The Calvin Motor Company
Comprehensive Business Plan

Laura Boluyt
Daniel DeVries
Christine De Zeeuw
Vincent Rovedatti

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Executive Summary

The Calvin Motor Company is a small startup company being proposed by four Calvin College engineering graduates. The goal of the company is to provide a four person electric vehicle for use in multiple venues. The vehicles produced aim to serve those with mobility challenges, or those seeking a comfortable, accessible mode of transportation.

The Calvin Motor Company seeks to insert itself into the already well-established small recreational vehicle market. The company does not plan to become a market leader, but rather insert itself as a company which offers a quality product for a specific customer group within the market. The company’s product, the Calvin Bolt, offers the simplicity of a golf cart while providing the space and comfort of a full size automobile.

The management of the company will be overseen by Dr. Renard Tubergen, the company’s chief executive officer. Dr. Tubergen’s unique business and engineering experiences will contribute greatly to the overall success of the project. The four Calvin graduates, Laura Boluyt, Daniel DeVries, Christine De Zeeuw and Vincent Rovedatti, offer both mechanical and electrical engineering expertise which will contribute to the startup and growth of the company.

The team is requesting $485,000 in startup equity from the investors to keep the company afloat. The money will meet the company’s first quarter salary and distribution expenses. The team is also requesting a $1,000,000 bank loan to purchase the building, equipment, and raw materials necessary for the first quarter of operation.
# Table of Contents

Table of Contents ........................................................................................................................................ i

1 Vision and Mission Statement .................................................................................................................. 1
   1.1 Entrepreneur’s vision for the company ............................................................................................... 1
   1.2 Values and principles on which the business stands ........................................................................ 1

2 Industry Profile and Overview .................................................................................................................. 2
   2.1 Industry background and overview ................................................................................................. 2
   2.2 Major customer groups ...................................................................................................................... 2
   2.3 Regulatory restrictions ...................................................................................................................... 2
   2.4 Significant trends ............................................................................................................................ 3
   2.5 Growth rate ...................................................................................................................................... 3
   2.6 Barriers to entry and exit ................................................................................................................ 3
   2.7 Key success factors in the industry ................................................................................................. 3
   2.8 Outlook for the future ...................................................................................................................... 3

3 Business Strategy ................................................................................................................................... 4
   3.1 Desired image and position in market ............................................................................................. 4
   3.2 Company goals and objectives ....................................................................................................... 4
      3.2.1 Operational............................................................................................................................... 4
      3.2.2 Financial.................................................................................................................................. 4
   3.3 SWOT Analysis .............................................................................................................................. 4
      3.3.1 Internal Strengths ..................................................................................................................... 4
      3.3.2 Internal Weaknesses ............................................................................................................... 4
      3.3.3 External Opportunities .......................................................................................................... 4
      3.3.4 External Threats .................................................................................................................... 5
   3.4 Competitive Strategy ....................................................................................................................... 5
      3.4.1 Cost leadership ........................................................................................................................ 5
      3.4.2 Differentiation ........................................................................................................................ 5

4 Company Products and Services .............................................................................................................. 6
   4.1 Description ....................................................................................................................................... 6
      4.1.1 Product or service features; uniqueness .................................................................................. 6
      4.1.2 Customer benefits ................................................................................................................... 6
      4.1.3 Warranties and guarantees ....................................................................................................... 6
   4.2 Future product or service offerings ................................................................................................ 6
5 Marketing Strategy .................................................................................................................. 7
  5.1 Target market ....................................................................................................................... 7
    5.1.1 Problem to be solved or benefit to be offered .............................................................. 7
    5.1.2 Demographic profile ..................................................................................................... 7
    5.1.3 Other significant customer characteristics ..................................................................... 7
  5.2 Customer’s motivation to buy ............................................................................................. 7
  5.3 Market size and trends ....................................................................................................... 7
    5.1.3 Market size and growth ................................................................................................. 8
  5.4 Advertising and promotion ............................................................................................... 8
    5.4.1 Message .......................................................................................................................... 8
    5.4.2 Media ............................................................................................................................. 8
    5.4.3 Budget ........................................................................................................................... 8
    5.4.4 Plans for generating publicity ....................................................................................... 9
  5.5 Pricing .................................................................................................................................. 9
    5.5.1 Desired image in market ............................................................................................... 9
    5.5.2 Comparison against competitors’ prices ....................................................................... 9
    5.5.3 Discount policy ............................................................................................................. 9
    5.5.4 Gross profit margin % anticipated ............................................................................... 9
  5.6 Distribution strategy – channels of distribution ............................................................... 9
6 Competitive Analysis ............................................................................................................. 11
  6.1 Existing competitors ......................................................................................................... 11
  6.2 Potential competitors: companies that might enter the market ...................................... 12
7 Description of Management Team ....................................................................................... 13
  7.1 Key managers and employees ......................................................................................... 13
    7.1.1 Senior Mechanical Engineer – Vincent Rovedatti ....................................................... 13
    7.1.2 Senior Electrical Engineers – Christine De Zeeuw and Laura Boluyt ....................... 13
    7.1.3 Vice President of Marketing ........................................................................................ 13
    7.1.4 Production Supervisor – Daniel DeVries .................................................................... 13
    7.1.5 Chief Executive Officer – Dr. Ren Tubergen ............................................................. 13
    7.1.6 Chief Financial Officer ............................................................................................... 13
  7.2 Future additions to management team ............................................................................. 14
8 Operations ............................................................................................................................. 15
  8.1 Legal form of ownership chosen and rationale ............................................................... 15
  8.2 Company structure ......................................................................................................... 15
  8.3 Decision making authority ............................................................................................. 15
8.4 Significant compensation and benefits packages ............................................. 15
8.5 Facilities .................................................................................................................. 15
9 Financial Forecasts .................................................................................................... 16
  9.1 Key assumptions ...................................................................................................... 16
  9.2 Financial Statements .............................................................................................. 16
  9.3 Break-even analysis .............................................................................................. 16
  9.4 Ratio analysis ........................................................................................................ 16
10 Loan or Investment Proposal .................................................................................... 17
  10.1 Amount requested – equity and/or debt .............................................................. 17
  10.2 Purpose and uses of funds .................................................................................. 17
  10.3 Repayment or “cash out” schedule (exit strategy) ............................................... 17
  10.4 Timetable for implementing plan and launching the business ......................... 17
Appendix A: Financial Analysis .................................................................................. 18
Appendix B: Costs Breakdown ................................................................................... 21
1 Vision and Mission Statement

