Chapter 3
Feasibility Analysis

This table explains which sections of the Business Plan are completed in each chapter of the toolkit:

Toolkit Chapters:	Business Plan Section Titles:
Chapter 1	Business Description
Chapter 2	Opportunity
Chapter 3	Marketing Competition Operations Technology Finance
Chapter 4	Schedule Impacts Closing and Executive Summary

The purpose of a feasibility analysis is to assess the viability of a business. In summary, in Chapter 1 you collected information concerning your business idea and wrote your first draft of the business description. Chapter 2 explained why data collection important and necessary before writing a business plan and finally assisted in outlining methods for gathering vital information. In this chapter you will use this data to analyze whether or not the business will work, meaning can you sell sufficient product to produce a constant revenue stream? In order to answer this question, you will develop a marketing plan, operational strategy, schedule, and initial financial calculations.

1. FEASIBILITY DEFINED

What are the characteristics that indicate an energy business is feasible?

When land, fuel, technology, team, customers and permits are available and when putting these ingredients together makes financial, social and environmental sense, then a business is feasible. Determining the feasibility of a business doesn't guarantee that it will be funded or implemented – too many other things outside of your control can go wrong -- but it does set the stage for presenting the business to reasonable people for technical and financial participation. The goal of a feasibility analysis is for you to demonstrate that the pieces of the business can be put together well enough to present it to others.

A renewable energy business makes sense and is feasible when:

1. The energy product produced can be sold to one or more credit-worthy customers.
2. A competitive strategy has been developed to ensure sufficient demand for the product or service.
3. A practical and efficient marketing and operation plan has been developed.
4. The business is compatible with local and country energy plans for energy service delivery.
5. The commercial, political and social setting of the business will instill confidence in suppliers, contractors, investors, lenders and insurers.
6. The team has sufficient experience and skills to design, build and operate the business.
7. Qualified suppliers, contractors and consultants are available and have expressed interest in the business.
8. Natural Resources – wind, water, biomass, and sunlight – are available in predictable and sufficient quantity.
9. The available natural resources can be converted to energy using available proven technology.
10. Contractual rights to use these natural resources (water and biomass) can or have been obtained.

11. Land needed for the business (manufacturing site or generation site) can or has been secured and access to the site assured.
12. All the permits needed to design, build and operate the business can be obtained in a timely manner.
13. Reasonable estimates have been made of all revenue, capital and operating costs, including contingency allowances and taxes.
14. Revenues are sufficient to pay operating costs, repay loans and provide adequate returns to investors.
15. There is local or international interest in providing loans and investment capital.

2. OPPORTUNITY ANALYSIS

In chapter 1 you defined your potential customers and gathered information about them. This included details of their location, income, ability to pay, needs, and usage. The goal of this section is to prove that there are sufficient customers that are willing and able to buy your product. In other words, customers believe your product will best serve their needs and they can afford to purchase it. In order to prove this, it is necessary for you to analyze the data you collected and then draw reasonable conclusions. This will be done in an exercise format.

1. How much do potential customers currently pay to meet the need you will fill? List the need.

   ________________per____________________for________________________

   EX: 10 US dollars per month for candles, kerosene and battery charging.

2. How many customers said they would be willing to purchase your product or service? What is the total market size?

   ____

   EX: 75 households (equal to 25% of those interviewed) said they could afford my product. There are 1000 households in the proposed area of operation.

3. How much do potential customers say they can afford to pay for your product or service?

   ________________per____________________for________________________

   EX: 12 US dollars per month for a 50-watt solar home system for 3 years. This is equal to a total of $432 without interest for providing the system on credit.

4. What do your competitor's sell and how much does it cost?

   ________________per____________________for________________________

   EX: 14 US dollars per month for a 50-watt solar home system for 3 years, which covers the cost of interest.

5. What is the average purchase cost of your product based on quotes from suppliers you contacted? Or what is the average cost of materials if you will manufacture your product or service?

____

EX: $350 for a 50-watt solar home system.

As a result of the analysis in questions 1 through 5 you can now answer the following questions about your opportunity:

6. **What should you set as the maximum price of your product?**

____

EX: 14 US dollars per month for a 50-watt PV system for 3 years ($504 total) which covers the cost of interest.

