

Please note - The titles used in this document provide a clear structure to your business plan. You may choose to make minor changes to suit your particular situation.

Name: ECOTUFF

Business Plan for: Construction

(Please use this template in conjunction with the guide [Prepare a business plan](#), where you will find information about how to use your business plan as well as [instructions on how to use this template](#))

Document Version:	Draft
Date:	September 04, 2019
Completed by:	EcoTUFF founding team



Co-fu

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1 Executive Summary

EcoTUFF is a start-up manufacturing company, which plans to become the leading producer of non-cement tuff (volcanic stone) construction materials, from stone waste.

The product will be based on scientific and technological inventions created by three scientists/engineers of the National University of Architecture and Construction of Armenia (NUACA). The product technological know-how will be patented to protect intellectual rights of the company and inventors.

The business is implemented by three scientists/engineers, who have invented the product know-how, have actively participated in the scientific-research works and plan to further develop and commercialize their inventions, which is going to seriously impact ecological situation in Armenia and present a new, ecologically clean and high quality construction material – EcoTUFF construction stone.

The company's overall strategy will be based on a continuing process of setting objectives, measuring results and providing feedback to facilitate further growth and progress.

The company plans to become the major supplier of eco-tuff (eco-stone) construction materials in Armenia and surrounding countries. To achieve this goal, the company will strive to further develop its main product, as well as enhance production technologies, establish efficient and relatively low-cost production facilities, provide comprehensive marketing of the product and hire the most professional staff.

EcoTUFF company will strive to offer the finest quality, ecologically clean, recycled construction materials to clients involved in large scale commercial and residential construction, as well as to those providing architectural reconstruction works. EcoTUFF will maintain the highest production and service standards in the construction industry.

The company plans to produce the following types of ecologically clean EcoTUFF products:

- **Product #1** - multicolor exterior and interior panels
- **Product #2** - multicolor and surface finished brick like stones and blocks
- **Product #3** - multicolor and surface finished, special shaped and sculpted architectural elements (copestones, trimmings, etc.)
- **Product #4** - acid resistant stone panels and bricks
- **Product #5** - fire resistant tiles and bricks of special purposes

In this initial stage the company is going to concentrate on production, marketing and sales of the following higher demand products – exterior/interior panels (Product #1), brick-like stones (Product #2) and special shape-size stones used in restoration works (Product #3).

The advantages of the Eco TUFF products are:

- utilization of stone waste, cleaning the environment and improvement of land usage
- less extraction and consumption of natural stone resources
- high physical-mechanical properties of proposed products
- opportunity to have stones in any architectural details, shapes and sizes (with usage of molds)

Based on our preliminary estimations, we will be able to get about 5% of orders placed by large construction companies for products # 1 and 2, as well as about 50% of orders placed for product #3. Our preliminary estimations indicate that this will amount to about €164,700 sales in year 1, after we start our operations. This amount will increase at about 5% annual rate, reaching €201,360 in year 5.

As our financial calculations show, the company will have €38,700 profit (24% profitability in year 1, after it starts its operations. This is in case of reaching estimated sales level of 3,125 cubic meters. During subsequent years, the profitability of the company will increase and reach €49,950 (26%) in year 5.

The company reaches its break-even point in year 1, at the level of 1,000 cubic meters of sales.

Based on the presented cash-flow calculations, the company will operate with about €33,840 cash surplus starting from year 1. The cash surplus is going to be €46,170 in year 5.

NPV (Net Present Value) of the proposed business is **€133,560**, calculated at 9% annual interest rate and based on cash flow for the first five years.

Currently, the company seeks start-up financing for the purpose of acquiring starting inventory of raw materials, renting production/office space, acquiring machinery and equipment, securing enough working capital and covering other set-up and miscellaneous costs. This will allow the company establishing a fully operational production of ecologically safe, natural stone-waste based construction materials, expanding its sales volumes and passing break-even point/reaching profitability.

1. In year 0 the company will need about 18,500 EUR for covering equipment purchase costs, as well as operational expenses for three initial months - necessary for setting up the company operations/production.
2. In Year 1 the company will need additional 70,900 EUR for covering equipment purchase and annual rental costs, as well as for making payments for 50% of planned operational and raw material purchase expenditures (during first six months), before the company production becomes fully operational and starts making regular sales and receiving cash from its sales.
3. About 50% of needed investment of about €90.000 will be paid back at the end of Year 1, while the remaining 50% will be paid back in Years 2 and 3.

2 Business details

Company name:

ECOTUFF

Address:

NUACA, 105 Teryan Street, Yerevan 0009, Republic of Armenia

Telephone number:

+374 10 58-72-84

Legal status:

Startup

The business will:

EcoTUFF is a start-up manufacturing company, which plans to become the leading producer of non-cement tuff (volcanic stone) construction materials, from stone waste.

The qualitative characteristics of the proposed product – EcoTUFF, are fully comparable with those of the natural tuff stone, including its light weightiness, energy efficiency and bright colors. The new product will also be less expensive. Hence, EcoTUFF will help to solve a major environmental issue, while it will also offer a more affordable, yet high quality, tuff construction material.

EcoTUFF will become an affordable wall construction, wall covering (panels) and decoration construction material. They can have different sizes and thicknesses and can also be manufactured in specific forms (with usage of molds) – for decorative walls.

3 Key personnel

The company's main management group will be composed of three partners, who are highly qualified in the fields of design and production of offered construction products. The company will additionally strive to hire qualified people who will be professional employees, dedicated to their work and able to accomplish tasks, which partners are not able to perform because of their specializations.

The company's management philosophy will be based on responsibility and mutual respect. EcoTuff will maintain an environment and structure that encourages productivity and respect for customers and fellow employees.

To achieve this vision, we need to position our company for growth and ensure that we hire dedicated and qualified employees at all levels. We will build a business that has the right structures and processes that can support growth. We shall create such a business, which solves serious environmental problems and provides ecologically clean product to our construction industry.

Details of owner(s):

Name: Mrs. Nelli Muradyan

Position/main responsibilities: the company's General Manager, coordinating all general management, operational and HR management activities. Coordinator of external relations and relations with the main partners of the company

Experience and knowledge of our industry: Civil engineer, researcher and technologist in construction industry, with specialization for construction materials

Previous employment: Head of Scientific-Research Laboratory of Construction Materials of NUACA

Key skills brought to the business: Deep knowledge about modern construction materials and technologies, ability to organize laboratory experiments, provide recommendations for improving existing construction materials, invent new, higher quality products and improve production processes.

Business experience and any training undertaken: Experience in management of small teams, participation in business/management and project management trainings organized by NUACA, in partnership with the Rutgers University (Project Management) and within framework of the Erasmus+ InnoCENS Project (Business and Management)

Academic/professional qualifications: PhD student in Buildings, structures and construction materials

Most recent salary €: -

Details of owner(s):

Name: Mrs. Lilit Babayan

Position/main responsibilities: The new product development and marketing/sales manager of the company

Experience and knowledge of our industry: Specialized architect, urban planner and restorer

Previous employment: Head architect in "ArmProject" OJSC

Key skills brought to the business: Deep knowledge in the field of architecture and restoration works, also in modern construction materials, which are used in architectural and construction projects. Ability to organize all types of design works, provide recommendations for improving design/architectural/construction projects and use innovative, ecological construction materials.