1.1 Entrepreneur’s vision for the company

The company strives to provide an effective and safe means of transportation in the form of an electric vehicle, incorporating a user-friendly electronic dashboard.

1.2 Values and principles on which the business stands

Trust, Integrity and Stewardship are found at the core of the company’s values. The company desires to maintain reliability in all aspects of our product and business. Safety, a harmony between form and function, and efficiency in the use of resources are key to the company’s mission.
2 Industry Profile and Overview

2.1 Industry background and overview

The small-wheeled vehicle industry has risen out of a demand for vehicles which offer a low cost, quiet, energy efficient means of transportation. The manufacturer Club Car has become synonymous with such vehicles over the past several decades as they offer convenient solutions to the requirements listed. Their product suits many needs across several markets and stands as a good baseline for what elements should be included in such a vehicle. The industry started with small, gasoline fueled vehicles useful in various types of recreational activities and has grown into a market which provides many types of gasoline and electric powered vehicles across many markets.

2.2 Major customer groups

The three major customer groups for the small wheeled recreational transport vehicle industry are sports venues, university campuses, and senior living communities. Each of these customer groups rely on the vehicles to transport both people and gear. The first customer group, sport venues, ranges from golf courses looking to transport players around the course to football stadiums needing a way to get injured players back to the locker room for medical assistance. The second consumer group, universities, rely on these vehicles for many uses including taking prospective students on long tours and transferring equipment from building to building. The final customer group, elderly living communities, enjoy the increased mobility offered to low mobility individuals by such vehicles.

2.3 Regulatory restrictions

The top speed of a vehicle determines what regulations are placed on it according to the National Highway Traffic Safety Administration (NHTSA) of the Department of Transportation (DOT). Twenty miles per hour has been established as the speed at which a vehicle changes class. Traditionally, any vehicle incapable of speeds over 20 miles per hour were subjected to minimal safety regulations and vehicles with a top speed over 20 miles per hour were treated as conventional motor vehicles. This distinction was deemed infeasible since most small vehicles cannot incorporate the necessary safety devices necessary to fulfill NHTSA requirements for motor vehicles. To remedy this, Federal Motor Vehicle Safety Standard No. 500 was established. It gives special privileges to small vehicles which are capable of achieving a top speed between 20 and 25 miles per hour. This safety standard requires the implementation of headlamps, stop lamps, turn signals, tail lamps, reflex reflectors, parking brakes, rearview mirrors, windshields, seat belts and vehicle identification numbers. Not included in this class of vehicle are safety measures such as air bags and zones of the frame which crumple under severe impact to best allocate the forces associated with a major crash. The exclusion of these safety measures allow for a more cost effective vehicle.
2.4 Significant trends

The most significant trend seen in the industry over the course of its existence is the switch from gasoline engines to electric motors. As concerns continue to grow around gasoline engine emissions and oil source depletion, the need for electric power has become apparent. Companies like Club Car have answered these concerns by developing cost effective electric solutions which offer competitive speed, range, and reliability standards.

A second trend which has emerged in the industry is an increased functionality of these vehicles as gear hauling vehicles. Rather than simply offering two or four person transportation solutions with little to no carrying capacity, companies in the industry have started to introduce more and more products for applications such as a mobile IT support stations or inner-campus equipment transportation. This trend has arisen to satisfy needs created by the ever increasing mobility of the work arena.

2.5 Growth rate

While companies like Club Car have not seen much growth in the past decade, other companies like Polaris which offer a more specialized 2 to 4 person vehicle have seen growth of 8% per year over the past 10 years. This growth seems specific to vehicles in the market that are offering more specific uses which exactly meets the goals of the Calvin Bolt; offering a specialized solution to one or several problems not currently addressed by similar products on the market.

2.6 Barriers to entry and exit

There are several potential barriers to enter the market. First and most significantly, the market stands very established as it is. The major players in the market currently have products in the market that are established in near-monopoly conditions. The Club-Car golf cart for instance dominates the market in sales and revenue and their competitors only survive by offering more specialized solutions. That would be the strategy behind establishing the Calvin Bolt in the market also; offering a product that doesn’t try to match or exceed the current products offered but rather offering a more specialized product with a more targeted customer group.