7. **Why have you selected this price?**

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____
____
____
____

Ex: The sales price should not be greater than $14 per month because I do not want my price to be greater than my nearest competitor and based on my fact-finding sufficient customers said they could pay around $14 per month.

8. **What would you estimate to be the number or percentage of customers that will buy your product for the proposed price and why?**

____
____
____
____
____

Ex: My data collection showed that 25% would pay $12 per month therefore I think it is reasonable to suggest that 15% of the region would pay $14 per month. My business will operate in 3 villages for the first year therefore at least 150 customers will purchase a system in the first year.

The answer to the following and final question will be used throughout the remainder of the chapter.

9. What is the difference between the cost to purchase your product or service (or materials for manufacturing) and the proposed sales price? (Do not include the interest charge for providing the system on a credit basis). Express it also as a percentage by dividing the sales price by the cost.

____

EX: $432 - $350 = $82 and $432 / $350 = 23%[1]. Therefore the difference between the cost and sales price is $82 and the margin between the cost and the sales price is 23%.

In general, a reasonable margin is at least 20%, which must cover your costs of doing business. Your costs of doing business will be calculated next.

In summary, in this section you determined the following:

- ❑ There are a sufficient number of customers to purchase your product or service;
- ❑ The customers are willing and able to purchase it; and
- ❑ The margin between the purchase cost and sales price.

This section of your business plan will concentrate on the first two conclusions above outlining why you believe this business is a good opportunity.

3. MARKET ANALYSIS

The goal of this section is to define a successful plan for marketing your product or service to your customers. A market analysis addresses product pricing, distribution and advertising and promotion.

a. Pricing Choices

In the last section you determined a reasonable sales price based on what your customers are willing and able to pay, what your competition is doing, and the cost to purchase the product or materials. You also calculated the margin between the purchase cost and sales price. You will now learn how to compute the costs of your business – overhead, labor, capital equipment – to verify that the projected margin is sufficient to cover them.

The tricky part of setting the right price is if you set your price too high no one will buy it and if you set it too low you will lose potential profits. Prices should also address the following points:

1. All prices must cover the costs.
2. The simplest and most effective way to lower sales prices is to lower costs.
3. Prices must be evaluated and as necessary changed to reflect constant changes in cost, demand, changes in the market, and responses to competition.
4. Price to sell, rather than pricing purely based on your competition.

Below are definitions of terms that you need to know to develop your price and eventually to prepare your financial analyses:

Cost of Goods Sold:
The cost of goods sold, also called the cost of sales, refers to the cost to you to purchase materials or products from suppliers for resale or manufacturing. The cost of freight and delivery charges should be included in this estimate as well. You should have researched this figure and used it in the last section.

[1] When computed on a calculator, the margin equals 1.23, which is written as 23%.

Operating Expenses:
Operating expenses include the following:

- Labor expenses are the hourly fees or salaries paid to employees of your company. Payroll taxes and benefits, such as medical insurance or vacation time, should be included here as well.
- Professional services are fees paid to people who do not work for the company – contractors, consultants, attorneys, accountants, etc.
- Overhead expenses are all of recurring costs incurred in operating the business. Typically they include all or some of the following:
    - Rent
    - Utilities
    - Vehicle
    - Travel and Entertainment
    - Maintenance and Repair
    - Equipment leases
    - Supplies
    - Packaging and Shipping
    - Insurance
    - Permits and Licenses

Capital Costs:
This is the amount of money required to purchase equipment to start-up and maintain operations for a period of time. It also be used to determine how much depreciation your company will incur each year on equipment that lasts longer than a year.

If you are starting a new business, the capital costs will include office equipment, manufacturing equipment, vehicle, etc. Remember to keep receipts for all of your equipment purchases so you are able to calculate your depreciation expenses for tax purposes.

Gross Margin
The gross margin is defined as the difference between sales and the cost of goods sold. The gross margin must be sufficient enough to cover the costs of labor, services and overhead expenses. The profit is any amount of money left over. You calculated the gross margin in the previous section.

The gross profit margin can be computed by taking the difference between total sales and cost of goods sold divided by net sales.

(Total Sales – Cost of Sales) / Total Sales = Gross profit Margin.

Markup:
The difference between gross margin and markup is that the gross margin is computed as a percentage of the selling price, whereas a markup is computed as a percentage of the seller's cost.

