LEDeRGY

…"Let us light your path to the future!"

Shawn Russell
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Business plan

Executive summary

LEDeRGY is a unique company with a focus on sustainability. We recognize a growing need for efficient lighting and a need for that lighting to be inexpensive. LEDeRGY has a design to incorporate Light Emitting Diodes (LED) in a manner unlike anyone has ever done to achieve an inexpensive lighting system that requires less than 1/3 of the energy to operate as current lighting systems and lasts up to 5 times as long. The design includes optimizing lighting conditions through the use of LED's in conjunction with reflectors positioned at critical angles to direct light only where it is needed. The finished product is a retrofit kit that is easily implemented into shoebox fixtures that is commonly found among educational campuses.

LEDeRGY excels where the competition is sluggish by recognizing that LED's have a great potential to lead the lighting industry as efficient light sources for outdoor lighting. Implementation of LED's to walkway lighting systems will provide a launch pad for new technology to develop an energy efficient environment with a focus on sustainability. There have not been any movements into the walkway lighting applications due to the current limitations of the light output of LEDs. LEDeRGY has taken advantage of the current technology, while planning for improved LEDs to be introduced in the near future to provide a maximum light output from the LEDs. LEDeRGY will sub contract the fabrication of PC boards and the metal fabrication. It will be responsible for placement of the LEDs and other electrical components, as well as the final assembly of the retrofit kits. It is planned to expand into secondary markets of wall mount fixtures for commercial buildings during year three to head off any competition that may move into the market.

With energy prices on the rise, it is no question that educational facilities will be looking for ways to reduce their energy consumption. This is why the primary customer for the LED retrofit kit is educational campuses. The growing campuses and expanding market for walkway lighting has given LEDeRGY a strong outlook on future demand. We expect to obtain 30 campuses during the first year to equate to a total of 4500 kits sold. The company will sell directly to distributors at a price of $450 per unit with a suggested retail price of $495 per kit to account for the distributor's mark-up. Potential distributors include Grainger, Lowes and Home Depot, since many campuses order products from these suppliers. The sale price of $495 will provide the end user with a 7.7 year payback based on energy and labor savings from the longer lifetime resulting in an annual savings of $64.39 per fixture.

Continuous improvement will allow LEDeRGY to provide the most efficient and cost effective lighting solutions with the most up to date technology. Another competitive advantage that LEDeRGY enjoys is the ability to move quickly and adapt to changing markets to it relatively small size. Research will be continued to develop new and improved lighting products to allow for expansion into new market segments.

Current focuses have been on sustainability and energy efficient products. This will give LEDeRGY a strong foothold in the lighting market. We plan to have revenues in excess of $2 million during the first year, which will grow to $5.5 million in year five. The business will break even during the first year, but it will require a revolving line of credit to bridge receivables. Our anticipated cash burn rate is $160,272/month, which we will be able to meet with our

revenue and payment plans on the leased equipment. We will require a total of 15 skilled and low skilled employees to meet our anticipated demands during the first year. Employees and sub contractors will be selected from the local area, which will contribute positively to the local economy. We hold a large focus on sustainability and in doing so we place a large emphasis on reducing waste from our operations through the design of our products. This will positively affect our ability to obtain a facility in Henrietta NY.

A cumulative of over 5 years of experience in related engineering practices of management, manufacturing, process improvements, product development, material testing, and software implementation have been amassed among the four team leaders. Shawn Russell has a Masters in Engineering and has most recently led a team in the development of the LED retrofit kit. Some of his other accomplishments include the creation and use of 3D kinematic models to analyze dynamic systems, as well as implementing lean practices to save a company up to $360,000. Christine Lagree also has a Masters of Engineering and has experience with developing priority scheduling systems, and managing new system implementation. Taylor Shivell holds a Bachelor's Degree in Mechanical Engineering and most recently has reconfigure manufacturing cells for correct product flow. David Eells holds a Bachelor's of Science in Mechanical Engineering and has most recently worked for ITT Residential and Commercial Water in Seneca Falls, NY, where he modeled submersible pump parts and produced drawings. The team brings a unique and diversified range of talents that LEDeRGY will capitalize on to provide the most competitive products on the market.

LEDeRGY is prepared to offer 5% of equity as collateral in return for a revolving line of credit equal to $600,000 to bridge receivable for the first three months. The continued line of credit will also provide assistance when expanding the business during year three. This continual line of credit will be a start to a beneficial relationship as LEDeRGY continues to grow and branch out into other markets. We are looking for a low interest rate of about 7% on the initial line of credit in return for continual patronage throughout the success of the company.

Industry Analysis:

Industry

LEDeRGY has yet to be established, but will operate in Rochester New York. The market size is assumed to be growing with an increase in demand for higher education. According to the National Center for Education Statistics public Schools have seen a growth 10,333 schools from 1993-2003. This growth suggests new lighting has been installed on many campuses, which provides opportunities for the LED retrofit kit. One possible competitor is Cree Inc, based out of Durham, NC. They are manufactures of efficient LED's and lamps. They have experienced continuous growth as the interest in LED's has risen with new initiatives to conserve energy. One such initiative is the Clean Energy Act of 2007 that bans all incandescent light bulbs by January 2014. This act is a continuous initiative to conserve energy by promoting more efficient compact FL light bulbs. This legislation is a sign of the popular trend of going green and becoming sustainable. After the improvements to indoor lighting have been achieved, we will see a move to improve outdoor lighting. It is the goal of this company to bridge the technology leap by providing a reasonably priced lighting retrofit kit.

Company and the Concept

LED's are constantly being improved as more research and development are being conducted. The retrofit kit offers a bridge to incorporate LED technology into current walkway lighting systems at a reduced payback time so that systems can adapt new technology at a sensible price. New technology will provide more efficient LED's, which will decrease the payback time further by decreasing the power requirements and increasing the energy savings per fixture.