Business experience and any training undertaken: Experience in management of small teams, participation in business/management and project management trainings organized by NUACA, in partnership with the Rutgers University (Project Management) and within framework of the Erasmus+ InnoCENS Project (Business and Management)

Academic/professional qualifications: Academic/professional qualifications: PhD student in the faculty of Architecture

Most recent salary €: -

Details of owner(s):

Name: Gor Khachatryan

Position/main responsibilities: Main technologist/production manager, handling all production, cost and quality control, supply and other technological matters

Experience and knowledge of our industry: Civil Engineer, Researcher at the Scientific-Research Laboratory of Construction Materials and Items, Specializing in invention of new stone-based construction materials and improvement of qualitative characteristics of existing ones

Previous employment: Student in Civil Engineering, specialization – construction materials

Key skills brought to the business: knowledge about physical-mechanical characteristics of the product, new product development and testing skills, ability to organize and manage production processes

Business experience and any training undertaken: - participated in Entrepreneurship for Engineers and Innovation Systems business and innovative skills development trainings organized by NUACA, within the framework of Erasmus+ InnoCENS project.

Academic/professional qualifications: Student in Civil Engineering

Most recent salary €: -

Other key personnel (including shareholders):

As the company grows, the company will hire a financial manager/accountant, bookkeeper, HR specialist, sales personnel, additional marketing and product development/designing specialists. Those can be individual specialists or professional accounting/marketing firms.

At this stage, the organizational structure of the company will include:

1. General Manager (Chief Executive Officer), partner #1, N. Muradyan
2. Marketing and New Product Development Manager, partner #2, L. Babayan
3. Production Manager, partner #3, G. Khachatryan
4. Chief Accountant/Bookkeeper
5. Admin and HR Specialist
6. Workers

It is envisioned, that three main partners will not receive regular salary, but will get their share of the profit, when the company becomes profitable. All other employees will be paid regular monthly salary, as it is envisioned in the financial plan of this business plan.

4 The business idea

Millions of cubic meters of stone waste have been produced in Armenia over the decades because of the large-scale extraction and cutting of various types of tuff stone and other volcanic rocks. These stones are broadly used in Armenia for construction purposes. Currently, the stone waste occupies large areas. This has become a major problem for our country, which has limited land resources. It also creates serious environmental problems, since stone dust and small particles are spread over broad territories used for the agricultural cultivation and other economic purposes.

To reuse this stone waste and clean the environment, our group has invented a technology, which allows producing high quality, artificial, cement-free tuff stones from the stone waste (from stone dust and stone particles).

The qualitative characteristics of the proposed product – EcoTUFF, are fully comparable with those of the natural tuff stone, including its light weightiness, energy efficiency and bright colours. The new product will also be less expensive. Hence, EcoTUFF will help to solve a major environmental issue, while it will also offer a more affordable, yet high quality, tuff construction material.

EcoTUFF will become an affordable wall construction, wall covering (panels) and decoration construction material. They can have different sizes and thicknesses and can also be manufactured in specific forms (with usage of molds) – for decorative walls.

5 Business goals

What do you want to achieve in your first year of business?

In the first year of full operations the business plans to:

- Introduce fully developed and market tested three new EcoTUFF products – exterior/interior panels (Product #1), brick like stones and blocks (Products #2) and special size and shape molded stones (Product #3)
- Set up production and purchase/install all necessary equipment
- Partner with main stone miners and processors to get stone waste – the main raw material needed for production of EcoTUFF products
- Make work arrangements and hire key employees
- Organize marketing and promotion of new products
- Arrange product purchase and partnership contracts with major construction companies – major potential buyers of EcoTUFF products
- Organize regular production and sales of produced products, as envisioned by the marketing and financial plans
- Reach sales target of €164,700 in year 1, as well as reach company break-even point and start working with profit

Advantages

The usage and disposal of stone waste can solve serious environmental problems by cleaning the occupied territories and transferring them into useful agricultural or other natural areas. It will also reduce the consumption of valuable natural stone resources.

With the proposed technology it will also be possible to produce special shape/carved architectural elements, covering tiles, wall blocks and other special size/shape elements by using appropriate molds.

More specifically, the obvious advantages of the EcoTUFF products are:

- utilization of stone waste and cleaning the environment
- improvement of land usage
- less extraction and consumption of natural stone resources
- lower land rehabilitation costs
- less energy consumption for producing construction materials
- lower processing costs
- high physical-mechanical properties of proposed products
- diversity in colors
- elimination of high-cost carving and design works for special shape/carved architectural elements (Product #3)
- opportunity to have stones in any architectural details, shapes and sizes (with usage of molds)

Where do you see your business in 3-5 years' time?

In 3-5 years' period, the company will:

- Continue producing its current products (Products # 1-3) and improving their quality, based on technological advancements and market requirements
- Introduce new products, which will include acid resistant stone panels (Product #4) and fire resistant tiles and bricks (Product#5)
- Establish long-term, sustainable relationships with 70 large construction companies and 10 companies involved in reconstruction/restoration works
- Increase sales at least at 5% annual rate
- Work at 25% minimum profitability rate
- Cover initial investment of €133,920 in 5 years' period

6 What the business does

Product/service	Features	Benefits
<ul style="list-style-type: none"> • multicolour exterior/interior panels 	<ul style="list-style-type: none"> • High physical-mechanical properties • Ecologically clean 	<ul style="list-style-type: none"> • Low cost • Utilization of waste stone • Reduction of extraction of natural resources
<ul style="list-style-type: none"> • multicolored and surface finished brick like stones and blocks 	<ul style="list-style-type: none"> • High physical-mechanical properties • Ecologically clean 	<ul style="list-style-type: none"> • Low cost • Utilization of waste stone • Reduction of extraction of natural resources
<ul style="list-style-type: none"> • multicolour and surface finished, special shaped and sculpted architectural elements 	<ul style="list-style-type: none"> • Colour diversity • Ecologically clean • Special shapes, as demanded by the client 	<ul style="list-style-type: none"> • Low cost • Utilization of waste stone • Reduction of extraction of natural resources

7 What makes the business different

Your product/service is unique or different compared with the competition because: (Use as many fields as is applicable and add more if you need to.)

- Utilization of stone waste
- Low cost
- Reduction of extraction of natural resources
- High physic-mechanical properties
- Lack of expensive hand-work

8 Legal requirements (including regulations and licences particular to your business)

The legal and insurance requirements that apply in your business are: (Use as many fields as is applicable and add more if you need to.)

1. Patent for production of ecologically clean EcoTUFF construction materials
2. Company registration
3. Supply contracts with main suppliers of stone waste materials

You will meet your legal and insurance requirements by: (Use as many fields as is applicable and add more if you need to.)

1. Are in the process of collecting materials and applying to the National Patent Agency for obtaining the patent
2. Lack of initial funding needed for starting the business idea implementation process
3. Suppliers will be contacted and appropriate arrangements will be made, after starting the implementation of the business idea. Current discussions show that stone producers will be happy to get rid of stone wastes they currently have

9 Market research

Market Analysis Summary

The construction industry has been experiencing a significant growth in Armenia over the past few decades and is expected to continue to grow for at least the next ten and more years. In addition, significant historical and cultural architectural heritage restoration works are ongoing in Armenia. This gives great opportunities for construction supply companies, like EcoTUFF, which are able to offer high quality construction materials.

