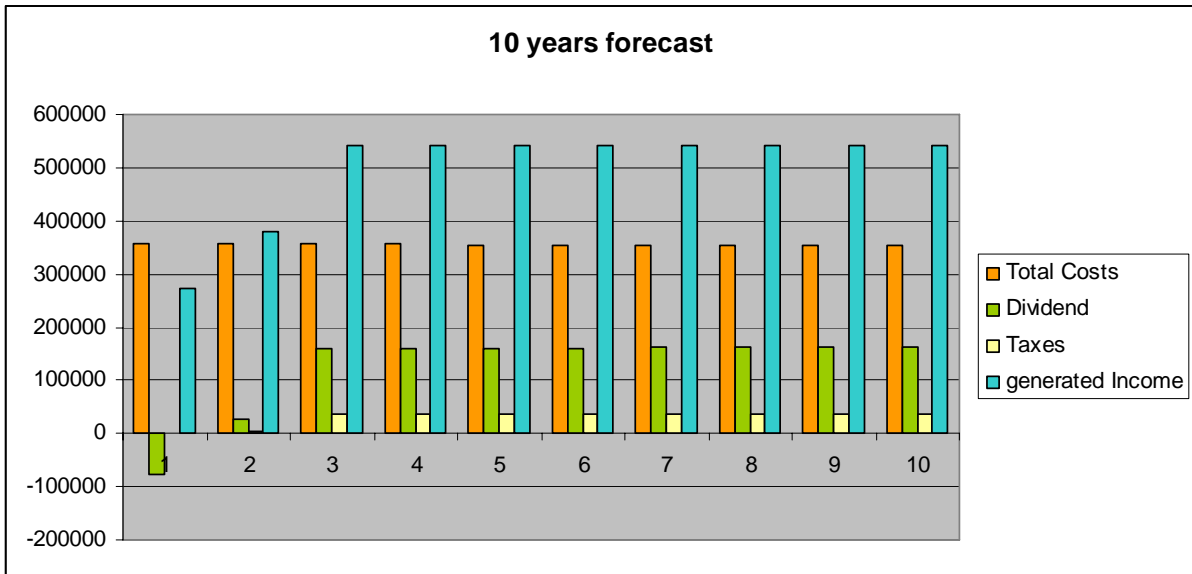
Over the first ten years is foreseen that the company will be producing at a 100% until the third year of operations. This has been anticipated so that there will be a two year margin for the company to adapt its operations to the demands of the market. A graphic is shown with the tendency line of the operations.



Outlines for the calculations did below are in the following chart:

**Tab. 8 Cash flow (All quantities are in €)**

All in €	Year 1	Year 2	Year 3	Year 4	Year 5	Year 6	Year 7	Year 8	Year 9	Year 10
<i>Turnover/Revenue</i>	271425.00	379995.00	542850.00	542850.00	542850.00	542850.00	542850.00	542850.00	542850.00	542850.00
<i>Depreciation Costs</i>	<b>12660.05</b>	<b>12660.05</b>	<b>12660.05</b>	<b>12660.05</b>	<b>12660.05</b>	<b>12660.05</b>	<b>12660.05</b>	<b>12660.05</b>	<b>12660.05</b>	<b>12660.05</b>
<i>Labour Costs</i>	289920.00	289920.00	289920.00	289920.00	289920.00	289920.00	289920.00	289920.00	289920.00	289920.00
<i>Utility Costs</i>	51137.76	51137.76	51137.76	51137.76	51137.76	51137.76	51137.76	51137.76	51137.76	51137.76
<i>Financing Costs</i>	2876.42	2588.78	2301.14	2013.49	1725.85	1438.21	1150.57	862.93	575.28	287.64
<i>Loss Carried Forward</i>		-85169.23								
<i>Profit before Tax</i>	-85169.23	23688.41	186831.05	187118.70	187406.34	187693.98	187981.62	188269.26	188556.91	188844.55
<i>Taxes - 19%</i>	0.00	4500.80	35497.90	35552.55	35607.20	35661.86	35716.51	35771.16	35825.81	35880.46
<i>Profit after Taxes</i>	-85169.23	19187.61	151333.15	151566.14	151799.13	152032.12	152265.11	152498.10	152731.09	152964.08
<i>Cash flow</i>	-72509.18	31847.66	163993.20	164226.19	164459.18	164692.17	164925.16	165158.15	165391.14	165624.13
<i>Debt</i>	3595.53	3595.53	3595.53	3595.53	3595.53	3595.53	3595.53	3595.53	3595.53	3595.53
<i>Dividend</i>	<b>-76104.71</b>	<b>28252.14</b>	<b>160397.68</b>	<b>160630.67</b>	<b>160863.66</b>	<b>161096.65</b>	<b>161329.64</b>	<b>161562.63</b>	<b>161795.62</b>	<b>162028.61</b>



The anticipated Cash Flow shows that the company will be having losses on the first year, it is expected that operations will be well managed enough to have on the second year a small margin of profit, that will in the future years be enough to amortize the loan with the bank. At the end of the first ten years of operations, the debt will be cancelled with its respective interests leaving the company with a steady profit inflow of 165624.13 €.

## Marketing

With the choice of the company seat in Cologne, “**Going Green GmbH**” has its base of operation in the center of the surrounding rural areas like Eifel, Bergisches Land and Siegerland, being the main application areas for our growing business. These rural areas have good potential for renewable energies, which influence positively the power supply in regions lacking in infrastructure.

Furthermore these rural areas are basically fit for agricultural use and owing to this fact, energy production with a biogas installation or with solar panels on big roofs of barnyards suggest themselves and not to forget to mention wind, which blows strongly in the Eifel (strong onshore wind region).

The “**Going Green GmbH**” is placed in the center of Cologne with good connections to the next motorway as well as to public transport, so there are for all clients enough possibilities to get in touch with us.

It is planned to take part in the “Cologne RegEn 2009” exposition, which will be the sixth year consecutively the exposition informs about renewable energies and energy saving in the Rhine region, to present there our GOING GREEN concept. Thus the access to the local market is mainly done.

Additionally it is planned to publish interviews and reports about “**Going Green GmbH**” in the existing technical literature of renewable energy (e.g. “Erneuerbare Energien“, “Sonne Wind & Wärme”, etc.) to stimulate costumers’ interest.

“**Going Green GmbH**” creates a link from the client towards a sustainable use of energy to comply with the future needs. The specialized knowledge of the GOING GREEN staff will consult local governments and private persons in order to meet the needs of their purposes – finding specific solutions for an efficient use of renewable energy.



As a matter of fact, the “know how” of renewable energy (re) is mostly located in the heads of engineers, scientists and students just starting to study in this direction. But the amount of people not knowing how to handle re is still bigger. Thus **“Going Green GmbH”** set oneself a target to change this. **“Going Green GmbH”** will consult and inform people about re to convey them to go for it next time (e.g.: with the next building renovation heating, heat insulation and power supply can be done according to re). If the people don’t know anything about re, they can lose track of it very fast and this is necessary to avoid.

As a consequence of the revised form of the “Energieeinspargesetz – EnEG” (energy saving law in Germany) from October 2007, which instructs building-owners to use civil engineering standards for an efficient energy consumption in their building or construction object. This counts for residential and office buildings as well as for certain plants like small- and medium-sized enterprises (SME).

And this is our point of action – providing specialized knowledge within specific solutions for an efficient use of renewable energy.



## Literature

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[www.solarwirtschaft.de](http://www.solarwirtschaft.de)

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