The Product

The design of the retrofit LED lighting system is simple and robust. It is highly versatile, since it was designed to be scalable so that it can be incorporated into different fixtures. The design relies on the following distributors to supply parts: Mouser Electronics, McMaster Carr, Allied Electronics, SMC metals, ETG Inc and Sunstone circuits. The materials are ordered and then distributed accordingly to reduce waste. The major contributor to waste is the fabrication of the back plate, but the Aluminum cut-offs are recyclable.

LEDeRGY will provide a scalable LED retrofit kit for existing Metal Halide and High Pressure Sodium walkway lights at a reasonable price. The company intends to introduce this initial product to develop a base to support research and development of new alternative energy products. The initial product has been designed for Hubble fixtures as well as General Edison shoebox light fixtures. These fixtures are traditionally found on college campuses and other educational facilities.

The major advantage to college campuses is that they can update their lighting systems without investing into expensive fixtures. The retrofit kit includes five LED boards on an aluminum back plate that can be installed in 120, 208 and 240VAC applications. Many educational facilities receive funds for improvement projects, which makes them an ideal candidate to implement new energy saving technology at a low cost. The retrofit kit will be assembled in Rochester New York, after the back plate and circuit boards have been fabricated. The PC boards will be fabricated and then sent to another electronics mounting facility to be completed. Upon completion of the PC boards and fabrication of the back plate, the kit will be completed in-house and then shipped to distributors, such as Grainger.

The retrofit kit will be sold by LEDeRGY to its distributors at $450 with a suggested retail price of $495 to account for a 10% mark-up. This kit offers customers a lifetime of about four times longer than traditional lighting solutions or lasting about 10 - 15 years without replacement, which decreases maintenance costs. The system also uses less energy than the current walkway lighting systems with a comparable light output by providing light only where it is required. The estimated annual energy and maintenance savings per fixture is $64.39 with a payback period of about 7.7 years. One potential drawback is that the product is still in its infancy and new technology is fast emerging, which results in a product that becomes outdated very quickly. The short payback period counters this drawback by making it economically viable for the customer to invest in newer technology before they will need to replace any LED boards.

Entry and Growth Strategy

Successful variables in the marketing plan will be based on the longer lifetime, Energy savings and a positive focus toward sustainability. Advertising will be conducted, but it is the company's plan to gain free publicity by implementing this new technology on campuses across New York that have a focus on sustainability. This will be part of a promotional plan that raises awareness to students and the general public of campus energy usage.

The intent is to grow rapidly over the first three years before competition heavily enters the market. Upon entrance of competition, we will use our understanding of lighting systems to offer similar products for more lighting fixtures, such as wall mount fixtures found on business buildings. This will allow us to expand our market segment and ensure a broader customer base by providing new lighting systems to bridge the implementation of LED lights for traditional less efficient lighting solutions. The growth experienced by the company will allow us to give back to the community by providing more alternative lighting systems to the area school systems that have low amounts of funding. This venture will also increase employment in the immediate area.

Industry/Market Analysis

Customers

Currently the US lighting industry enjoys an estimated $12 billion in sales with an annual. According to the Conservation Bureau, lighting demands the largest single use of electricity by more than 37%, and has increased 33% from 1990 to 2003. This suggests that there is an increase in growth for the lighting industry of about 2.5% each year. The LED lighting retrofit kit will offset the increasing demand for electrical energy and prove to be an ideal solution for institutes to reduce their lighting expenses. The primary customer for the LED walkway lighting retrofit kit is universities and educational facilities. One such interested institution is Rochester Institute of Technology (RIT). Universities and other educational facilities are experiencing a tremendous growth that they are ill equipped to handle. According to Housley Carr in an article for the *Engineering News-Record* described the challenges faced by colleges and universities as "many are finding that they need to serve more students and do so in a way that embraces emerging technologies," which suggest the implementation of energy efficient devices that result in economic savings. Other construction projects such as the $1-$2 billion in projects that continually occur at the University of Washington suggest a need to implement new lighting systems.

The lighting industry has normally been detached from the customers and works through distributors with the exceptions of large industries like GE who also supports direct sales. Customers normally go through a process of examining the expenses in their current lighting systems with energy requirements, maintenance and replacement costs to justify switching to newer energy efficient lighting systems. The decisions are made based on a cost benefit analysis that includes break even point, return on investment and rate of return as major components. A scenario of installing 125 LED retrofit kits resulted in a 7.7 year break even point and an annual savings of $8049 in energy and labor. RIT has expressed a deep interest in sustainability, as they have taken a lead role to convert their campus to include sustainable elements to reduce their environmental impact. They are also responsible for the first Ph D program in sustainability, which is an upcoming trend faced by many institutes and facilities. RIT will be a launch pad for many new sustainable technologies and this will give the LED lighting retrofit kit a testing ground as well as a future reference to establish a reputable name.

Market size

Metal Halide (MH) lamps are experiencing a 12% annual growth and High Pressure Sodium (HPS) lamps are experiencing a 4% annual growth according to David Houghton of the Department Of Energy. The industry suggests a growing market to replace the current walkway lights based on the annual sales of MH and HPS lamps. The growth experienced over the first year of operation will be similar to a major competitor LED Lighting Fixtures, Inc., which is a subsidiary of Cree Inc. The LED Lighting Fixtures, Inc. enjoyed annual sales of $3 million according to Hoovers online data base.

The major contributors to this market growth are the increasing interest in sustainability and environmental impacts of energy consumption. The government has also increased spending in programs dedicated to sustainability and energy efficient products, which will drive more interest and support. One program that exists in New York State that provides support for new energy efficient technologies is the New York State Energy Research and Development Authority (NYSERDA). The trends for efficient lighting have been growing with the increase in new technology and greater education and awareness of the environmental impacts of energy usage.