The company will be concentrating on the customers that will provide with big orders and the greatest margin. These will first include big residential and commercial building construction companies. This is the fastest growing segment of all the commercial construction enterprises, which need our products.

In short, the construction sector of Armenia will become the primary consumer of the products. In case of proper organization of production, the products can be offered to other clients in Armenia and abroad.

9.1 General Market Description

The industry of exterior/interior panels, brick type stones and decorative stones (products # 1-3) is a large one even for a relatively smaller Armenian construction market. Based on our preliminary estimations, total annual sales in this industry amount to approximately \$5 million, on an annual basis, and are projected to steadily increase. One reason for the prosperity of the construction industry is the slowly increasing economy of Armenia, as well as those of neighboring countries.

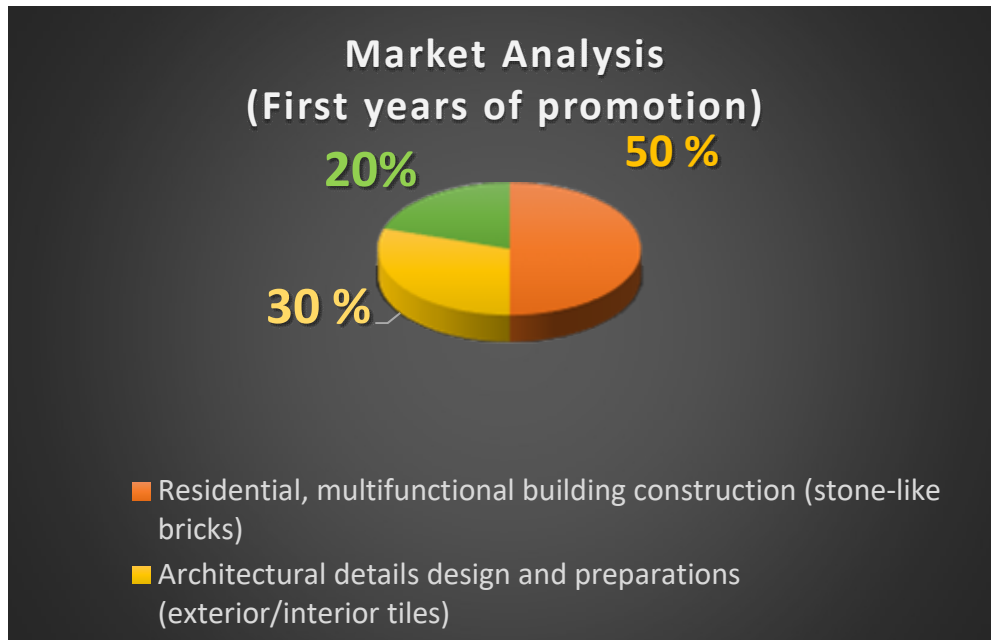
9.2 Market Segmentation

At this stage, the company is primarily targeting the construction industry, more specifically large companies involved in construction of residential and construction buildings. Our primary list of clients includes Armenian construction companies. In the whole territory of Armenia, we have about 970 officially registered construction firms, about 5% of which are large companies engaged in the construction of multi-story residential and construction buildings. These and other similar, large construction companies will become our primary target customers, since they can place large orders for panels and brick-type stones and will allow the company selling higher volumes and reaching its profitability at a faster rate.

The other major target sector will include construction companies and restoration agencies, which are engaged in architectural and historic restoration works. Our unique technology will allow us designing and preparing uniquely designed, special shape, architectural, molded stones, which can be immediately installed in restored buildings and monuments. They will not require any additional, higher-priced hand-carving work. As a result, the overall cost of renovation/restoration works will decrease, making them more profitable for companies, involved in those activities.

Market Size and Segments Statistics

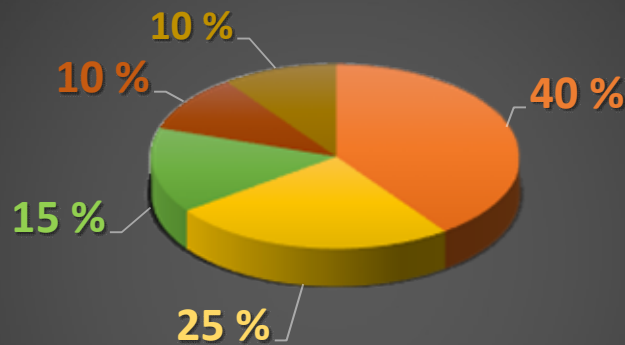
Estimated number of Armenian construction firms	970
Number of targeted large construction firms	70
Number of targeted renovation/restoration firms	10
Average annual purchase of exterior/interior tiles by 1 large firm, sq. m.	3,000
Average annual purchase of stone-like bricks by 1 large firm, units	50,000
Average annual need for special size and shape stones, for restoration, by 1 firm, cubic m.	100



In the process of development and expansion of our company we will also engaged in the construction (including new work additions, alterations, remodeling, and repair) of nonresidential buildings such as industrial buildings and warehouses. Also this will include commercial, institutional, religious, and amusement and recreational buildings.

As the other segment of our product application we will engaged in construction (including new work, additions, alterations, remodeling, and repair) of single-family houses.

Market Analysis (subsequent years of promotion)



- Residential, multifunctional building construction (stone-like bricks)
- Architectural details design and preparations (exterior/interior tiles)
- Restoration works (special size and shape stones)
- Single-family houses construction
- Non-residential buildings construction

9.3 Target Market Segment Strategy

Our primary target group of customers is construction companies involved in construction of multi-story buildings (Products # 1 and 2) and construction/restoration companies involved in building renovation/restoration works (Product #3). We plan to receive at least 5% of total orders placed by targeted large construction companies, as well as 50% of orders placed by restoration companies.

Residential and commercial construction projects are at an all-time high and will continue to increase for years to come. It is important to realize that we have a very unique and much-needed product.

Since residential buildings' construction has the highest average profit margin, we will focus most of our marketing and servicing efforts towards these customers. We plan to satisfy needs of those customers through a well-established and efficient operational/production program, strict supply management and cost accounting procedures, and comprehensive project management

Target Markets and Order Sizes

Total annual purchase of exterior/interior tiles by 70 large firms, sq. m.	210,000
Total annual purchase of stone-like bricks by 70 large firms, units	3,500,000
Annual demand for special size and shape stones for restoration by 10 firms, cu. m.	1,000
Annual purchase of exterior/interior tiles from EcoTUFF, sq. m. (5% of total), at 3,600 AMD per sq. m.	10,500
Average purchase of stone-like bricks from EcoTUFF, units (5% of total), at 200 AMD per unit	175,000
Annual purchase for special size and shape stones from EcoTUFF, cu. m. (50% of total), at 30,000 AMD per cu. m.	500

The standard products will also be available in large construction stores and warehouses; hence, smaller firms and individuals will also be able to purchase our main products (Products # 1 and 2). Additionally, customers can contact us through different communication means (social media, web site, telephone,

etc.), if they want to order and buy special shaped stones for their renovation/restoration works.