2.7 Key success factors in the industry

The biggest factor for success in the industry is reliability of the product. One thing that makes the current products on the market stand out is their somewhat simplistic makeups which allow for the vehicles to operate for a long time with very little maintenance. These aspects of reliability and dependability represents key features that needs to be implemented in new products entering the market.

2.8 Outlook for the future

Overall the market looks strong going forward. Especially as green solutions continue to emerge and more specialized vehicles begin to appear, the small vehicle market should have a bright, profitable future to look forward to. The Calvin Motor Company seeks to make the most of these conditions with integration into the market.
3 Business Strategy

3.1 Desired image and position in market

The Calvin Bolt would not seek to replace the products currently on the market but rather would seek to become established as a specialty product option within the market. While companies like Club Car would dominate the market in the arena of basic human transportation, the Calvin Bolt would ideally insert itself as a product for businesses or individuals looking for a product which would meet and surpass the general requirements of such a vehicle and provide luxuries like an electronic dashboard and ease of entry components for low mobility riders.

3.2 Company goals and objectives

3.2.1 Operational

The operational goal of the company is to design a product using extremely reliable and pleasing technology. In order to meet both the technical requirements and industry standards the product should be designed to balance quality and cost.

3.2.2 Financial

The financial goal of the company is to use the initial profits to repay the startup loans incurred. After the startup loans have been repaid the company will invest profits into future growth and development. The startup loans will be repaid as quickly and effectively as possible to stabilize the company and give good returns to the investors.

3.3 SWOT analysis

3.3.1 Internal Strengths

There are several strengths of the company that make it an exciting investment. The main strength is the product’s blend of quality and complexity. The product will be assembled using high quality components which will make it a very pleasing product to the consumer. It will do this while remaining simple enough in design to enable easy assembly and easy maintenance. The company will also be relatively stable within the market due to its size and targeted customer groups.

3.3.2 Internal Weaknesses

The company must overcome several internal weaknesses also. The main weakness will be building a reputation in the market. Once established the company should be stable within the market, however; getting introduced to it may be a challenge due to the niche markets targeted.

3.3.3 External Opportunities

The main opportunity of the company is growth of the target market as facilities like schools, stadiums, and retirement communities grow in size. This last category, retirement communities,
looks especially promising as a large percentage of baby boomers are set to enter retirement within the next few years.

3.3.4 External Threats

The main threat facing the company is the sturdiness of the competition within the market. The product will not be trying to replace solutions already on the market, however; competing with companies like Club Car could be a real threat for a small startup companies.

3.4 Competitive Strategy

3.4.1 Cost leadership

The Calvin Bolt will be input to the market as a high quality solution for a specific group of customers. The targeted price of the product will make it a cost effective solution and may thus undercut some products already on the market. The company doesn’t anticipate have a competitive advantage over the more popular items on the market, but does plan on being competitive.

3.4.2 Differentiation

The focus of the company is to create a product which fulfills a need present within a thriving market. As a result of this, the target market as stated earlier is rather focused. The quality of the final product is a top priority for the company as is ease of operation and maintenance.
4 Company Products and Services

4.1 Description

The Calvin Bolt will be a four person electric vehicle that can be used for outdoor cross-campus or facility transportation applications.

4.1.1 Product or service features; uniqueness

The Calvin Bolt will provide a transportation vehicle that allows for ease of entry to and exit from the vehicle, and also has a high quality aesthetic design. The vehicle will provide greater legroom and overall accessibility than similar products for those passengers with temporary or permanent disability or mobility challenges. The Calvin Bolt also features an electronic dashboard that will display the speed, remaining battery life, current power drawn from the motor, current position on a map, and essential vehicle operations such as headlight engagement.

4.1.2 Customer benefits

Customers will benefit from the increased legroom and accessibility as these features cannot be found in other golf cart products on the market. The company’s attention to the aesthetic design of the Calvin Bolt is also a benefit to the customer since it provides an opportunity for the user to drive a unique vehicle that will stand out compared to similar vehicles. This benefit is specifically targeted at higher-education facilities looking to promote their brand.

4.1.3 Warranties and guarantees

The company will provide limited warranties for customers. Software updates for the electronic dashboard will be made available on the company’s website, as well as instructions and troubleshooting advice for installing the new updates. Warranties will be offered for the vehicle for 6 months if the user complies with the warranty parts list and the intended usage document. Any catastrophic or chronic failures will be handled by the company either through a total product recall or a part recall, which would include replacement or compensating for the part.

4.2 Future product or service offerings

The company hopes to add additional services and products as the business expands. The company hopes to add customizable aesthetic features such as customized paint jobs, interior features, and additional lighting features. For the electronic dashboard the company would desire to add a Wi-Fi component, a more sophisticated mapping system, and additional user-customizable features.
5 Marketing Strategy

5.1 Target market

The target markets for the Calvin Bolt are sports venues, college or university campuses, and senior living communities. The Calvin Bolt also hopes to sell vehicles to smaller organizations or individuals who have transportation needs fulfilled by the Calvin Bolt.

5.1.1 Problem to be solved or benefit to be offered

The team’s product will provide the customer with a vehicle that meets the requirements of a golf cart while providing unique features such as an electronic dashboard and ease of entry/exit for low mobility users. The Calvin Bolt will provide a hybrid between a golf cart and a small car, selecting positive features from each vehicle’s design. Additional features such as the dashboard and increased accessibility improve the overall functionality of the Calvin Bolt without significantly impacting the overall selling price.