Competition and Competitive Edges

The LED walkway lighting retrofit kit is a unique development that offers many advantages to its customers. It provides a longer life for walkway lights than traditional MH and HPS lamps, which correspond to reduced maintenance and replacement costs. The LED lighting system will last about three times as long as traditional walkway lighting. The new system will utilize about one third of electrical energy with a comparable light output. Light pollution will be reduced, as a lot of thought has been given to design a lighting system that outputs light only where it is needed. Directing light to where it is needed only also results in less light pollution, which will be beneficial with the increased attention to dark sky legislation that limits the amount of excess light output.

Our closest competitor's product is a LED street light system developed by Cree, Inc. This poses a threat for possible entrance into the walkway lighting market by closely linked competitors, such as Cree or GE. Although there are many possible competitors that could move into the walkway lighting industry, most are developing interior low wattage LED lighting systems. This is most likely do to the technology limits LEDs are currently facing. There is great potential for more efficient high powered LED's to be introduced in upcoming years. Current research suggests by 2012 LED's will be more efficient than HPS lighting, which has proven to be a staple in efficient outdoor lighting.

Most lighting manufactures and developers do not sell directly to customers. They have an expansive network of distributors such as Home Depot and Grainger to sell to end customers. Larger lighting industries such as GE have both distributors and direct sales, but it is uncommon amongst smaller manufacturers. This suggests a possible entrance into the market by networking with similar distributors. The main distributors that would be approached are larger industries such as Grainger, Home Depot and Lowes to gain attention by our primary customer of universities and educational facilities.

The leading competitors that will pose a potential threat are Cree, Inc located in Durham, NC and a subsidiary LED lighting Fixtures located in Durham and Morrisville, NC. These companies are immersed in the production and sales of LED's and LED products. Other possible competitors include Technical Consumer Products, Inc located in Aurora, OH which produces retrofit kits for incandescent lighting systems. These smaller companies prove to be a large threat by their large growth rate, while larger companies have a large amount of resources to allocate to the development of similar walkway lighting systems. The vulnerabilities of the up

and coming businesses are that most have been bought by the larger companies making them slower to implement new technology or develop new products. Larger competitors include GE, Philips lighting with a subsidiary of JJI Lighting Group, Inc located in CT, Westinghouse Lighting Corporation in Philadelphia Pa that produces decorative LED lighting solutions. The advantages of these companies are the established reputation for quality products and their considerable amounts of resources that can be directed toward retrofit kits for walkway lights.

Estimated Market Share and Sales

The main advantage of the LED walkway light retrofit kit is that it fits into the customers' existing lighting systems, and doesn't require the customer to purchase a new fixture. This advantage results in a large economic savings by the customer and makes the break even period shorter, which relates to an increased demand for the product. These customers would most likely include educational facilities where student safety is highly important, and secondly commercial building applications that utilize similar wall mount MH or HPS lights. The introduction of the LED walkway light retrofit kit will bring a large increase of interest to our product relating to first year revenue of $2.03 million with a growth rate of 25% each year to achieve revenue of $3.5 million at the end of three years and $5.5 million at the end of year five. There is an expected interest of competing firms to emerge around year three, which might relate in a lower growth rate. This interjection will be answered with the company's agility by including the latest technology and improved LED's into the product and expansion into secondary markets. The introduction of competitors will also be fended off by the established reputation of being the first large developers of LED replacement lighting systems. Continual market analysis will be conducted of our competition and the company will respond with more public visibility and product diversification by expanding into residential markets.

Business Description

LEDeRGY will be founded on the scalable LED retrofit kit, which will be integrated into a product line that encompasses secondary markets. The success of the business will be attributed to the LED walkway lighting retrofit kit, which provides an economical alternative for Metal Halide and High Pressure Sodium (HPS) outdoor walkway lighting. The LED system is easily adapted to current lighting fixtures and requires less overhead installation costs. It has a lifespan of about four times that of a metal halide lamp and better color temperature than HPS lamps making it the ideal solution for overhead fixtures and low maintenance applications. The product also requires about one third of energy for operation, which relates to energy cost savings as well as a positive environmental impact.

Marketing Plan

Overall Marketing Strategy

LEDeRGY will attract large distributors such as Grainger and Lowes to reduce the needed overhead for sales. We will market to the end customers with mailings to increase the interest in our product. We also expect to take advantage of publicity generated from the initial Senior Design project at Rochester Institute of Technology. Our end customers include any large campus facilities, such as universities and other educational facilities.

A warranty against component malfunction will be provided with the product to demonstrate our commitment to quality. We don't offer installation service, and we will leave the recommendations up to the distributor. This will reduce our liability for faulty installations. The manufacturers warranty will assist with establishing a reputable name for LEDeRGY, and generating sales.

The LED retrofit kit will initially be offered as a regional product to establish a strong base for LEDeRGY to expand its product line. Once a substantial product line has been established, LEDeRGY will expand to a national focus with facilities in areas central to our distributor's locations. We will also focus on cultural trends that encourage sustainability, and locate in areas where there is a strong focus on energy efficient lighting, such as California.

It is likely that the lighting industry follows the construction industry trends, which tend to decrease during the winter season in the North east region. During the slow season, LEDeRGY will focus on product development and working with local universities to incorporate LED retrofit kits among their campus.

LEDeRGY will seek out state incentive programs provided by NYSERDA for product development funds. LEDeRGY will work along side of NYSERDA by contacting the schools that have demonstrated interest in improving their energy consumption by participating in the School Power Naturally program and other programs that support the improvements and education of alternative energy products. LEDeRGY recognize that there have been funding for lighting replacement projects offered by NYSERDA that we plan to capitalize on.