It is envisioned, that because of the high quality and low price of the product, and as a result of our marketing efforts our sales will increase at least at 5% annual rate during first 5 years of our work:

Demand Estimations

		Year 1	Year 2	Year 3	Year 4	Year 5
Product 1 (AMD, at 3,600)	Sales volume (sq. m.)	10,500	11,025	11,576	12,155	12,763
	<i>Sales volume (in equivalent cubic meters)</i>	525	551	579	608	638
	Revenue (AMD)	37,800,000	39,690,000	41,674,500	43,758,225	45,946,136
Product 2 (AMD, at 200)	Sales volume (units)	175,000	183,750	192,938	202,584	212,714
	<i>In equivalent cu. m.</i>	2,100	2,205	2,315	2,431	2,553
	Revenue (AMD)	35,000,000	36,750,000	38,587,500	40,516,875	42,542,719
Product 3 (AMD, at 30,000)	Sales volume (cu. m.)	500	525	551	579	608
	Revenue (AMD)	15,000,000	15,750,000	16,537,500	17,364,375	18,232,594
Total Sales (cu. m.)		3,125	3,281	3,445	3,618	3,799
Total Sales (AMD)		87,800,000	92,190,000	96,799,500	101,639,475	106,721,449
Total Sales (USD)		\$182,916	\$192,062	\$201,665	\$211,748	\$222,336
Total Sales (EUR)		€165,660	€173,940	€182,640	€191,770	€201,360

As we mentioned earlier, the company is primarily targeting large construction companies, which are engaged in construction of large residential and commercial buildings. Residential and commercial construction projects are at high and continuously growing level and we are sure our sales will also increase. It is important to realize that we have a very unique and much-needed product.

Trends in your chosen market are: (Use as many fields as is applicable and add more if you need to.)

Our target market is construction sector, which, from our perspective, first includes constructors of large-scale residential and commercial buildings, as well as those involved in construction of private houses, special construction projects and so on.

The construction market represents a significant percentage of the economy of Armenia and continues growing at a steady rate.

How you know this: (Use as many fields as is applicable and add more if you need to.)

1. Based on the data presented by the National Agency of Statistics of Armenia, the construction industry composed more than 20% of the gross domestic product (GDP). This number went down during recession years of 2008-2010, but starting from 2010 represented about 7-10% of GDP.
2. In 2018 the GDP showed about 5% annual growth, and the construction industry represented about 7% of GDP.
3. In absolute values, in 2018 the overall output of the construction industry was about €765,000,000.
4. Based on our observation the construction of residential and commercial buildings, which is our main target market, represents a steadily growing and significant sector of the industry; and our sales are going to represent a very small portion (0.02%) of that industry. This means that we have great growing opportunities in the local market, as well as in the construction markets of neighbouring countries.

10 Profiling customers

The customer groups you will be selling to are: (Use as many fields as is applicable and add more if you need to.)

1. Large residential and commercial buildings' construction companies
2. Special construction companies involved in historical restoration works
3. Private builders and so on

Your customer research has shown what your customers want is: (Use as many fields as is applicable and add more if you need to.)

4. Multicolour exterior and interior panels
5. Multicolour and surface finished brick like stones, hollow blocks
6. Multicolour and surface finished, special shaped and sculpted architectural elements (copestones, trimmings, etc.)
7. Multicolour and surface finished acid resistant stone panels and bricks of special purposes for use in industrial construction
8. Multicolor and surface finished fire resistant tiles and bricks of special purposes, operating at temperatures of up to 700-900°C, for use in energy and industrial construction

How you know this: (Use as many fields as is applicable and add more if you need to.)

9. Survey results
10. Opinions of field experts, specialists
11. Results of research

Number of customers you expect to win in each group and what they might pay: (Use as many fields as is applicable and add more rows if you need to.)

Group	Number of customers	Price they might pay per unit
Construction companies	70	€0.4-6.8
Companies involved in restoration works	10	€56.6
Private builders	-	€ -

11 Profiling competitors

Use as many fields as is applicable in the table below and add more rows if you need to.

Competitor name	Strengths	Weaknesses
<ul style="list-style-type: none">• General producers of natural tuff tiles and stones	<ul style="list-style-type: none">• low density• natural colour• frost resistant	<ul style="list-style-type: none">• not water resistant
<ul style="list-style-type: none">• General producers of concrete made tiles and panel	<ul style="list-style-type: none">• high strength• frost resistant	<ul style="list-style-type: none">• high cost• artificial colouring• physical-mechanical characteristics

How you can improve on their offer and/or price(s): (Use as many fields as is applicable and add more if you need to.)

1. Further investigation of production technologies, which will lead to price reductions and quality improvements
2. Regular customer surveys to learn about changing customer wants and needs and development of relevant products and provision of new services
3. Long-term, sustainable contracts with suppliers to ensure continuing supply of raw material, at the lowest possible prices
4. Usage of laboratory and other scientific-research capabilities for developing higher quality products and acquisition of patents for those products

12 Managing market risks

Write down the risks you have identified: (Use as many fields as is applicable and add more if you need to.)

1. Threat of new entrants
2. Lack of supply or irregular supply of stone waste materials
3. Lack of knowledge about the product
4. Perception among buyers that the product quality is low

How will you manage these risks so that they become less of a threat: (Use as many fields as is applicable and add more if you need to.)

1. Further development of production technologies, as well as getting patents for existing ones
2. Long-term planning of production processes, establishment of long-term, sustainable partnerships with main suppliers and preliminary investigation for substitute ram materials
3. Intensive marketing and promotion of all products, during initial and subsequent stages of the business operation
4. Intensive, direct marketing efforts with main buyers – major construction companies and major actors in construction industry (architects, designers, civil engineers, researchers and so on)

13 Pricing

How you can calculate your prices: (Use as many fields as is applicable and add more if you need to.)

In our pricing we have used competitive market pricing methodology. First, we have studied wholesale and retail prices for similar products, available on the market. Then, we have priced our products at 40-50% below those prices. This will allow us to occupy a competitive position in the market, because of high quality and low price of our products.

We still have made sure that our prices allow us to cover all production and company overhead costs and have decent profit margin.

When calculating the product cost, we have considered:

- Material costs (mostly variable costs)
- Labor costs (mostly variable costs)
- Overhead (fixed costs)

Our financial calculations show, that at current prices, the company will work at 24-26% profit.

How your prices compare with the competition: (Use as many fields as is applicable in the table below and add more rows if you need to.)

Product/service	Your price(s)	Range of competitor prices (per unit)
Annual purchase of exterior/interior tiles from EcoTUFF, sq. m. (5% of total), per sq. m.	€6.8	€13.2
Average purchase of stone-like bricks from EcoTUFF, units (5% of total), per unit	€0.4	€0.7
Annual purchase for special size and shape stones from EcoTUFF, cu. m. (50% of total), per cu. m.	€56.6	€79

Reasons for the difference between your price(s) and your competitors' price(s):

- Even though our products' quality is higher or comparable with the natural stone products, our prices are lower, because of our low-energy consumption and low cost of raw materials
- For special size or shape, molded, architectural stones our prices are much lower, because instead of high cost hand carving we use molds, for making those stones

Production/Operational Plan

The production technology of EcoTUFF stones, includes the following key processes:

- Transportation of stone wastes and from the mine site to the plant, their drying, sieving, separating into fractions and storage
- Mixing and storage of the resulting composite dry binder in hermetic conditions
- Preparation of the initially prepared stone shallow solid mixture by mixing in compact concrete mixer, using developed technologies
- Molding of the initially prepared stone shallow solid mixture
- Drying of the molded semi-product and heat treatment in periodic or continuous furnaces by processed regimes and cooling
- Storage of prepared products

As a result of our research in the local market we will pre-made and store products of standard size: exterior/interior panels and brick like stones. The special size/shape architectural stones will be prepared only after orders are received.