(Total Sales – Cost of Sales) / Cost of Sales = Markup

From these calculations you can make some assumptions. For example, if your business requires a 40% margin in order to make a profit then your average markup will have to be 66.7%. So, although the two calculations refer to the same dollar value, they are two very different concepts with different meaning. If you assume the two are the same it will be impossible to reach your expected profits.

Those are the primary definitions, now there are three possible methods of pricing each presented below with examples of when it should be employed.

Cost-plus Pricing
This type of pricing computes the total cost of the product or service to your business, which includes cost of materials, purchases, labor, overheads, etc, and then adds a desired profit margin to determine the sales price. This method is simple and should be used if your price is below your competitor's and if your customers are willing and able to pay the price. The following is an example:

Cost of Goods Sold (PV module plus balance of system):	$400
Cost of labor (installation included):	$50
Overhead:	$50
Total Cost:	$500
Desired Profit (15%)	$75
Required Sales Price:	$575

Competitive Pricing
If there is a significant amount of competition in the market it is wise to keep the price of your product within that range. Research has already been completed on each competitor so the price of your product should be known. Does this price cover your cost of goods sold and overheads? If not then your business structure is not feasible. Some research should also be done on the willingness of the customers to pay more for the product. Under what conditions will they pay more?

Markup Pricing
Some manufacturers, wholesalers and retailers simply add a set amount (the markup, usually expressed as a percentage of cost) to the cost of a product to reach the final price.

Complete the following exercise to make sure that the price and margin you calculated previously is sufficient to cover your other costs.

Exercise 3-1
Pricing Strategy

Calculating your Operating Expenses:

1. List your labor expenses per month and annually

Staff Name	**Cost per month**	**Cost per year**
Total		

2. List your professional expenses per month and annually:

Professional Service	**Cost per month**	**Cost per year**
EX: Accountant		
Total		

3. List your Overhead Expenses per month and annually

Expense	**Cost per month**	**Cost per Year**
Rent		

Utilities		
Vehicle		
Travel and Entertainment		
Maintenance and Repair		
Equipment leases		
Supplies		
Packaging and Shipping		
Insurance		
Licenses and Permits		
Other		
Total		

4. List the capital equipment necessary to start the business and the cost:

Item name	**Cost**
Total	

5. List the cost of goods sold per month and then annually – ensure that this correlates with you assumptions and findings in the Opportunity Section.

Equipment Name/Type	Amount purchased per month	Cost per month	Cost per year
Total			

6. Insert the total of labor, services and overhead items here: $___________________

7. Insert the cost of the goods sold here: $___________________

8. Add the two numbers, your sales price must cover at least this amount, but remember loan and interest payments, depreciation and taxes are not built into this number. It is likely that the sales price you have chosen will change as you complete the Business Plan however use this price as a starting point.

9. Determine your margin and markup using the formulas in this section.

Margin: _____________

Markup: _____________

b. Sales Projections

It is not sufficient to simply work through the costing of a single product. This must be supplemented by an understanding of how many products you will sell (or how often you will offer your service) over a certain period of time. The goal is to be able to define how many systems you will sell per month and then defend why this is reasonable. The projected sales for at least the first 5 years of business (depending on when your business will be profitable and has repaid any debts) must also be calculated.

Again, if you have no experience in the proposed business competitors can be a good source of information. Refer back to any notes from conversations with competitors in chapter 1. Their figures can be used as a starting point or a measuring stick to compare against your figures. For example, if a direct competitor is selling 150 products per year, it may not be reasonable to assume your business will sell 600 per year. If this is the case then a strong argument must be presented. Another source of information are suppliers and target customers.

Task: Think about how many products you can sell per month for the first year and annually thereafter. Base your projection on number of staff, availability of stock and parts, customer demand,

c. Selling Options

Now that you know how many products you will sell over a defined period of time you must consider how you will distribute it to your customers. Distribution is the process of moving your product from the manufacturing site to the customer. The distribution channel you choose will depend on your projected number of sales and characteristics of your business. Consider your competitor's distribution strategy to decide if it is right for your business or if there are any lessons you can learn from it. Examples of some distribution channels for energy businesses are as follows:

<u>Direct Sales:</u> The simplest and most effective way to distribute if you are selling directly to customers is to have your business sell the product. An example is selling solar water heaters directly to a household for cash or credit.
<u>Salespeople</u>: Salespeople will sell your product or service on your behalf. They often sell a variety of products and divide their time between them. This is also an effective way to distribute a product. An example includes selling a newly designed freezer using solar panels to a solar PV company's in-country distributor.
<u>Wholesale Distributors</u>: A manufacturer sells a product to a wholesaler who in turn sells it to a retailer for further distribution until it reaches the customer. Selling solar dried food products to an export company who in turn sells it to a retail chain is an example of this distribution channel.
<u>Retail Distributors:</u> Another highly effective channel if the end-user is the general public is selling bulk product directly to a retail store. An example is selling a product to a grocery store.