Pricing

The LED retrofit kit will be sold to our distributors at $450.00 per kit with the suggested retail price of $495.00 per kit to provide for at 10% markup. This is more than the LED replacement bulb for street lighting sold on OkSolar.com that sells for $395.00 plus shipping, but our product is uniquely designed for existing walkway shoebox fixtures.

Our gross profit margin during the first year will be 26% and rise to 43% by year five. The first year revenues of $2.03 million will provide sufficient funds for warranty costs estimated at 2% of revenues. There will be little training required during the first three years, since the majority

of the in-house operations will be assembly. This allows us to absorb training costs into our labor expenses. Sales and distribution will be a responsibility of the President/CEO until year four when a sales manager will be hired, in order to keep labor costs low. All costs allow us to enjoy net earnings of $50,844 during the first year which will increase to $1,004,509 during year five.

The LED retrofit kit is the first of its kind, which will allow us to enjoy a large revenue stream until competition starts to move into the market. This will be the time when LEDeRGY branches out into its secondary market as well as bringing the component placement process in-house, which will drive costs down allowing us to decrease the sale price while maintaining our profit margins.

Sales Tactics

The fourth year will bring new processes and expanded product lines to LEDeRGY and in response there will be a need to hire a sales manager to head up all distributor relations. Secondary markets will be explored with the same distributors, allowing us to keep our sales department small. They will build and maintain relations with distributors such as Grainger, Lowes and Home Depot.

The sales department will also be required to maintain a simple website that will describe our product line and redirect customers to one of our distributors. Sales are expected to increase steadily by 25% per year, which the responsible sales associate is required to achieve. We also expect to see an increase of 30% in year 3 due to the addition of a sales manager.

Service and Warranty Policies

Warranties will enable our customers to pay high initial costs with confidence that they will see a return on their investment. We will provide a lifetime warranty against manufacturer defect, which will be possible through quality control checks to limit defective products from reaching our customers. The end user will need to contact LEDeRGY directly to report defective products and to receive replacement parts. This should limit the amount of false claims encountered by our distributors, as well as initiating a quick response to any problems that requires a design change.

Advertising and Promotion

A mail distribution will be routinely performed to raise product awareness among campus facility managers. This should generate a majority of the interest, but we will also rely on “word of mouth,” and the media coverage that we expect to receive from initiating changes on educational campuses. We plan to allocate $5000 in funds to our mail campaign to reach schools and other campuses in New York State. This allowance will increase 20% each year, which

results in $10,368 during year five. Our advertising and sales campaign will grow with the company to expand to regional and eventually national markets over the next ten years.

Distribution

The vital part of LEDeRGY is the distribution channel. By selling to distributors, we are able to keep our sales and transportation costs low as those are incurred largely by the distributor. We have an expansive amount of potential distributor locations. Grainger has 425 locations in the USA alone.

Transportation costs will be determined on an individual basis from distributor term negotiations, but we expect to incur more than half the costs of transporting product to the distributors. The transportation cost is estimated at 2% of revenue, which is $40,500.00 for the first year and $109,688 during the fifth year.

Manufacturing and Operations Plan

Operating cycle

Manufacturing

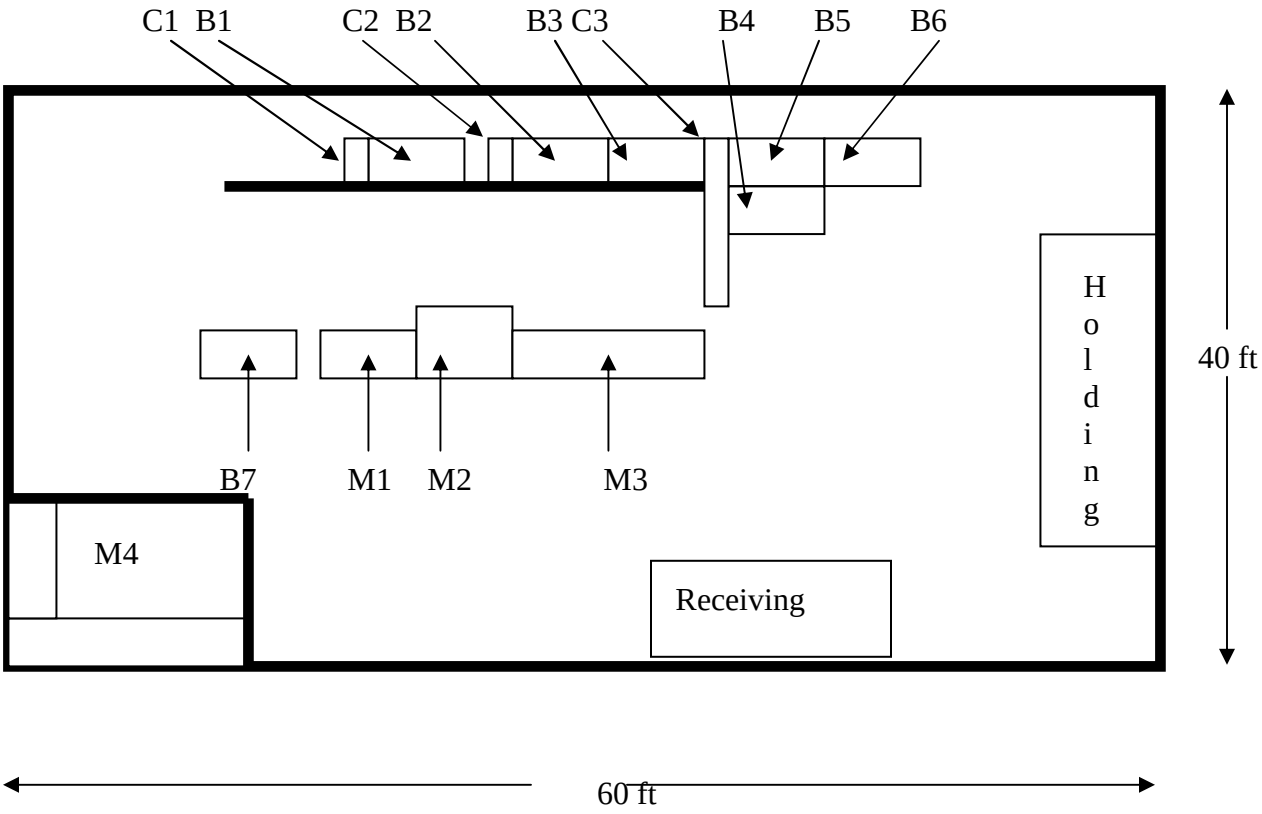
The fabrication of the back plate and circuit boards has a three week lead time on orders of 500. The components will be ordered during the fabrication time and will arrive around the same time as the PC boards. The component placement will be completed in-house along with the final assembly. The production rate will be one kit every 20 minutes resulting in a monthly production quantity of 432 kits. Two shifts of board production will be utilized during two quarters when the demand per month reaches 500 or more retrofit kits. Process improvements and leasing more equipment in year three will increase our production capabilities to meet the quantity demanded. We will maintain an excess stock of components to have the capability to produce 25% of the current level of production. Components will be circulated through the production line with a first in first out (FIFO) inventory system.