Strengths and Weaknesses

It is important that we know our strength, our weaknesses, and the opportunities that we can leverage on in the construction industry and the threats that we are likely going to be confronted with. With that, we will be able to map out strategies that will not only help us to survive in the industry but also to build a global construction brand. The results of the EcoTuff analysis are as follows:

- **Strengths:**

EcoTuff can confidently boast of having a competent and highly experienced management team who will be regarded as some of the best hands in Armenia. Although we will form a new construction materials production company, our staff is very professional and will be able to handle all production, product development and marketing activities very effectively and efficiently. We will form a construction company that has a broad network that is suitable for the kind of business we are into.

As a major and targeted development for our EcoTuff product, we consider the widespread use of our eco-material in the 3D production area. The physical characteristics of the material will allow it to be used extensively in the preparation of any 3D model using all the innovative 3D printing methods. The application of our products in such a field is planned for the next stage of operation, hopefully in 2-3 years.

- **Weaknesses:**

The fact that we are a new construction company could count as a weakness. We understand, that it is normal for clients to think twice before placing an order with newcomers, like us, in the industry. Another weakness that can count against us in the industry is the fact that we may not have the financial capabilities to drive the business the way we ought to drive it. We need some financial base to

be able to acquire equipment and raw materials to start our production.

14 Promotion and advertising

How and where will you promote your product/service? (Use as many fields as is applicable and add more if you need to.)

EcoTUFF will concentrate its promotional activities on the Internet and various social media, as well as radio, special events, incentives and brochures. Those direct marketing tools (Internet and social media) will also be used for making product announcements, informing about special promotions, order confirmations, as well as making customer inquiries.

The company will utilize personal selling as a more efficient mean of contacting main, targeted construction companies, presenting offered products and establishing long-lasting contacts/alliances.

A fixed amount of sales revenue will go toward the EcoTUFF marketing/advertisement campaign. EcoTuff will also gain considerable recognition through these additional promotional mediums:

- Brochures
- Caps and T-shirts
- Signs/logos
- Incentives

The objective of a brochure is to portray Eco Tuff's goals and products as an attractive functionality. It is also to show customers how to use the latest in technology as it relates to construction and building services. As an extra incentive for customers and potential customers to remember Eco Tuff's name, the company plans to distribute coffee mugs, T-shirts, pens, and other advertising specialties with the company logo.

- **Investment in Advertising and Promotion:**

A fixed amount of sales revenues will go toward the nationwide EcoTuff advertisement campaign. On an

ongoing basis, EcoTuff predicts that it can budget overall promotional expenses at 5% of revenue

Running the business

15 Staff

Use as many fields as is applicable in the table below and add more rows if you need to.

Role	Total cost	Necessary experience	Specialist skills and/or qualifications
<ul style="list-style-type: none"> General Manager (Chief Executive Officer – CEO) 	€0	<ul style="list-style-type: none"> Production and Management experience, knowledge of production technologies 	<ul style="list-style-type: none"> Creates, communicates, and implements the organization's vision, mission, and overall direction for the business – i.e. leading the development and implementation of the overall organization's strategy
<ul style="list-style-type: none"> Marketing and New Product Development Manager 	€0	<ul style="list-style-type: none"> Product designing and development, general design experience, marketing and management skills 	<ul style="list-style-type: none"> Responsible for designing all new products, including panels and special size/shape stones, as well as molds for all those products, also by using special computer – aided design (CAD) software programs
<ul style="list-style-type: none"> Production Manager 	€0	<ul style="list-style-type: none"> Product and Technological knowledge and experience, Production Knowledge 	<ul style="list-style-type: none"> Direct supervision of all work at the job site Quality and cost control Supervision of hoist-excavators in mining, dumping trucks Control of drying drum, granular sorting system, cyclone systems, rectifier, internal transfer conveyors

<ul style="list-style-type: none"> • Chief Accountant/Bookkeeper 	€285, per month	<ul style="list-style-type: none"> • Accounting, bookkeeping, financial reporting and analyses experience 	<ul style="list-style-type: none"> • Oversees financial, analyses and bookkeeping tasks of the organization
<ul style="list-style-type: none"> • Admin and HR Specialist 	€190, per month	<ul style="list-style-type: none"> • HR and administrative management skills 	<ul style="list-style-type: none"> • Oversees HR and administrative tasks of the organization
<ul style="list-style-type: none"> • Workers 	€ 14 for 1 cu. m	<ul style="list-style-type: none"> • 	<ul style="list-style-type: none"> • Is directly involved in production of all stones

16 Premises

	Rental Cost, €
Premises required at start-up: office space, storage, main production shop, kitchen and restrooms, total 1,000 sq. m.	11,320 annually

17 Suppliers

Your key suppliers and their credit terms: (Use as many fields as is applicable and add more rows if you need to.)

Supplier	What you'll buy from them	Number of days' credit
<ul style="list-style-type: none">Stone miners/cutters	<ul style="list-style-type: none">Stone waste materials	<ul style="list-style-type: none">30

18 Equipment

Use as many fields as is applicable and add more rows if you need to.

Resource	When	How funded	Cost € per unit
• Dryer	• Year 0	• 2,000,000	€3,774
• Mixer	• Year 0	• 1,000,000	€1,887
• Molds	• Year 0	• 3,000,000	€5,660
• Sieves	• Year 0	• 750,000	€1,415
• Molds	• Year 1	• 3,000,000	€5,660
• Molds	• Year 2	• 3,000,000	€5,660
• Molds	• Year 3	• 3,000,000	€5,660
• Molds	• Year 4	• 3,000,000	€5,660
• Molds	• Year 5	• 3,000,000	€5,660
• Sieves	• Year 3	• 750,000	€1,415

19 Managing operational risks

19.1 Strategy and Implementation Summary

The company's overall strategy is based on formulation, effective implementation and continuous update of goals and objectives, as well as measurement of results and utilization of feedback to facilitate further growth and progress. The company plans to rapidly develop marketing alliances with industry leaders and pursue new sales from residential and commercial builders. The market strategy is to capitalize on EcoTuff alliances and secure mostly private, as well as government contracts.

EcoTUFF plans to:

- Significantly expand into the construction and architectural restoration markets to improve profit margins and increase local market share
- Expand services and decrease costs by creating a permanent designing crew, as well as by adding a bookkeeper and an accountant to our staff
- Begin to market and offer services in the whole territory of Armenia and neighboring countries

19.2 Competitive Edge

Our offered non-cement stone products are entirely new, and we are introducing it into the growing industry of residential and commercial buildings. Our products have features similar to those of natural stone products. Because they use vastly available natural stone wastes, they can be produced and sold at lower prices and, even more importantly, they will help to solve a serious environmental problem by cleaning natural stone wastes.

In sum, by comparing features of non-cement stone products with similar natural (tuff) stone products, we can record the following:

- Because of availability of large volumes of cheap volcanic raw multicolored stone waste materials, it is possible to organize the production of non-cement stone products at relatively low production costs. The offered new product will have physical and mechanics properties similar to natural stones.
- The proposed non cement stone products practically do not differ from natural stones by their color and texture. Also, if necessary, it is possible to produce products with higher strength parameters.