When selecting the distribution strategy best suited for your business consider the channels used by your competition, the successes and failures, personal strengths and weaknesses and the location of your business and customers.

At this point in the business planning process do some research and outreach on the distribution channel(s) of interest. Specifically find out how you would go about distributing your product. For example, if you plan on selling to a retail chain, call several and find out their criteria and process for accepting new products. Talk to competitors, both direct (those doing what you do) and indirect (those selling a complementary product).

Task: Think in detail about how to best serve your customer within your abilities and constraints. Defend your distribution channel and quality of service offered compared with your competitors. You will have to describe this in writing in the Feasibility Analysis.

d. Marketing

Once you have considered and researched various distribution channels, the next step is to develop a marketing strategy for selling your product. The goal of marketing is for the public to learn about your business and the product or service that you are offering and then buy it. There are several options for marketing. Each option should be considered and then you must decide given your businesses characteristics which type will give you the most benefits for a budget you can afford. Examples of some marketing strategies are described below:

<u>Advertising:</u> loosely defined as any promotional activity you pay for. It includes print advertisements, radio interviews, television advertisements, or billboards.

<u>Packaging:</u> If you are selling your product retail you should think about your product's packaging. The product must be packaged to attract customers?

<u>Marketing Materials</u>: includes materials such as brochures, handouts, and mailing pieces.

<u>Sales Promotions:</u> Strategies used to support the message such as demonstration events, special sales, discounts, contests, and awards.

Do you need a logo? Something that will differentiate your product from that of your competitors. Come up with a few logos and test them on friend and family – get an honest opinion.

Every company must have a marketing plan and must consider marketing a priority. If you are starting a new business or expanding the products or services offered you plan a marketing effort or event to launch the new business. For example, plan an event where you will demonstrate your product and hand out brochures or offer discounts or have a raffle to win a free product. Deciding on appropriate day-to-day marketing differs from company to company and country to country. It may take some experimentation to devise an appropriate marketing strategy for your business. Testing various options is often more efficient and less costly in the long run.

Marketing is extremely important, however can be costly. Consider in great depth which types of marketing are necessary and why and how the marketing will influence the customer to buy the product or service. Try to keep the costs down. In the revenue analysis section, the impacts of marketing costs will be reviewed.

Task: Make a list of strategies you will consider, the desired outcome and how the strategy will achieve the result. Think of your competitor's strategy and evaluate its success. Research the costs - call some media sources, printing companies, etc. Do not estimate the costs, as the figures must be incorporated into your early stage financial analysis. Put together a plan for testing whether the marketing plan works before rolling out a large production.

4. COMPETITIVE ANALYSIS

Lenders and investors want to make sure that you are going to be able to sell your product or service. Two ways for them to accomplish this is by testing how reasonable your assumptions are in the opportunity section and by looking at how you define your competitive advantage. Competitive advantage is defined as a description of how your business will compete against other businesses that fill the same need as your business. Remember, competitors can be both direct (sells same product or service as you) or indirect (different product or service that fills the customer's same need).

The competition section of the business plan should start by introducing your primary competition. Discuss the product or service they offer, their location, price, management and skills, and marketing strategy. Don't discuss every competitor if there are several – rather quantify how many there are in a statement and select a few. Then compare your business to your competitors. This analysis can easily be done in a chart that clearly presents the information. Again, compare your prices, distribution, quality of the product, skills and management, and marketing strategy. The following exercise is an example of the type of chart that can be used.

Exercise 3-2
Competitive Advantage

Write your business name in the first column. Define up to three of your primary competitors and list them in the first three columns. Discuss the strengths and weaknesses of your company compared to each competitor for each of the assets and skills defined.