5.1.2 Demographic profile

The Calvin Bolt does not apply to only one gender, race, age, location, or status. Most of the vehicles will be sold to larger corporations, and each corporation will have a slightly different application or group of users for the product. The Calvin Bolt will aim for a user-friendly vehicle that can be easily operated by individuals who are legally able to drive. Therefore, the Calvin Bolt will not sell to persons under the age of 18.

5.1.3 Other significant customer characteristics

Since the Calvin Bolt can be used in sports venues, colleges/universities, and senior living communities, the range of user expertise, particularly for the electronic dashboard, can be vast. The Calvin Bolt aims to make all components of the vehicle as user friendly as possible to account for a variety of skill or experience of the users. Also, the Calvin Bolt aims to provide a service for those who have low mobility. There is a vast range of types of disabilities, both temporary and permanent, and the Calvin Bolt must aim to provide for as many needs as possible.

5.2 Customer’s motivation to buy

The targeted customer groups will purchase the Calvin Bolt to have a vehicle designed for spacious, comfortable, easy to access transportation with a special attention on the aesthetic design. Customers will also buy this product because it serves as a specialty product option in the golf cart/personal electric vehicle industry.

5.3 Market size and trends

The Calvin Bolt falls into the small electric vehicle market, which continues to grow due to the push for sustainable energy vehicles.
5.3.1 Market size and growth

The golf car market has been on the rise ever since the financial crash of 2008, leading to a 6.3% revenue growth to $625.2 million in 2012. On a global scale, the golf cart industry has also been increasing, driven by technological advancements and a growing awareness for pollution free vehicles: “The Global golf cart and NEV market was valued at USD 1.79 billion in 2013, growing at a CAGR of 6.6% from 2014 to 2020”.¹ The United States market dominates the global market due to the advanced technology and the rejuvenation of the industry following the market crash in 2008.

5.4 Advertising and promotion

A strong advertising and promotional strategy will help the company to be sustainable and grow with increased market saturation and awareness.

5.4.1 Message

The main advertising message is that the Calvin Bolt is a vehicle that provides the size, comfort and leg room of a car, modern user features, and the simplicity and cost of a golf cart. The Calvin Bolt aims to be a specialty product option in the small recreational vehicle industry, combining both the features of a golf cart and a small automobile.

5.4.2 Media

Since the target market for the Calvin Bolt is not the passengers of the vehicle, it would be futile to utilize popular advertising techniques such as TV, social media, and radio advertisements. Instead, the company will focus on professional media, such as printed journals, magazines, or newspapers. Electronic media, such as the internet, can also be utilized through a company website or advertisements placed on online catalogs or publications.

5.4.3 Budget

The marketing budget for the company will be small at first, but still large enough to promote the product and gain customers. A half-page newspaper ad costs about $1,000 for a moderately sized newspaper (30-40 thousand readers). Advertisements posted in journals also cost roughly $1,000 and have the advantage of a monthly issue as opposed to a daily issue like a newspaper.

Maintaining a company website will cost about $10-$15 to uphold the domain name, and online advertising is also a viable marketing strategy. Online ads vary greatly in their cost, depending on the popularity of the site. Typical online ad rates range from $30-$50 per thousand views.

5.4.4 Plans for generating publicity

The company plans to generate publicity by maintaining a company website that displays all of the company’s products, progress reports, and any other updates relevant to the customer. The company also plans to create a YouTube channel where the company can upload demonstration videos and other promotional clips to increase exposure. Placing one or two advertisements in either print or online form will also increase the company’s exposure to corporate and industrial customers. The company also plans to generate publicity through word of mouth. The company aims to develop strong relationships with initial customers, working with them to ensure their overall happiness with the product. If the initial customers are excited about the product, it could lead to recommendations to other potential customers via word of mouth.

5.5 Pricing

The Calvin Bolt must be competitive with other products on the market in terms of price, demonstrating the company is sustainable and competitive.

5.5.1 Desired image in market

The company wishes to be defined by trust, integrity, and stewardship. The customers should trust the design and know that they are receiving a high quality product that meets all safety standards. The company also wants to demonstrate that it can be competitive on price and maintain a sustainable profit margin.

5.5.2 Comparison against competitors’ prices

The selling price for the product is $17,288, which offers a competitive solution based on the added features and maintenance requirement of the vehicle as compared to similar products.

5.5.3 Discount policy

The company will not offer many discount opportunities during the first few months of operation to ensure that the company is generating sustainable profits. Discounts will be made available for customers who buy large numbers of vehicles, and those numbers will depend on the bulk pricing of parts and required profit margins. Those customers who prove loyalty over a long duration of time may also be eligible for a discount to strengthen and maintain those customer relations.

5.5.4 Gross profit margin percentage anticipated

The anticipated gross profit margin for the company is around 45%. This value was an average gross profit margin based on market research.