Additionally, comparison of offered non-cement artificial stone products with cement stone products available in the market, allows to record:

- Unlike the proposed non cement products, the cement-based stone products differ greatly in their color and texture parameters from both natural and suggested artificial stone products, which, in some way, aesthetically devalue them.
- Cement based products have lower frost resistance and durability characteristics, when comparing both with the natural stones and offered non-cement ones.
- Unlike the proposed non cement products, the cement-based stones require usage of valuable chemical additives, as well as color pigments, which increase their production costs.
- At the same time, it is hard and in most cases impossible for such artificial stone materials to imitate the natural stone colors and texture. This is not a problem in the case of artificial non-cement stones offered by our company.

Quality control is very important for our continuous success. Keeping this in mind, we will control our raw materials, equipment and production processes to assure that quality is met and sustained.

19.3 Keys to Success

The local, Armenian residential and commercial construction market is very active and growing at the moment. In order to achieve a favorable position in this environment, EcoTUFF plans to concentrate on accomplishment of the following objectives:

- Secure at least five large scale commercial contracts over the next 6 to 12 months
- Organize active and effective marketing campaign to inform all potential customers, representing target groups, about the product
- Have efficiently organized production and quality control activities to secure consistent high quality of products and reduction of production costs
- Expand customer base through expansion into other geographic areas to retain a sufficient level of profitability

19.4 Sales Strategy

The company's overall strategy is based on a continuous improvement process of setting objectives, measuring results, and utilizing feedback to facilitate further growth and progress.

The company plans to rapidly develop marketing alliances with industry leaders and pursue new sales from residential and commercial builders.

EcoTUFF products will initially be marketed in the capital city of Armenia – Yerevan, where most of the country's construction projects are currently undertaken. The marketing activities will be gradually expanded into neighboring and other regions of Armenia. In the near future, we will start offering our products in neighboring countries.

The construction industry is on the move and we intend to have our percentage of this long lasting industry. Our market inquiries have shown that EcoTUFF products will be highly demanded in the market.

Our sales program will include:

- Developing lists and establishing contacts with residential and commercial contractors
- Contacting developers of residential and commercial properties
- Organizing meetings and other events and presenting products and explaining its advantages
- Conducting special advertising on the Internet and social media
- Setting up advertising for local and national programs
- Participating at national and regional trade shows
- Employment of company sales representatives
- Contacting major architectural firms

19.4.1 Sales Forecast

The following chart outlines our sales forecast for five years:



19.5 Strategic Alliances

The company plans to rapidly develop marketing alliances with industry leaders and pursue new sales of its services to residential and commercial builders.

19.6 Promotion

EcoTUFF will concentrate its promotional activities on the Internet and various social media, as well as radio, special events, incentives and brochures. Those direct marketing tools (Internet and social media) will also be used for making product announcements, informing about special promotions, order confirmations, as well as making customer inquiries.

The company will utilize personal selling as a more efficient mean of contacting main, targeted construction companies, presenting offered products and establishing long-lasting contacts/alliances.

A fixed amount of sales revenue will go toward the EcoTUFF marketing/advertisement campaign.

EcoTuff will also gain considerable recognition through these additional promotional mediums:

- Brochures
- Caps and T-shirts.
- Signs/logos
- Word of mouth.
- Incentives:

The objective of a brochure is to portray Eco Tuff's goals and products as an attractive functionality. It is also to show customers how to use the latest in technology as it relates to construction and building services. As an extra incentive for customers and potential customers to remember Eco Tuff's name, the company plans to distribute coffee mugs, T-shirts, pens, and other advertising specialties with the company logo.

- **Investment in Advertising and Promotion:**

A fixed amount of sales revenues will go toward the nationwide EcoTuff advertisement campaign. On an ongoing basis, EcoTuff predicts that it can budget overall promotional expenses at 5% of revenue.

Risk	Solution
<p>Staff</p> <ul style="list-style-type: none"> • The major staff-related risk is loss of interest among partners and their intention to leave the endeavour • Workers' complaints about payments and work conditions 	<ul style="list-style-type: none"> • This will be mitigated by having a signed contract among partners, indicating tasks and future benefits. Additionally, partners actively look for funding to start their idea as soon as possible and start getting good results. In the future, partners will train new people and find replacements for themselves. • Before joining the company, the workers will be informed about payment and other work conditions, which will be regularly monitored. Additionally, workers will be asked for their feedback on work conditions and regular improvements will be made.
<p>Suppliers</p> <ul style="list-style-type: none"> • Unreliability of suppliers of stone waste materials • As demand increases, increase in the price of raw materials 	<ul style="list-style-type: none"> • Establishment of long-term partnerships and signing contracts with main suppliers. Timely payment on supplies and following other conditions, envisioned by the contract. Continues expansion of the list of possible suppliers. • Establishment of long-term relationships with suppliers, as well as searching for substitute products

20 Start-up costs

	Year 0	Year 1
Raw material	-	11,718,750
Production workers' salary	-	11,718,750
Marketing costs	-	2,118,175
Other direct costs	-	847,270
Rent/space costs	1,500,000	6,000,000
Utility payments	300,000	425,000
Equipment Purchase and Renovation	6,750,000	3,000,000
Management salaries	1,000,000	1,500,000
Other fixed costs	300,000	500,000
Total investment (AMD)	9,850,000	37,827,945
Total investment (USD)	\$ 20,521	\$ 78,808
Total investment (EUR)	€18.500	€70.927

- In year 0 the company will need 18,450 EUR for covering equipment purchase costs, as well as operational expenses for three initial months - necessary for setting up the company operations/production.
- In Year1 the company will need additional 70,920 EUR for covering equipment purchase and annual rental costs, as well as for making payments for 50% of planned operational and raw material purchase expenditures (during first six months), before the company production becomes fully operational and starts making regular sales and receiving cash form its sales.
- About 50% of needed investment of about €90.000 will be paid back at the end of Year 1, while the remaining 50% will be paid back in Years 2 and 3.

21 Profit and loss forecast (Use the tabs within the Microsoft Excel work sheet to view the second year and third year forecast templates. The profit and loss forecast is more detailed at the start because you should have a clearer idea of your profit and loss expectations.)