ASSET/SKILL	YOUR COMPANY	COMPETITOR #1	COMPETITOR #2	COMPETITOR #3
Management	EX. The president of the company has been in this line of work for 15 years. Dedicated support staff.	EX. Started business with only 2 years experience and all other managers are new to the company.		
Technical Capacity				
Product(s)				
Distribution Channel				
Price(s)				
Promotion				
Advertising				

5. OPERATIONS PLANNING

The operations section of your business plan describes how you will implement your business strategy. Furthermore, it presents the structure of the business in terms of management and employees and their functions. At the end of this section, lenders and investors should be able to describe how your business will achieve its mission, from both a day-to-day sales perspective as well as longer term. This section starts with the organization of the business and goes on to cover product development, manufacturing, stock and distribution, offices, sales, technical and lastly organization structure.

a. Operations

The operations section is usually as complex as your business. If you will have only a few employees and one or two locations, this section is simple. If you have 50 employees and several locations then this section will be more detailed. The goal is to describe to lenders and investors what each department of your business will do. Depending on your type of business, the following headings can be used to for this purpose. The section does not have to be broken into different headings but should cover all of the information below. Remember, one employee may fill more than one role or position in the company. Under each heading list key functions, names of personnel, responsibilities of each person and their relevant work experience.

Product Development
Regardless of whether you manufacture or purchase your product, you need to clearly present the process of developing or acquiring the product. You have collected data about suppliers. This is the place to describe how your business will interact with them. Use the information from the Business Relationships section of the Fact-finding study. In addition to describing the process state how many people work in the department and their skills.

Manufacturing
If you will make your product rather than purchase it, describe here the manufacturing process. Present in a step-by-step process in order to keep it simple. Where do you get your materials from, how long does it take, what are the costs, what are the skills and who are your staff. Describe your manufacturing facilities and include the costs of the entire process.

Stock and Distribution
Once you have purchased or manufactured your product where will you store it and what are the details for distributing it. Will you own or rent a warehouse? How much stock do you expect to have on hand?

Offices and Sales
The method by which customers will interact with your business is an important part of your business plan. Much of the information on your strategy of reaching customers was presented in the marketing section, so here details are included of how you will actually make that possible.

Will you have one office centrally located or several? What is the purpose of your office? Who works there and what do they do? Does your sales team go to customer's houses to make sales? If yes, do you have company vehicles? How many? How often will your sales people be in the field? How will revenues be collected? How often? At the point of sale - monthly or in advance?

Technical
This part only needs to describe how your technical team will operate. What do technicians do? How will they reach and interact with the customers? How often? How many customers is each technician expected to service? How long does it take for the technician to complete his job?

An issue related to operations and marketing your product is product guarantees. Will you offer support or maintenance to customers for after-sales? Will you charge for this service? How will customers contact you? Does your supplier, if one exists, guarantee the product?

b. Organization Structure

This part of the business plan should be straight-forward and simple. It should include an organization chart with a short introduction, and short biographies of the core management team. The organization chart should include all department heads and managers, with names and titles, and only the number of support staff for each department. Be sure to include the names of the managers or department heads or if they have not been hired yet include a paragraph saying when they will be hired.

Full resumes or CVs should be included in the attachments to the plan. If you have a Board of Directors or advisors a paragraph should be included about each of them as well. The business description of the business plan states information about the management team, the goal of this section is to defend that your team has sufficient skills to successfully run the business.

Task: Complete an organizational chart indicating positions that are filled, positions to be filled before starting operations, and positions to be filled over time. Write a draft of your Operations Plan – what will each department or division do and what do they require to fulfill this job.

6. TECHNICAL DETAILS

From a technology standpoint, a business idea is feasible when natural resources are available in predictable and sufficient quantity and can be converted to energy using available proven technology. The only mention of the technological aspects up to this point has been in the business description where you described the type of resource and technology to be used and other small details. The technology section of the business plan defends the technology choice.

This section should provide a more thorough description of the technology going into detail about how the technology and process will work. If the type of business you are proposing has been implemented and successful **and** if the technology itself is simple and proven then this section will be short. For example, there are several businesses that distribute solar home systems and the PV technology is proven. Therefore, this section will only include details of the types of panels and balance of system components being offered, the costs, supplier guarantees, etc. Then a paragraph defending that the solar insolation is sufficient in the location of operation to charge the battery a certain number of days per year.