5.6 Distribution strategy – channels of distribution

The company will be located in Grand Rapids, MI, and the finished products will be shipped from the warehouse in this location. Products will be primarily sold through the company website, but
if current golf cart retailers are willing to sell the product, the Calvin Bolt may be sold on golf cart lots as well. The company may also sell products on eBay or Amazon to create another way for customers to buy the product. Sales through eBay or Amazon will primarily focus on individual buyers as opposed to larger corporations, schools, or retirement communities.
6 Competitive Analysis

6.1 Existing competitors

As mentioned previously, the focus of the company is to target specific markets rather than replacing mainstream products and companies. Yet, with this in mind, there is a well-established electric vehicle market due to the increased demand for golf cart-like vehicles in sports venues, university campuses, and senior living communities in addition to the traditional country club and golf course. In this respect, the three main competitors for the Calvin Bolt are: Club Car, E-Z-GO, and CitEcar Electric Vehicles.

Club Car manufactures golf, utility, and transportation vehicles that can fulfill a variety of needs. Club Car currently has about 40 base models in their stock, and is continuing to grow with an increased demand for these types of vehicles. Accessories and other parts can be added to any Club Car to make it customizable to the customer’s application.

E-Z-GO manufactures primarily golf carts with a line of personal vehicles that still maintain the golf cart style and layout. E-Z-GO’s vehicles are primarily designed to carry people, lacking the hauling capabilities of certain Club Car models. E-Z-GO offers additional parts and accessories as well, ranging from audio systems to seating.

CitEcar Electric Vehicles manufactures electric golf carts as well as a variety of electric shuttles, commercial electric vehicles, and low-speed electric vehicles. As with Club Car and E-Z-GO, CitEcar Electric Vehicles also offers a wide range of additional parts and accessories to customize the vehicle. The company is solely focused on electric motor vehicles, which differentiates them from the other manufacturers previously mentioned.

Table 1 lists the price points of the Calvin Bolt’s major competitors based on pricing research for a brand new cart.

<table>
<thead>
<tr>
<th>Competitor</th>
<th>Base Price</th>
</tr>
</thead>
<tbody>
<tr>
<td>Club Car (4 seater)</td>
<td>$6,700</td>
</tr>
<tr>
<td>E-Z-GO (4 seater)</td>
<td>$7,500</td>
</tr>
<tr>
<td>CitEcar Electric Vehicles (4 seater)</td>
<td>$7,500</td>
</tr>
<tr>
<td>Yamaha (2 seater)</td>
<td>$5,500</td>
</tr>
</tbody>
</table>
6.2 Potential competitors: companies that might enter the market

A potential future competitor of the Calvin Bolt is Yamaha. Yamaha is a manufacturer of a wide range of transportation vehicles, including speedboats, snowmobiles, motorcycles, ATVs and golf carts. Yamaha currently does produce electric motor golf carts, but only 2-passenger golf carts; a gas motor powers all four-person vehicles by Yamaha. There is a very high likelihood that Yamaha will enter the market with a 4-passenger electric motor model. Yamaha boasts a 6.7 horsepower A.C. motor in their electric golf cart models, surpassing E-Z-GO, Club Car, and CitEcar Electric Vehicles—who have horsepower ratings of 4.4, 3.3, and 4, respectively. Just like Club Car and E-Z-GO, Yamaha offers a variety of additional parts and accessories to customize their golf carts as well. If Yamaha was to enter the 4 passenger electric motor vehicle market, it would be likely to have a noticeable impact on The Calvin Motor Company’s business. Since Yamaha is a distinguished name in transportation and recreational vehicle markets, customers may opt to stick with the familiar brand. The large electric motor Yamaha offers would also differentiate their potential product in the market.

The Calvin Bolt would still have the specialization in the market with its electric dashboard and much more luxurious design compared to Yamaha’s electric vehicle products or any of the other current manufacturers. If the Calvin Bolt wanted to compete more with companies such as Club Car, E-Z-GO, CitEcar Electric Vehicles and Yamaha, it would be beneficial for the Calvin Motor Company to also consider producing smaller and more inexpensive alternatives.
7 Description of Management Team

7.1 Key managers and employees

7.1.1 Senior Mechanical Engineer – Vincent Rovedatti

The senior mechanical engineer will be experienced in mechanical design, and product testing. The main duties of the senior mechanical engineer will include improving all mechanical aspects of the existing product through research, testing and design revisions.

7.1.2 Senior Electrical Engineers – Christine De Zeeuw & Laura Boluyt

The two senior electrical engineers will be in charge of research and development of all electrical aspects—including software and product development, and testing—as well as management of the existing product. Both senior electrical engineers will have past controls engineering experience and design automation.

7.1.3 Vice President of Marketing

This position will require experience in both marketing and industry. The Vice President of Marketing will oversee branding, promotion and other sales strategies. This requires strong communication, creativity and motivation. Computer and leadership skills are also crucial.

7.1.4 Production Supervisor – Daniel DeVries

The production supervisor will oversee quality control as well as the manufacturing operations. These operations will include the handling of raw materials, supplies, equipment and personnel. This position requires direct communication with company employees and distributors in regards to deadlines. A background in management and administration, as well as strong interpersonal and communication skills are also crucial for the success of the production supervisor.

7.1.5 Chief Executive Officer – Dr. Renard Tubergen

The Chief Executive Officer (CEO) will set the overall vision and strategy of the company, maintain communication with stockholders, building and leading the senior executive team, and will also be an investor in the company. This requires strong communication, administration and motivation skills, as well as a background in the industry and administration.