Year	Year 1	Year 2	Year 3	Year 4	Year 5
	(AMD)	(AMD)	(AMD)	(AMD)	(AMD)
Total Sales (cu. m.)	3,125	3,281	3,445	3,618	3,799
Revenue					
Sales Product 1	37,800,000	39,690,000	41,674,500	43,758,225	45,946,136
Sales, Product 2	35,000,000	36,750,000	38,587,500	40,516,875	42,542,719
Sales, Product 3	15,000,000	15,750,000	16,537,500	17,364,375	18,232,594
Total sales(AMD)	87,800,000	92,190,000	96,799,500	101,639,475	106,721,449
Sales Tax (3.5%)	3,073,000	3,226,650	3,387,983	3,557,382	3,735,251
Net Sales (AMD)	84,727,000	88,963,350	93,411,518	98,082,093	102,986,198
Variable Costs					
Raw material (at 7,500 AMD for 1 cu. m.)	23,437,500	24,607,500	25,837,500	27,135,000	28,492,500
Production workers' salary (7,500 AMD for 1 cu. m.)	23,437,500	24,607,500	25,837,500	27,135,000	28,492,500
Marketing costs (at 5% of Net Sales)	4,236,350	4,448,168	4,670,576	4,904,105	5,149,310
Other direct costs (2% of Net Sales)	1,694,540	1,779,267	1,868,230	1,961,642	2,059,724
Total Variable Costs (AMD)	52,805,890	55,442,435	58,213,806	61,135,747	64,194,034
Total Contribution (AMD)	31,921,110	33,520,916	35,197,711	36,946,347	38,792,164
Fixed Costs					
Rent/space costs	6,000,000	6,000,000	6,000,000	6,000,000	6,000,000
Utility payments	850,000	900,000	1,000,000	1,100,000	1,150,000
Depreciation expense	337,500	487,500	637,500	825,000	975,000
Management salaries	3,000,000	3,000,000	3,000,000	3,000,000	3,000,000
Other fixed costs	1,000,000	1,000,000	1,000,000	1,000,000	1,000,000
Total Fixed Costs (AMD)	11,187,500	11,387,500	11,637,500	11,925,000	12,125,000
Net Profit (AMD)	20,733,610	22,133,416	23,560,211	25,021,347	26,667,164
Net Profit (USD)	\$ 43,195	\$ 46,111	\$ 49,084	\$ 52,128	\$ 55,557
Net Profit (EUR)	€ 38,875	€41,500	€44,175	€46,915	€50,000
Profitability	24%	25%	25%	26%	26%

22 Sourcing finance

Financial Plan

In this section the financial projections (pro-forma profit/loss and cash flow statements) for EcoTuff, for the next five years are presented. These are conservative estimates of revenues, expenses, profit, cash inflows/outflows and growth. We plan to base dividend payouts on overall performance and health of the company and may decide to retain most of the earnings for future growth.

22.1 Important Assumptions

We have based our calculations on the following assumptions:

1. All financial calculations are done for five years and presented in Armenian Drams (AMD)
2. In those calculations three major products are included
 - a. Product #1 – exterior/interior panels
 - b. Product #2 – brick like stones
 - c. Product #3 – special size/shape architectural stones
3. All sales volumes are presented in equivalent cubic meters
4. Sales volumes increase at 5% annual rate
5. The company pays 3.5% sales tax
6. The raw material acquisition cost is 7,500 AMD (€14.1) for 1 cubic meter, delivered to the factory
 - a. The average sales price is about 28,100 AMD (€53) for 1 cubic meter
7. Production workers receive 7,500 AMD (\$14,1) salary for 1 cubic meter of product
8. All management employees receive 3,000,000 AMD (€5,660) annual fixed salary for their work, this excludes three partners, who do not get regular salaries, but will receive dividends in case of profitability
9. The company rents 1,000 sq. m. production/office space at 6,000,000 AMD (€11,320) annual market price
 - a. No renovation costs are envisioned, as the company plans to rent a fully renovated space
10. The company needs to buy the following equipment, at the following prices (in AMD):

	Year 0	Year 1	Year 2	Year 3	Year 4	Year 5
Dryer	2,000,000					
Mixer	1,000,000					
Molds*	3,000,000	3,000,000	3,000,000	3,000,000	3,000,000	3,000,000
Sieves	750,000			750,000		
Total	6,750,000	3,000,000	3,000,000	3,750,000	3,000,000	3,000,000

- a. *One mold – for 50 cu. m. of product at 50,000 AMD (€94), total – 360 molds
- b. The equipment depreciation period is 20 years
- c. The company cooperates with the university for organizing laboratory experiments, which can be part of the university formal educational program

22.2 Profit/Loss Calculations

In the following table, the company profit/loss calculations for the next five years are presented:

Year	Year 1	Year 2	Year 3	Year 4	Year 5
	(AMD)	(AMD)	(AMD)	(AMD)	(AMD)
Total Sales (cu. m.)	3,125	3,281	3,445	3,618	3,799
Revenue					
Sales Product 1	37,800,000	39,690,000	41,674,500	43,758,225	45,946,136
Sales, Product 2	35,000,000	36,750,000	38,587,500	40,516,875	42,542,719
Sales, Product 3	15,000,000	15,750,000	16,537,500	17,364,375	18,232,594
Total sales(AMD)	87,800,000	92,190,000	96,799,500	101,639,475	106,721,449
Sales Tax (3.5%)	3,073,000	3,226,650	3,387,983	3,557,382	3,735,251
Net Sales (AMD)	84,727,000	88,963,350	93,411,518	98,082,093	102,986,198
Variable Costs					
Raw material (at 7,500 AMD for 1 cu. m.)	23,437,500	24,607,500	25,837,500	27,135,000	28,492,500
Production workers' salary (7,500 AMD for 1 cu. m.)	23,437,500	24,607,500	25,837,500	27,135,000	28,492,500
Marketing costs (at 5% of Net Sales)	4,236,350	4,448,168	4,670,576	4,904,105	5,149,310
Other direct costs (2% of Net Sales)	1,694,540	1,779,267	1,868,230	1,961,642	2,059,724
Total Variable Costs (AMD)	52,805,890	55,442,435	58,213,806	61,135,747	64,194,034
Total Contribution (AMD)	31,921,110	33,520,916	35,197,711	36,946,347	38,792,164
Fixed Costs					
Rent/space costs	6,000,000	6,000,000	6,000,000	6,000,000	6,000,000
Utility payments	850,000	900,000	1,000,000	1,100,000	1,150,000
Depreciation expense	337,500	487,500	637,500	825,000	975,000
Management salaries	3,000,000	3,000,000	3,000,000	3,000,000	3,000,000
Other fixed costs	1,000,000	1,000,000	1,000,000	1,000,000	1,000,000
Total Fixed Costs (AMD)	11,187,500	11,387,500	11,637,500	11,925,000	12,125,000
Net Profit (AMD)	20,733,610	22,133,416	23,560,211	25,021,347	26,667,164
Net Profit (USD)	\$ 43,195	\$ 46,111	\$ 49,084	\$ 52,128	\$ 55,557
Net Profit (EUR)	€38,875	€41,500	€44,175	€46,915	€50,000
Profitability	24%	25%	25%	26%	26%

Based on the presented pro-forma profit/loss calculations, the company operates with average 25% annual profitability. Even in Year 1, the company makes \$43,000 (24%) net profit and its overall

contribution (Revenue minus Variable Costs) is €59,850 (37.7%).

22.2 Break-Even Analysis

Starting from Year 1 company has significant and growing profit.