For a more elaborate business with a more complex technology process, such as a hydroelectric or biomass cogeneration project, the technology section will be extremely important to investors because they will use it to evaluate their risks. As stated previously, lenders and investors do not want to be pioneers so if it is an energy project that has not been done on a commercial basis, locally, or successfully then this section must be thorough in explaining how the technology will work. If the technology fails, all other assumptions - the customer and financials for example, are meaningless.

Lastly, when the success of the business relies on a new or risky technology working, it is often necessary to have an expert analysis concluding that the proposed technology and energy resource are feasible to reach the business objectives. This analysis is typically included as a technical annex to the business plan.

7. FINANCIAL INTRODUCTION

In the marketing strategy section you calculated your cost of goods sold, overhead expenses and capital cost in order to determine the sales price of your product. In your business plan, however the marketing section will just state what you will charge customers and then describes your marketing and distribution. The numbers to defend your price will be included in the financial section of your business plan. For the feasibility analysis the only necessary financial information is a description of how much money you need to start your business and for what, and your businesses revenue projections in the form of an income statement[2]. The final business plan will include more figures and financial statements, such as a balance sheet and cash flow, which will be explained in Chapter 4. In addition, **Annex E** offers an introduction to basic financial terms and concepts.

How much money do I need?

After completing the marketing and operations section it should be more clear what capital goods need to be secured and what additional people need to be hired to start the business. Put together a list of the items to be purchased and their costs as well as a figure for operating, employee salaries, professional fees, and taxes per month. If you used the suggested format in the schedule section it can also be used here. Remember planning and pre-operations need to be covered by capital whereas the operating expenses need to be covered by income. There is a relatively simple way to determine how much capital you need. First you need to estimate all of your costs before you will receive cash from customers. That will include the payment of salaries and contractors and the purchase of goods needed in the Planning of your enterprise, in the Pre-operations or Construction Phase of your enterprise and during the Operating Phase of the enterprise up until revenues cover the daily-weekly-monthly expenses. You will borrow some of this money and you will put some of this money in as equity. But you need to know how much is required. Too often entrepreneurs just estimate the cost of buying their product and equipping their facilities and forget that bills need to be paid until cash comes from customers. The amount of this "working capital" requirement can be crucial in the success or failure of a business. Keep in mind you must have enough funds to pay your bills until the customers pay you, which may be thirty, sixty or even ninety days after you bill them. For instance, perhaps you will order equipment, furnish your office, and market your product for 6 months before your first sale. Then it will take another 8 months to sell enough products to break-even. Furthermore, when you borrow funds you are required to at least begin paying interest within about 6 months. It is possible to use borrowed funds to cover initial operating costs.

Phase	**Costs**
❑ **Planning:**	
❑ **Pre-operations/construction:**	

[2] If your business sells several types of products or services a revenue section should be included in addition to an income statement to clearly present where you generate your revenues from and over what schedule.

❑ **Operations:**	
Total:	

There is a simple way to see if you are borrowing enough. In the next chapter, you will learn how to complete a cash flow, which is basically like a checkbook. This will show your business' profit or loss. It is possible to play with the figure and see the effect on your payments, and profit or loss.

Income Statement:
The purpose of an income statement is to present, in an organized fashion, the businesses ability to earn a profit or generate income. The income statement contains the following information defined below:

Gross Revenues: defined as all of your business' dollar sales for the listed period of time. It is also referred to as gross sales.

Returns: the cost to your business for any damaged or returned products.

Net Revenues: difference between gross revenues and returns. Sometimes called net sales.

Cost of Goods Sold: refers to the cost to you to purchase materials or products from suppliers for resale or manufacturing. Commonly referred to as cost of sales.

Gross Profit: this is your direct profit from sale of your product. It is calculated by subtracting cost of goods sold from net revenues.

Gross Margin: calculated by dividing your gross profit by net revenues.

Operating Expenses: all of your businesses indirect costs including labor, professional services and operating expenses.

Net Operating Income: this is your earnings before you deduct interest, taxes and depreciation. Subtract operating expenses from gross profit to calculate figure.