Once the PC boards arrive, they will be taken directly to the machine shop where they will have the key-hole slots cut. The boards will then arrive at the SMT area where the boards will be cleaned and inspected, then paste will be dispensed and components are placed on batch sizes of ten boards. The boards will then be sent through a reflow machine. After the boards are completed, they will be sent directly to the board installation station of the assembly area.

Assembly

The assembly area relies heavily on low skilled workers that work 7.2 hours per day. The processes outlined require a total of 9 low skilled workers and 1 technician. We have instituted lean manufacturing practices where applicable in an effort to maximize production efficiency. The 500 unit per month demand is an average throughout the year, but we expect a slow down during the winter season to mimic the construction industry. We expect to only need to build 300 units per month. The employees will be reallocated to maintenance tasks and educational training during the slower times.

Sets of five boards will then travel to the assembly area. Back plates will be assembled at the first station and then handed to the second station where two transformers will be installed. Five LED boards will then be installed at station three. Station four will produce wiring harnesses and hand them directly to station five where the wiring harnesses will be installed. The retrofit kit will then be handed to station six to be packaged and transported to the holding area until they are shipped out. The process flow can be seen in the following floor plan.



2400sqft workspace + 600sqft offices, reception, and restrooms = 3000sqft
Utilities needed: 120VAC, 208VAC, 480VAC

Location	Description
C1	3ft. Parts conveyor hold back plate parts
B1	6 ft. bench for back plate assembly
C2	3ft. Parts conveyor hold transformers
B2	6 ft. bench for transformer installation
C3	10 ft. Parts conveyor hold bins of LED boards
B3	6 ft. bench for LED board installation
B4	6 ft. bench for wiring harness assembly
B5	6 ft. bench for wiring harness installation
B6	6 ft. bench for Packaging
B7	6 ft. bench for cleaning and inspection area
M1	Paste and dispense machine
M2	Component placement machine
M3	Reflow oven
M4	Machine shop

Process requirements

Machining:

Process	required time (min)	Required personnel	Personnel description	Required equipment	Estimated cost of equipment
Drilling operation - key-holes in stacks of 5; 3 drill presses	5	1	low skill	3 drill presses	$ 400.00
Milling operation - key-holes in stacks of 5	10	1	low skill	1 bench top mill	$ 1,200.00
Totals:	15				$ 1,600.00

Component Placement:

Process	required time (min)	Required personnel	Personnel description	Required equipment	Estimated cost of equipment
Clean PCB's/Inspect	5	1	*Technician*	1 bench top mill	$ 600.00
Paste dispense	5	0	NA	1 paste dispense machine	$ 400,000.00
Component placement	5	0	NA	1 component placement machine	$ 500,000.00
Reflow	8	0	NA	1 reflow machine	$ 200,000.00
Travel to assembly line	2	0	NA	1 Conveyor send boards in bins, 1 conveyor to return bins	$ 600.00
Totals:	25				$ 1,200.00

Wire Harness Manufacturing:

Process	Required time (min)	Required personnel	Personnel description	Required equipment	Estimated cost of equipment
Cut 10 strands of wire for the boards and 1 strand for the ground connector and strip wire	9	2	Low skilled	2 wire cutter, 2 wire stripper	$ 80.00
Attach pin connectors to the 10 board wires	9	0	NA	2 Crimper	$ 40.00
bundle wire	2	0	NA	NA	$ -
Transport to station 5	0	0	NA	NA	$ -
Totals:	20				$ 120.00

Final Assembly:

Process	Required time (min)	Required personnel	Personnel description	Required equipment	Estimated cost of equipment
Assemble 3 plates of aluminum to create back plate	5	1	low skilled	1 Screw gun, 1 bench	$ 700.00
Install 2 transformers	5	1	low skilled	1 Screw gun, 1 bench	$ 700.00
Install 5 LED boards	5	1	low skilled	1 Screw gun, 1 bench	$ 700.00
Install wiring harness	10	1	low skilled	1 side cutters for zip ties, 1 bench	$ 610.00
Totals:	25				$ 2,710.00

Packaging:

Process	Required time (min)	Required personnel	Personnel description	Required equipment	Estimated cost of equipment
Packaging	9	1	low skilled	1 Tape dispenser, 1 bench	$ 620.00
Transport to holding area	1	0	Packager responsibility	Pallet jack	$ 600.00
Totals:	10				$ 1,220.00

Graphical location

LEDeRGY will be located in South Henrietta New York, which is about 15 minutes from the city of Rochester. By locating outside of the city of Rochester, we expect to pay a lower rent, but have many of the same customers that we would if we were located in the city. Another advantage of working in South Henrietta is the large amounts of related optical industries in the area that could offer new technology that LEDeRGY could utilize.