In Year 1 the company reaches its Break-Even Point at about 1,000 cubic meters of sales. In year 1:

- the fixed cost is 11,187,500 AMD (€ 20,970)
- average sales price is 28,100 AMD (€52.7) for 1 cubic meter of product
- variable cost is 16,900 AMD (€31.7) for 1 cubic meter

$$\text{Break Even Point} = \frac{\text{€}20,970}{(\text{€}52,65 - \text{€}31,68)} = 1,000 \text{ (cubic meters)}$$

22.4 Cash Flow Calculation

In the following table, the company cash flow calculations for the next five years are presented. In those calculations we have also included initial three months (in Year 0), which are needed for setting up operations and production, as well as for hiring main personnel and purchasing necessary equipment:

Year	Year 0	Year 1	Year 2	Year 3	Year 4	Year 5
	(AMD)	(AMD)	(AMD)	(AMD)	(AMD)	(AMD)
Cash Inflow						
Sales Product 1	0	37,800,000	39,690,000	41,674,500	43,758,225	45,946,136
Sales, Product 2	0	35,000,000	36,750,000	38,587,500	40,516,875	42,542,719
Sales, Product 3	0	15,000,000	15,750,000	16,537,500	17,364,375	18,232,594
Total sales(AMD)	0	87,800,000	92,190,000	96,799,500	101,639,475	106,721,449
Sales Tax (3.5%)	0	3,073,000	3,226,650	3,387,983	3,557,382	3,735,251
Total Cash Inflow (AMD)	0	84,727,000	88,963,350	93,411,518	98,082,093	102,986,198
Cash Outflow						
Raw material		23,437,500	24,607,500	25,837,500	27,135,000	28,492,500
Production workers' salary		23,437,500	24,607,500	25,837,500	27,135,000	28,492,500
Marketing costs		4,236,350	4,448,168	4,670,576	4,904,105	5,149,310
Other direct costs		1,694,540	1,779,267	1,868,230	1,961,642	2,059,724
Rent/space costs	1,500,000	6,000,000	6,000,000	6,000,000	6,000,000	6,000,000
Utility payments	300,000	850,000	900,000	1,000,000	1,100,000	1,150,000
Equipment Purchase	6,750,000	3,000,000	3,000,000	3,750,000	3,000,000	3,000,000
Management salaries	1,000,000	3,000,000	3,000,000	3,000,000	3,000,000	3,000,000
Other fixed costs	300,000	1,000,000	1,000,000	1,000,000	1,000,000	1,000,000
Total Cash Outflow (AMD)	9,850,000	66,655,890	69,342,435	72,963,806	75,235,747	78,344,034
Net Cash						
Net Cash (AMD)	(9,850,000)	18,071,110	19,620,916	20,447,711	22,846,347	24,642,164
Net Cash	\$ (20,521)	\$ 37,648	\$ 40,877	\$ 42,599	\$ 47,597	\$ 51,338

(USD)						
Net Cash (EUR)	€18,470	€33,883	€36,790	€38,340	€42,840	€46,200

Based on the presented cash-flow calculations, the company operates with cash surplus starting from Year 1. This is without considering dividends to be paid to the three founders/partners of the company.

Based on the presented numbers, the **NPV** (Net Present Value) of proposed business activities is **€133,560**, calculated at 9% annual interest rate. For the simplicity, in our calculation of the NPV we haven't included future cash surpluses and company growth (at 5%, annually), as well as potential dividends to be paid to the three partners.

22.5 Investment Needs

To start its operations, the company needs the following funds in Year 0 and Year 1:

	Year 0	Year 1
Raw material	-	11,718,750
Production workers' salary	-	11,718,750
Marketing costs	-	2,118,175
Other direct costs	-	847,270
Rent/space costs	1,500,000	6,000,000
Utility payments	300,000	425,000
Equipment Purchase and Renovation	6,750,000	3,000,000
Management salaries	1,000,000	1,500,000
Other fixed costs	300,000	500,000
Total investment (AMD)	9,850,000	37,827,945
Total investment (USD)	\$ 20,521	\$ 78,808
Total investment (EUR)	€18,470	€70,927

- In year 0 the company will need 20,500 USD for covering equipment purchase costs, as well as operational expenses for three initial months - necessary for setting up the company operations/production.
- In Year1 the company will need additional 78,800 USD for covering equipment purchase and annual rental costs, as well as for making payments for 50% of planned operational and raw material purchase expenditures (during first six months), before the company production becomes fully operational and starts making regular sales and receiving cash form its sales.
- About 50% of needed investment of about \$100,000 will be paid back at the end of Year 1, while the remaining 50% will be paid back in Years 2 and 3.

23 Managing financial risks (such as, sales are less than forecasted or start-up finance takes three months longer to obtain)

The risks that you have identified for your financial forecast are: (Use as many fields as is applicable and add more if you need to.)

1. The company is not able to make as much sales, as it is planned
2. Because of higher demand, the stone miners plan to charge more for their stone wastes (main raw material)
3. Workers demand higher salary

How you will minimise their impact: (Use as many fields as is applicable and add more if you need to.)

1. If the targeted sales levels are not reached, the company will work on additional marketing/promotion, it will also strive to minimize fixed costs, while variable costs are directly linked with sales volumes
2. To minimize the risk of increasing prices for raw materials, the company will strive to establish long-term working relationships with the main suppliers. In its marketing campaigns, it will also emphasize the fact that it cleans the environment. This will become an extra incentive for suppliers to work with our company. Additionally, the company will continue working on finding additional substitute materials, preferably other stone waste materials.
3. The company will establish longer-term and honest relationships with the company workers. They will be informed about main decisions made by the management. They will also participate in future profit sharing.
4. After finding an appropriate place, the company will strive to sign a longer-term rental agreement, which cannot be easily terminated by the landlord. In the future it may also look for opportunities to purchase or build its own space.

23 Cash flow forecast

Year	Year 0	Year 1	Year 2	Year 3	Year 4	Year 5
	(AMD)	(AMD)	(AMD)	(AMD)	(AMD)	(AMD)
Cash Inflow						
Sales Product 1	0	37,800,000	39,690,000	41,674,500	43,758,225	45,946,136
Sales, Product 2	0	35,000,000	36,750,000	38,587,500	40,516,875	42,542,719
Sales, Product 3	0	15,000,000	15,750,000	16,537,500	17,364,375	18,232,594
Total sales(AMD)	0	87,800,000	92,190,000	96,799,500	101,639,475	106,721,449
Sales Tax (3.5%)	0	3,073,000	3,226,650	3,387,983	3,557,382	3,735,251
Total Cash Inflow (AMD)	0	84,727,000	88,963,350	93,411,518	98,082,093	102,986,198
Cash Outflow						
Raw material		23,437,500	24,607,500	25,837,500	27,135,000	28,492,500
Production workers' salary		23,437,500	24,607,500	25,837,500	27,135,000	28,492,500
Marketing costs		4,236,350	4,448,168	4,670,576	4,904,105	5,149,310
Other direct costs		1,694,540	1,779,267	1,868,230	1,961,642	2,059,724
Rent/space costs	1,500,000	6,000,000	6,000,000	6,000,000	6,000,000	6,000,000
Utility payments	300,000	850,000	900,000	1,000,000	1,100,000	1,150,000
Equipment Purchase	6,750,000	3,000,000	3,000,000	3,750,000	3,000,000	3,000,000
Management salaries	1,000,000	3,000,000	3,000,000	3,000,000	3,000,000	3,000,000
Other fixed costs	300,000	1,000,000	1,000,000	1,000,000	1,000,000	1,000,000
Total Cash Outflow (AMD)	9,850,000	66,655,890	69,342,435	72,963,806	75,235,747	78,344,034
Net Cash						
Net Cash (AMD)	(9,850,00)	18,071,110	19,620,916	20,447,711	22,846,347	24,642,164
Net Cash (USD)	\$(20,521)	\$ 37,648	\$ 40,877	\$ 42,599	\$ 47,597	\$ 51,338
Net Cash (EUR)	€(18.470)	€33.883	€36.790	€38.340	€42.837	€35.937