Depreciation: cost assigned for the reduction in usefulness and value of a long-term capital asset. It is the amount of the capital cost of a business to be allocated to each year of a business's life. For each year of a business's life a portion of this cost can be credited, thus reducing the amount that the business has to pay for income taxes. For solar powered water pumps this could be 10-20 years. For a co-generation business it could be 15-30 years. Deduct depreciation from your Net Operating Income to determine your Net Profit Before Interest.

Interest: calculate the interest to be paid on loans over a given period of time. This estimate is rather rough at this stage but should be finalized before presenting to a potential lender or investor. Deduct the interest payments from your Net Profit Before Interest to determine your Net Profits Before Taxes.

Taxes: calculate all taxes the business must pay including employee and income taxes. At the business start-up level it is therefore only important to provide an "allowance" for income taxes from the business on a simplified basis. Deduct taxes from Net Profits Before Taxes to determine your Net Profit.

Net Profit (or Loss): Also called net earnings or net income, this is the total profit after interest, taxes, depreciation and amortization have been subtracted.

Net Margin: divide the net profit by net revenues to understand how much profit you are making in comparison to your sales.

Example of an Income Statement:

Gross Revenues:	
Returns	
Net Revenues	
Cost of Goods Sold:	
Gross Profit:	
Gross Margin: (percentage)	
Operating Expenses:	
Labor:	
Professional Services:	
Overhead:	
Rent	
Utilities	
Vehicle	
Travel and Entertainment	
Maintenance and Repair	
Equipment leases	
Supplies	
Packaging and Shipping	
Insurance	
Licenses and Permits	
Other	
Total Operating Expenses:	

Net Operating Income	
Depreciation	
Net Profit Before Interest	
Interest	
Net Profit Before Taxes	
Taxes	
Net Profit (or Loss)	
Net Margin: (percentage)	

This income statement is for the first year of operations. An income statement for what you expect, or project, to achieve in the coming years must also be completed. Such a statement is often called a pro-forma income statement. The pro-forma statement should be presented in the same format but with additional columns for each year. Title the column according to the year. Preparing projections is tricky because you must make assumptions about the future. Lenders and investors usually want to see your business grow, but typically that is not as simple as increasing your revenues each year. You must ask yourself what will be the ratio of increased expenses to increased revenues. For example, if you want to sell 150 units in year 1 and 250 units in year 2 how many more employees will you have to hire or how many additional vehicles will you need to purchase? Perhaps, your business will get more efficient in the future so you will not need to increase your expenses the same each year.

Task: Complete a worksheet detailing how much funds you require, an Income Statement for your business for year 1 and a Pro-forma Income Statement for years 2 through 5 and include in your Feasibility Analysis.

8. PUTTING IT TOGETHER

"When land, energy resource, technology, team, customers and permits are available and when putting these ingredients together makes financial, social and environmental sense, then a business is feasible."

This chapter opened with this statement. The purpose of this chapter was to take the facts gathered in chapter 2 and your business ideas and then defend that they are appropriate and feasible. For instance, in chapter 2 you gathered information about what customers are currently buying and how much they are spending. Then you researched possible suppliers and received quotes on the purchase prices. Now in chapter 3 calculations were completed to determine the accurate sales price per product and projections for future sales. It should now be clear whether you can sell your product for a competitive price and sell a sufficient quantity to be profitable. The next step is to continue putting all of the information together in a coherent, organized fashion that can be shared with lenders, investors and partners.

Using the data collected in the fact-finding chapter and the information and exercises in this chapter prepare a Business Proposal. The topics to be covered in each section of the proposal have been presented in the toolkit. Now you must turn the information into a compelling written document.

The Business Proposal should be organized as follows:

a. Cover and Table of Contents
b. Business Description – take from Chapter 2, review and improve if necessary.
c. Opportunity – take from Chapter 2, but defend why the customers outlined in your business plan are willing and able to purchase your product or service.
d. Marketing – what is the price of your product or service and how did you arrive at this figure, what is your proposed distribution process and how will you market your product or service.
e. Competition – answer questions of who are your competitors, what do they do and how will you compete against them.
f. Operations – present the organizational structure of your business and what each department of your business does.
g. Technology – describe the technology and energy resource including the process, appropriateness and track record.
h. Finance – detail the funds required to start and run the business as well as an income statement and pro-forma income statement.

CONGRATULATIONS!
YOU HAVE COMPLETED A BUSINESS PROPOSAL