Facilities and improvements

The facilities for assembly and office space needs to be acquired before customer orders are taken. The space will be leased; capital intensive equipment will be leased while non capital intensive equipment will be purchased.
We will require a facility that is at least 3000 sqft to accommodate manufacturing, assembly, offices, reception area, restrooms, packaging and shipping. The current average cost of floor space in Rochester New York is about $9 a sqft annually, resulting in about $27,000 for the facility rent. The building would need a few modifications to include a receptionist area, break room, office, and workshop estimated at $10,000.

Capital intensive equipment required for the surface mount technology (SMT) will be leased from Eastern Technical Center. Leasing allows LEDeRGY reduce startup equipment costs by 65 percent. Eastern Technical Center also provides servicing for the leased equipment and other support services that will give LEDeRGY a favorable advantage compared to purchasing the equipment.

Non capital intensive equipment would be small but there would be a need for benches, hand tools, electrical testing equipment such as digital multi meters and power supplies, which are estimated at $6800. Office equipment and supplies adds another $5000.

The fourth year will be a milestone when reacting to the anticipated entry of competition and our expansion into the secondary markets. We will expand our production capabilities by leasing another line of SMT equipment and doubling our assembly capacity. This will shorten the lead time, but it will also require an additional investment of about $715,000 and an increase in power consumption costs from $6000 per year to $12,000 per year. We will also need to increase our workspace, and rent 6000 sqft, which relates to $54,000 in rent per year.

Strategy and plans

At the start of the venture, we will cut key-holes in the PC boards and place components on PC boards, as well as assemble and package products. This allows us to have a relatively small and low skilled workforce during the startup period. We will then grow by expanding our skilled and equipment intensive tasks in house. We expect to have an average of 400 units per month for the first quarter, 500 units per month for the second quarter and 300 units per month quantity

demanded for the fourth and fifth quarters, which results in a total of 4500 units built and sold during the first year. The material cost associated with each unit is estimated at $191 which contributes to our total variable costs of about $1.36 million during the first year.

Labor will consist of 9 low skilled workers at $10 per hour during the first year and one technician to operate the SMT equipment with a first year salary of $36,000. There will be the President/CEO and CFO with a salary of $54,000 for the first year. The Product Development Specialist will maintain quality of assemblies and develop new products with the assistance of the Optic Development Specialist with a salary of $54,000 for the first year. There will also be a need for a receptionist with a starting salary of $30,000 per year. Legal advice and accounting services will be contracted out based on the situation and will not be included in the labor costs. The total wages and compensations are $539,580 for the first year. There will be an additional $42,000.00 will be allocated in year three to hire a sales manager, and an additional $303,120.00 for hourly workers.

Regulatory and legal issues

We need to obtain UL certification before producing products. This requires additional funds for testing by the UL employees. The estimated cost of obtaining UL certification is $4000. The only other legal issue is complying with New York State labor laws. When we hire low skilled workers, they will need to be 18 years of age or older in order to work in an industrial environment.

Management Plan

Organization

President/CEO – Shawn Russell has earned his Masters of Engineering with a concentration in Business at Rochester Institute of Technology (RIT). He also holds a Bachelors degree in Mechanical Engineering from RIT. He has a cumulative of 2 ½ years of industry experience in the related fields of material testing, product development, manufacturing and process improvements. He has taken part one the Professional Engineers examination. The most recent position held was at The Boeing Company in Everett WA, where he built kinematic models to analyze system responses.

CFO - Christine Lagree earned her Master of Engineering degree in Industrial Engineering from Rochester Institute of Technology. She also holds a Bachelor of Science degree in Industrial Engineering with a minor in Public Policy from RIT. She has experience in the defense and semiconductor industries as well as metal plating and rubber manufacturing. She has worked on improving product flow, developing a priority scheduling system, and managing new system implementation.

Product Development Specialist - Taylor Shivell holds a Bachelor's Degree in Mechanical Engineering with a minor in Economics from Rochester Institute of Technology. He has a cumulative of 2 years experience in related fields as product engineering at Pitney Bowes where he re-designed parts and systems to update a line of address printing machines, and designed and built life test fixtures. Taylor also has experience at Sargent Manufacturing with lean manufacturing techniques and practices, where he worked to streamline existing production lines, and supervised the implementation of new ones. Most recently, Taylor assumed a similar role at Pratt & Whitney where he worked to reconfigure manufacturing cells for correct product flow.

Optic Development Specialist - David Eells has earned his Bachelor's of Science in Mechanical Engineering with a focus in Aerospace from Rochester Institute of Technology (RIT). He has a cumulative total of one year experience in mechanical modeling and drafting, process control and creation, and process improvement. Most recently, he held a position at ITT Residential and Commercial Water in Seneca Falls, NY, where he modeled submersible pump parts and produced drawings.

Key Management Personnel

Position	Highlights	Individual
CEO/President	Charts the direction of the company and provides a beneficial work environment for all employees.	Shawn Russell
CFO	Monitors competition and brings suggestions of new markets to the board's attention.	Christine Lagree
Product Development Specialist	Explores new product lines and continuous improvement.	Taylor Shivell
Optic Development Specialist	Develops new light systems that optimize light distribution characteristics through computer simulations.	David Eells

Management Compensation and Ownership

Shawn Russell will remain the majority share holder with at least 75% of shares. The management team will receive 2% of the shares each to compensate for initial salaries, and to inspire ownership. The Management team will also receive annual performance bonuses and will be able to opt into a stock option in year three.

Other Investors

Investors will not be required at start-up, but may be required in future years. There have been 7% of shares set aside for investment potential for the future.