7.1.6 Chief Financial Officer

The chief financial officer will have the duties of accounting, budgeting, managing and reporting the company’s finances, as well as strategy planning. The chief financial officer will bring past experience in accounting and business with high proficiency in written and oral communication.
7.3 Future additions to management team

As the company expands, management teams and employee expansion would be required to maintain the assurance of product quality and customer service. Future positions that would be required would include: a Quality Assurance Engineer, Vice President of Human Resources, Purchasing Manager, Operation Manager, Research and Development Engineers, and Software Development Engineers.
8 Operations

8.1 Legal form of ownership chosen and rationale

The company will be a limited liability company (LLC). This provides the owners with protection in the event of a company failure. The company's credit will be independent of the assets of the owners and, in the event of foreclosure, the risk to the owners of the company is thus reduced. An LLC will also be easier to sell if the owners decide they want to get out of the business. Additionally, an LLC will allow the company to be taxed as a partnership as opposed to a corporation. Finally, there are fewer regulations placed on an LLC, providing it with greater flexibility. As a result, the company will also not have a board of directors.

8.2 Company structure

The company will have a single president who will work with four vice presidents to make decisions. Each vice president will be in charge of a specific department and will be responsible for making sure their department runs smoothly. Under the vice president there will also be four engineering managers in charge of the different engineering teams. The president, vice presidents, and engineering managers will all be equal partners in the company.

8.3 Decision making authority

Each vice president will have the authority to make decisions regarding the management of their own department. The VP of Engineering will also delegate the management of each engineering group to that manager. Engineering decisions will be made by the VP of Engineering in collaboration with the engineering managers. The VP of Engineering will have the final say in these decisions. Similarly, company decisions will be made by the President in collaboration with the VPs with the President having the final decision making authority.

8.4 Significant compensation and benefits packages

As a small company, The Calvin Motor Company will try to offer fair compensation to all of its employees, but will have to offer lower salaries than other companies. Employees will get two weeks paid vacation as well as insurance and a competitive 401k plan.

8.5 Facilities

The company’s facility will be organized on one main floor. This space will offer room for a main office and conference room space, tool room, materials handling center, material storage room, production area, and a packaging and distribution area. The production area will be setup as an assembly line. At the start of the assembly line the welders will construct the frame of the vehicle. Next the electronics and mechanical components will be added. Finally the body panels and interior parts will be added resulting in a finished product.
9 Financial Forecasts

9.1 Key Assumptions

The financial forecasts for the Calvin Bolt could not be completed without a set of assumptions. First of all, the team assumes that there will be a fixed selling price of $17,288 per vehicle and a fixed annual production amount of 250 units. Another assumption is that the company will have a fixed growth rate of 20%, which is a typical growth rate for a starting company. Another assumption was that the team would be able to obtain $485,000 from investors and $1,000,000 from a bank loan to cover initial startup costs for the business. The final assumption is that there are no additional costs for keeping or processing inventory: inventory costs are simply the costs or producing that inventory.

9.2 Financial Statements

The financial statements for the Calvin Bolt include an income statement and a cash flow statement. A balance sheet was not included because it is assumed that the items found in the balance sheet are accounted for in the cash flow and income statements. Also, the company is assuming that there will be no credit sales, which would eliminate any accounts payable line items found in most balance sheets. More detailed information about the income statement and cash flow statement can be found in Appendix A.

9.3 Break-even analysis

The Break-even analysis and its details can be found in Appendix A. Both the break-even sales volume and unit volume are presented in the analysis.

9.4 Ratio Analysis

The Calvin Motor Company performed a ratio analysis with four key ratios: Gross Margin of Revenue, Profit Margin, Net Asset Turnover, and Debt to Equity Ratio. These ratios give a snapshot of the profitability and viability of the company. The Gross Margin of Revenue was calculated to be 43%, 48%, and 52% over years 1 through 3 respectively. This means that the company earns $0.43, $0.48, and $0.52 for every dollar of revenue brought in through sales, which is an indicator of company success and profitability. The profit margin was calculated to be 4%, 8%, and 13% for years 1 through 3, which shows that the company is able to pay off bank debt, invest in future growth, and return capital to owners. For years 1 through 3, the net asset turnover was calculated to be 7.96, 9.55, and 11.46 respectively. This shows that the company is able to sell large amounts of inventory in a given year, which shows company growth and movement of goods. The debt to equity ratio was calculated to be 1.03, 1.98, and 1.34 for years 1 through 3, and this shows that the creditors have more sway than the investors, which is a direct result of the initial loan and equity amounts.
10 Loan or Investment Proposal

The company will require a significant investment at the beginning due to the volume of units produced and the variable cost of producing the vehicles.

10.1 Amount requested – equity and/or debt

The team is requesting $485,000 in equity from investors and $1,000,000 as a bank loan. These values will be the company’s starting equity and debt respectively.

10.2 Purpose and uses of funds

The money requested from the investors will be used to keep the company afloat for the first quarter. Specifically the money will be used to cover salaries and any distribution costs. The bank loan will be used to buy any physical assets necessary for startup, such as the building, equipment, and raw materials for the first quarter of production.

10.3 Repayment or “cash out” schedule (exit strategy)

The investment repayment schedule focuses on paying off debt as soon as possible. The company will utilize excess profits each year to repay as much of the debt as possible while still maintaining a small percentage of profits. The team used a 90% margin, meaning that the company put 90% of the excess profits towards paying off the debt. The company estimated that this 90% margin will allow for a payoff period of around 6 years based on market trends and projected income.