Employment and Other Agreements and Stock Option and Bonus Plans

There will be a bonus plan installed at year three. All employees will be given a bonus in December based upon the performance of the company. The bonus will be a base of 0.05% of salary +0.02% for every $100,000 in net earnings above the forecasted amount. After year three, all employees will be eligible to receive a bonus upon their date of hire.

Board of Directors

The board of directors will include the President/CEO and the CFO. We hope to attract the assistance of a technical manager with at least five years experience serving on a board. We also hope to attract a business oriented individual who also has at least five years experience serving on boards. One individual that has both the technical and business background is Charles Swoboda, the CEO and President of CREE Inc. He has been in managerial positions related to the LED industry for more than 14 years. Although it is highly unlikely that he would serve on a potential competitor's board of directors, he is a great example of the type of person that LEDeRGY is seeking. The two individuals will be compensated from serving on the board with 5% equity each, contingent upon at least five years of service.

Other Shareholders, Rights, and Restrictions

There are no other shareholders during start up, but LEDeRGY reserves the right to offer equity in return for funding in the future.

Supporting professional Advisors and Services

There will be an initial need for legal advice provided by Morris & Morris located in Rochester New York. They specialize in Small Business and have received the LexisNexis Peer Review Rating that is based on the professional skills and high ethical practices though out the attorney's career.

Accounting services will be contracted to Accounting for Small Businesses, Inc (ASB). They provide 18 years of experience in the Rochester area, and provide support services such as tax preparation, software selection, pension plan consulting, business modeling and business financing.

Contingency & Risk Plan

Assumptions

There have been many assumptions made through out this business plan. The major assumptions related to the start-up period are:

1.) The first month will have lower than normal production due to equipment set-up and training.
2.) The quantity demanded will follow the construction trends of slowing down during winter months.
3.) Leased equipment reduces equipment costs by 65%.
4.) Office equipment and supplies expenses will be higher during the first year due to equipment purchases and then it will be at a decreased level for the following years.
5.) There will be a 20% reduction in material cost starting year 3 due to improved LED technology and more manufacturers entering the market.
6.) The new sales manager can increase sales by 30% in year three.

Risks

LEDeRGY will experience many risks as it goes through the start-up period. One major risk is that large lighting industries such as GE might move into the LED retrofit kit market and take business from LEDeRGY through their capabilities to produce high volumes at low costs. Another major risk is the upfront cost associated with the SMT equipment. We will need to borrow funds for the first few months if we cannot secure a payment plan with Eastern Technical Center. Other risks include running out of cash before orders are secured, an increase in material costs, sales projections not being attainable or more orders are taken than can be supported by our facility, the product still needs to be finalized.

Mitigations

The business plan anticipates large companies entering the market around year 3, where LEDeRGY will start to expand its production capabilities and branch into secondary markets of wall mount fixtures for commercial buildings. The cost associated with the SMT equipment has been reduced significantly through leasing, and there will be further investigation into payment plans with Eastern Technical Center. There has been interest from RIT in ordering LED retrofit kits, which limits the risk of not having orders before money runs out. Other Universities will be approached in the Rochester area for the next customers. Material costs will most likely increase on such things as aluminum, but the cost of LEDs is expected to decrease, which should offset the costs. Sales projections will be achievable through a dedicated personal service where the President will discuss options with the end customer during the company's start-up period. If the sales exceed the ability of the company to produce retrofit kits, then there will be investigation into outsourcing SMT work to local SMT shops. The product is finished and in working

condition, therefore the changes are minor and can occur before the equipment is set-up. LEDeRGY will be self sustaining from the first year, but there will be a need for a revolving line of credit to bridge receivables.

Exit Strategy

The goal of this business is to grow into a conglomerate where it will have many different energy efficient products as well as alternative energy generation products under its product lines. There is a possibility that the company will be sold to a larger competitor if the secondary markets don't prove to be as strong as first thought. In this case the terms of sale will be based on fair market value of the company and the personnel will be compensated for any shares that they may hold. The positions held by individuals will be secured and honored by the purchaser as part of the terms of sale.

Financial Plan

LEDeRGY

Balance Sheet

Years 1 to 5

($)

	Begin	Year 1	Year 2	Year 3	Year 4	Year 5
ASSETS						
CURRENT ASSETS						
Cash	5,000	(724,841)	(1,189,667)	(1,287,519)	(1,837,158)	(1,825,686)
Accounts Receivable		134,460	168,075	218,498	273,122	341,402
inventories		134,460	168,075	176,378	220,472	275,590
Other Current Assets		16,200	20,250	26,325	32,906	41,133
Total Current Assets	5,000	(439,721)	(833,267)	(866,319)	(1,310,658)	(1,167,561)
PROPERTY & EQUIPMENT	0	652,705	1,224,250	1,724,343	2,802,640	3,733,850
TOTAL ASSETS	5,000	212,984	390,983	858,024	1,491,983	2,566,289
LIABILITIES & SHAREHOLDERS' EQUITY						
CURRENT LIABILITIES						
Short Term Debt	0	0	0	0	0	0
Accounts Payable & Accrued Expen		140,940	176,175	229,028	286,284	357,855
Other Current Liab		16,200	20,250	26,325	32,906	41,133
Current portion of long term debt	0	0	0	0	0	0
Total Current Liabilities	0	157,140	196,425	255,353	319,191	398,988
LONG TERM DEBT (less current portion)	0	0	0	0	0	0
STOCKHOLDERS' EQUITY						
CommonStock	0	0	0	0	0	0
Preferred Stock	0	0	0	0	0	0
Retained Earnings		50,844	189,558	597,671	1,167,792	2,162,301
Total Equity	0	50,844	189,558	597,671	1,167,792	2,162,301
TOTAL LIABILITIES & EQUITY	0	207,984	385,983	853,024	1,486,983	2,561,289

LEDeRGY

Income Statement

Years 1 to 5
($)