10.4 Timetable for implementing plan and launching the business

After attaining the necessary funds, the company plans to launch full scale production to generate the revenue to pay off debts and generate a profit.
Appendix A: Financial Analysis

### The Calvin Motor Company

#### Pro-Forma Statement of Income

<table>
<thead>
<tr>
<th></th>
<th>Year 1 (200/250 units)</th>
<th>Year 2 (240/250 units)</th>
<th>Year 3 (288/250 units)</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Sales revenue</strong></td>
<td>3,457,600</td>
<td>4,149,120</td>
<td>4,978,944</td>
</tr>
<tr>
<td><strong>Variable Cost of Goods Sold</strong></td>
<td>873,500</td>
<td>1,048,200</td>
<td>1,257,840</td>
</tr>
<tr>
<td><strong>Fixed Cost of Goods Sold</strong></td>
<td>1,095,500</td>
<td>1,095,500</td>
<td>1,095,500</td>
</tr>
<tr>
<td><strong>Depreciation</strong></td>
<td>10,003</td>
<td>17,143</td>
<td>12,243</td>
</tr>
<tr>
<td><strong>Gross Margin</strong></td>
<td>1,478,597</td>
<td>1,988,277</td>
<td>2,613,361</td>
</tr>
<tr>
<td><strong>Variable Operating Costs</strong></td>
<td>618,640</td>
<td>742,368</td>
<td>890,842</td>
</tr>
<tr>
<td><strong>Fixed Operating Costs</strong></td>
<td>541,741</td>
<td>541,741</td>
<td>541,741</td>
</tr>
<tr>
<td><strong>Operating Income</strong></td>
<td>318,216</td>
<td>704,168</td>
<td>1,180,778</td>
</tr>
<tr>
<td><strong>Interest Expense</strong></td>
<td>75,000</td>
<td>144,150</td>
<td>101,775</td>
</tr>
<tr>
<td><strong>Income Before Tax</strong></td>
<td>243,216</td>
<td>560,018</td>
<td>1,079,003</td>
</tr>
<tr>
<td><strong>Income tax (40%)</strong></td>
<td>97,286</td>
<td>224,007</td>
<td>431,601</td>
</tr>
<tr>
<td><strong>Net Income After Tax</strong></td>
<td>145,930</td>
<td>336,011</td>
<td>647,402</td>
</tr>
</tbody>
</table>

#### The Calvin Motor Company

#### Pro-Forma Statement of Cash Flows

<table>
<thead>
<tr>
<th></th>
<th>Year 1</th>
<th>Year 2</th>
<th>Year 3</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Beginning Cash Balance</strong></td>
<td>-</td>
<td>1,352,558</td>
<td>1,365,661</td>
</tr>
<tr>
<td><strong>Inventory</strong></td>
<td>(218,375)</td>
<td>(262,050)</td>
<td>(96,085)</td>
</tr>
<tr>
<td><strong>Net Income After Tax</strong></td>
<td>145,930</td>
<td>336,011</td>
<td>647,402</td>
</tr>
<tr>
<td><strong>Depreciation expense</strong></td>
<td>10,003</td>
<td>17,143</td>
<td>12,243</td>
</tr>
<tr>
<td><strong>Invested Capital (Equity)</strong></td>
<td>485,000</td>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>Increase (decrease) in borrowed funds</strong></td>
<td>1,000,000</td>
<td>(78,000)</td>
<td>(487,000)</td>
</tr>
<tr>
<td><strong>Equipment Purchases</strong></td>
<td>(70,000)</td>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>Ending Cash Balance</strong></td>
<td>1,352,558</td>
<td>1,365,661</td>
<td>1,442,221</td>
</tr>
</tbody>
</table>
# The Calvin Motor Company
## Break-Even Analysis

<table>
<thead>
<tr>
<th></th>
<th>Year 1</th>
<th>Year 2</th>
<th>Year 3</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Sales revenue</strong></td>
<td>3,457,600</td>
<td>4,149,120</td>
<td>4,978,944</td>
</tr>
<tr>
<td><strong>Less: Variable Costs:</strong></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Variable Cost of Goods Sold</td>
<td>873,500</td>
<td>1,048,200</td>
<td>1,257,840</td>
</tr>
<tr>
<td>Variable Operating Costs</td>
<td>618,640</td>
<td>742,368</td>
<td>890,842</td>
</tr>
<tr>
<td><strong>Total Variable Costs</strong></td>
<td>1,492,140</td>
<td>1,790,568</td>
<td>2,148,682</td>
</tr>
<tr>
<td><strong>Contribution Margin</strong></td>
<td>1,965,460</td>
<td>2,358,552</td>
<td>2,830,262</td>
</tr>
<tr>
<td><strong>Less: Fixed Costs</strong></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Fixed Cost of Goods Sold</td>
<td>1,095,500</td>
<td>1,095,500</td>
<td>1,095,500</td>
</tr>
<tr>
<td>Fixed Operating Costs</td>
<td>541,741</td>
<td>541,741</td>
<td>541,741</td>
</tr>
<tr>
<td>Depreciation</td>
<td>10,003</td>
<td>17,143</td>
<td>12,243</td>
</tr>
<tr>
<td>Interest Expense</td>
<td>75,000</td>
<td>144,150</td>
<td>101,775</td>
</tr>
<tr>
<td><strong>Total Fixed Costs</strong></td>
<td>1,722,244</td>
<td>1,798,534</td>
<td>1,751,259</td>
</tr>
<tr>
<td><strong>Income Before Tax</strong></td>
<td>243,216</td>
<td>560,018</td>
<td>1,079,003</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th></th>
<th>Year 1</th>
<th>Year 2</th>
<th>Year 3</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Total Fixed Costs</strong></td>
<td>1,722,244</td>
<td>1,798,534</td>
<td>1,751,259</td>
</tr>
<tr>
<td><strong>Contribution Margin %</strong></td>
<td>57%</td>
<td>57%</td>
<td>57%</td>
</tr>
<tr>
<td><strong>Break Even Sales Volume</strong></td>
<td>3,029,739</td>
<td>3,163,947</td>
<td>3,080,782</td>
</tr>
<tr>
<td><strong>Break Even Units Volume</strong></td>
<td>175</td>
<td>183</td>
<td>178</td>
</tr>
</tbody>
</table>
## Equipment Purchases