	Year 1	Year 2	Year 3	Year 4	Year 5
NET REVENUES	2,025,000	2,700,000	3,510,000	4,387,500	5,484,375
COST OF REVENUE	1,505,294	2,000,485	2,257,598	2,799,344	3,128,926
% of Revenues	74.3%	74.1%	64.3%	63.8%	57.1%
GROSS PROFIT	519,706	699,515	1,252,402	1,588,156	2,355,449
% of Revenues	25.7%	25.9%	35.7%	36.2%	42.9%
OPERATING EXPENSES					
Sales & Marketing	15,125	19,500	73,890	82,490	91,259
Research & Development	190,850	203,568	221,040	241,338	259,700
General and Administration	211,992	233,923	261,949	292,460	325,308
Total Operating Expenses	417,967	456,991	556,879	616,288	676,267
% of Revenues	21%	17%	16%	14%	12%
EARNINGS FROM OPERATIONS	101,740	242,523	695,523	971,868	1,679,181
EXTRAORDINARY INCOME / (EXPENSE)	(17,000)	(3,000)	(7,000)	(5,000)	(5,000)
EARNINGS BEFORE INTEREST & TAXES	84,740	239,523	688,523	966,868	1,674,181
INTEREST INCOME / (EXPENSE)	0	0	0	0	0
NET EARNINGS BEFORE TAXES	84,740	239,523	688,523	966,868	1,674,181
TAXES	(33,896)	(95,809)	(275,409)	(386,747)	(669,673)
NET EARNINGS	50,844	143,714	413,114	580,121	1,004,509
% of Revenues	2.5%	5.3%	11.8%	13.2%	18.3%

LEDeRGY

Cash Flow Statememt

Years 1 to 5

($)

		Year 1	Year 2	Year 3	Year 4	Year 5
OPERATING ACTIVITIES						
Net Earnings		50,844	143,714	413,114	580,121	1,004,509
Depreciation		74,145	146,455	218,907	362,552	506,790
Working Capital Changes						
(Increase)/Decrease Accounts Receivable		(134,460)	(33,615)	(50,423)	(54,624)	(68,280)
(Increase)/Decrease Inventories		(134,460)	(33,615)	(8,302)	(44,094)	(55,118)
(Increase)/Decrease Other Current Assets		(16,200)	(4,050)	(6,075)	(6,581)	(8,227)
Increase/(Decrease) Accts Pay & Accrd Expenses		140,940	35,235	52,853	57,257	71,571
Increase/(Decrease) Other Current Liab		16,200	4,050	6,075	6,581	8,227
Net Cash Provided/(Used) by Operating Activities		(2,991)	258,174	626,148	901,211	1,459,472
INVESTING ACTIVITIES						
Property & Equipment		(726,850)	(718,000)	(719,000)	(1,440,850)	(1,438,000)
Other						
Net Cash Used in Investing Activities		(726,850)	(718,000)	(719,000)	(1,440,850)	(1,438,000)
FINANCING ACTIVITIES						
Increase/(Decrease) Short Term Debt		0	0	0	0	0
Increase/(Decrease) Curr. Portion LTD		0	0	0	0	0
Increase/(Decrease) Long Term Debt		0	0	0	0	0
Increase/(Decrease) Common Stock		0	0	0	0	0
Increase/(Decrease) Preferred Stock		0	0	0	0	0
Dividends Declared		0	(5,000)	(5,000)	(10,000)	(10,000)
Net Cash Provided / (Used) by Financing		0	(5,000)	(5,000)	(10,000)	(10,000)
INCREASE/(DECREASE) IN CASH		(729,841)	(464,826)	(97,852)	(549,639)	11,472
CASH AT BEGINNING OF YEAR		5,000	(724,841)	(1,189,667)	(1,287,519)	(1,837,158)
CASH AT END OF YEAR	5,000	(724,841)	(1,189,667)	(1,287,519)	(1,837,158)	(1,825,686)

LEDeRGY

Summary

Years 1 to 5

	Year 1	Year 2	Year 3	Year 4	Year 5
Summary Financials ($)					
Revenue	2,025,000	2,700,000	3,510,000	4,387,500	5,484,375
Gross Profit	519,706	699,515	1,252,402	1,588,156	2,355,449
EBIT	84,740	239,523	688,523	966,868	1,674,181
EBITDA	158,885	385,978	907,430	1,329,420	2,180,972
Net Earnings	50,844	143,714	413,114	580,121	1,004,509
Net Cash from Operating Activities	(2,991)	258,174	626,148	901,211	1,459,472
Capital Expenditures	726,850	718,000	719,000	1,440,850	1,438,000
Interest Income/(Expense)	0	0	0	0	0
Dividends	0	5,000	5,000	10,000	10,000
Cash	(724,841)	(1,189,667)	(1,287,519)	(1,837,158)	(1,825,686)
Total Equity	50,844	189,558	597,671	1,167,792	2,162,301
Total Debt	0	0	0	0	0
Growth					
Revenue Growth Rate - CAGR:		33%	30%	25%	25%
Net Earnings Growth Rate - CAGR:		182.7%	187.5%	40.4%	73.2%
Ratios					
Current Ratio	-2.8	-4.2	-3.4	-4.1	-2.9
Debt to Capital (LT Debt + Equity)	0.0	0.0	0.0	0.0	0.0
Profitability					
Gross Profit %	25.7%	25.9%	35.7%	36.2%	42.9%
Operating Expenses %	20.6%	16.9%	15.9%	14.0%	12.3%
Net Earnings %	2.5%	5.3%	11.8%	13.2%	18.3%
Returns					
Return on Assets	23.9%	36.8%	48.1%	38.9%	39.1%
Return on Equity	100.0%	75.8%	69.1%	49.7%	46.5%
Return on Capital (LT Debt + Equity)	100.0%	75.8%	69.1%	49.7%	46.5%