<table>
<thead>
<tr>
<th></th>
<th>Year 1</th>
<th>Year 2</th>
<th>Year 3</th>
</tr>
</thead>
<tbody>
<tr>
<td>Equipment Purchases Year 1</td>
<td>70,000</td>
<td>10,003</td>
<td>17,143</td>
</tr>
<tr>
<td>Equipment Purchases Year 2</td>
<td>-</td>
<td>-</td>
<td>-</td>
</tr>
<tr>
<td>Equipment Purchases Year 3</td>
<td>-</td>
<td>-</td>
<td>-</td>
</tr>
<tr>
<td></td>
<td>10,003</td>
<td>17,143</td>
<td>12,243</td>
</tr>
</tbody>
</table>

## MACRS Rates (7-year recovery period)

<table>
<thead>
<tr>
<th></th>
<th>Year 1</th>
<th>Year 2</th>
<th>Year 3</th>
</tr>
</thead>
<tbody>
<tr>
<td>Annual interest rate on debt</td>
<td>15%</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Average debt balance</td>
<td>500,000</td>
<td>961,000</td>
<td>678,500</td>
</tr>
<tr>
<td>Interest expense</td>
<td>75,000</td>
<td>144,150</td>
<td>101,775</td>
</tr>
</tbody>
</table>
## Appendix B: Costs Breakdown

<table>
<thead>
<tr>
<th>Cost</th>
<th>Per Unit</th>
<th>Annual</th>
</tr>
</thead>
<tbody>
<tr>
<td>Parts/raw materials (+10%)</td>
<td>$2,997.50</td>
<td>---</td>
</tr>
<tr>
<td>Labor and Burden</td>
<td>$720</td>
<td>---</td>
</tr>
<tr>
<td>Overhead</td>
<td>$500</td>
<td>---</td>
</tr>
<tr>
<td>Factory</td>
<td>$150</td>
<td>---</td>
</tr>
<tr>
<td>Commission</td>
<td>$2593.2</td>
<td>---</td>
</tr>
<tr>
<td>Shipping</td>
<td>$500</td>
<td>---</td>
</tr>
<tr>
<td><strong>Total Variable Costs</strong></td>
<td><strong>$4,368</strong></td>
<td><strong>$3,275,625</strong></td>
</tr>
<tr>
<td>Building Rent</td>
<td>---</td>
<td>$55,938.75</td>
</tr>
<tr>
<td>Building Utilities</td>
<td>---</td>
<td>$34,309.1</td>
</tr>
<tr>
<td>Building Operating Costs</td>
<td>---</td>
<td>$117,993.30</td>
</tr>
<tr>
<td>Insurance</td>
<td>---</td>
<td>$100,000</td>
</tr>
<tr>
<td>Engineering Staff (with benefits)</td>
<td>---</td>
<td>$351,000</td>
</tr>
<tr>
<td>Welding Staff (with benefits)</td>
<td>---</td>
<td>$236,250</td>
</tr>
<tr>
<td>Linemen Staff (with benefits)</td>
<td>---</td>
<td>$506,250</td>
</tr>
<tr>
<td>Administration Staff (with benefits)</td>
<td>---</td>
<td>$94,500</td>
</tr>
<tr>
<td>Marketing Staff (with benefits)</td>
<td>---</td>
<td>$67,500</td>
</tr>
<tr>
<td>Finance Staff (with benefits)</td>
<td>---</td>
<td>$67,500</td>
</tr>
<tr>
<td>Marketing Costs</td>
<td>---</td>
<td>$3,000</td>
</tr>
<tr>
<td>Equipment accessories (gas, etc.)</td>
<td>---</td>
<td>$3,000</td>
</tr>
<tr>
<td><strong>Total Fixed Costs</strong></td>
<td>---</td>
<td><strong>$1,637,241</strong></td>
</tr>
<tr>
<td>Total Costs</td>
<td>---</td>
<td><strong>$3,953,877</strong></td>
</tr>
<tr>
<td>Profit</td>
<td>35% margin</td>
<td>---</td>
</tr>
<tr>
<td>Company (R/D, etc.)</td>
<td>40% margin</td>
<td>---</td>
</tr>
<tr>
<td>Contingency</td>
<td>20% margin</td>
<td>---</td>
</tr>
<tr>
<td>Selling Price</td>
<td>$17,288</td>
<td>$12,966,000</td>
</tr>
<tr>
<td>Profit</td>
<td>---</td>
<td><strong>$9,012,134</strong></td>
</tr>
</tbody>
</table>