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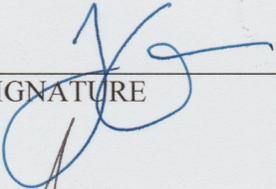
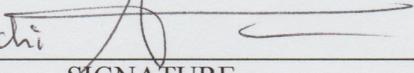
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Executive Summary

This analysis provides insight into the viability of the INI Universal Propane Adapter Kit (UPAK™) in the household consumer market, both domestically and on an international platform. It was important to distinguish profitability within the market and outline prospective gross revenues in the foreseeable future through growth trends and year over year increases. Not only was it determined that INI Power Systems should pursue this highly lucrative and generous market, but in doing so the firm needs to make some necessary changes to accommodate the needs of the end-users. If the company can find a way to adapt to the consumer needs of the majority user, then no time should be wasted in entering the market with not only the Universal Propane Adapter Kit, but the entire family of products offered by INI.

A wide range of industries were observed to see if potential was found and deemed prominent for new entrants. Multiple industries that include portable cooking stoves and outdoor cooking equipment were analyzed. The goal was to understand if the market needed propane adapter kits or if there already existed an industry leader who has absorbed most of the market share. It was concluded that the outdoor cooking market is growing and has the inherent qualities for large amounts of revenue, however it didn't seem to be the most profitable sector for the propane adapter kit. Some of the new products being introduced into the market have built in technologies that make them compatible with numerous items and types of fuel. The vast majority of portable stoves and grills are switching to electric rather than using gas and propane, which seems to be environmentally friendlier and less dangerous than traditional outdoor cooking methods. Therefore, it was decided that this industry and market goods should not be the primary focus of INI Power Systems.

The company originally produced the propane adapter kit for one specific reason, and that was to be able to allow the use of propane in their generators. Thus, it seemed important to take a closer look at the small engine and generator market to discover its viability and understand where the competition is standing. After numerous online searches and phone calls to competitor companies, it was confirmed that many other adapter and conversion kits exist on the market, although none of them were leading the industry and/or controlling the market. According to a number of sites including IBISWorld, the size and forecasted growth in this industry is gigantic, and international markets are seemingly becoming larger year after year. If INI Power Systems would like to maximize their potential earnings, then it must have ambitions of entering the global household consumer market.

After demonstrating a conservative estimate as to the potential market size and revenue streams that can be acquired by the company, the final conclusion and recommendation could be made. With just a few small changes to make the product more affordable to the average consumer and establishing a strategic relationship with one or two large distributors with international outlets, the doors are wide open for INI Power Systems to dominate the market and create brand identity that outweighs the competition.

1.1) Company Profile: INI Power Systems

INI Power Systems, Inc. was founded in 2001 and is headquartered in Morrisville, North Carolina. The firm specializes in developing custom portable generators, hybrid power solutions and adaptors for state and federal agencies across the United States and around the globe. INI works closely with local law enforcement agencies, the US Department of Defense, various other governmental agencies and international organizations to provide optimal power solutions for various military and tactical applications in remote, austere, unimproved environments. These include temporary military base camps, airborne command posts and covert operative missions, as well as logistical uses within war zones. Some of INI's products include multi-fuel portable generators ranging from 500W to 5KW, as well as intellectual property technologies that promote a reduction in carbon emissions and an increase of fuel efficiency.

In addition, INI Power Systems president and primary inventor Larry Markoski holds 15 patents in numerous fields, including flex fuel engine and generator technologies. Their innovative flex fuel applications allow standard gasoline generators to be transformed into flexible and versatile multi-fuel generators, which allows them to be "capable of operation with a large array of compressed and liquid fuels, including medium distillate fuels in support of the Department of Defense's JP-8/F-24 Single Fuel Forward requirement" (Soldier Systems, 2015). These one-man portable generators and engines allow combatants to easily maneuver territory without sacrificing key positions or strategic strongholds, while maintaining instantaneous power at a moment's notice. In addition, INI Power produces several further options and accessories to their generators, including several adapter kits. These kits allow a standard generator to consume compressed gas for power, such as propane and butane, which gives the end user more options for durability and functionality.

Some of the products that INI Power Systems currently produce include the Trinity™ 1000 Autonomous Lightweight Lithium-ion Hybrid (ALLY™) Deployable Power Kit, the IntelliGEN™ 1000 AUTO Flex-Fuel Generator with 2000 Hour Sustainment Kit, the Autonomous Lightweight Lithium-ion Hybrid (ALLY™) 2000/1000 Power Router, the Austere Low Profile Lightweight Expeditionary Solar (ALLIES™) 500 Kit, and many other variations of these products and numerous accessories. In addition, INI offers a 2-year warranty on any of its products that have defects in material or workmanship and will repair or replace the product free of charge.

1.1.2) Introduction to Propane Adapter Technology

The company offers a few other products in addition to their flex-fuel generators that have recently been of interest to some extremely large industry leaders. One of the accessory products INI Power Systems develops and offers is the Universal Propane Adapter Kit™ 20 LBS (UPAK™ 20LBS) and the Universal Propane Adapter Kit (UPAK™). This versatile device of the INI product line allows the multi-fuel generators to be powered through compressed gas,

or more specifically propane. The INI generators compatible with this technology are the 1kw, 2kw, and 5kw generators, as well as any other internal combustion engine or other commercial generators.

Each kit comes with 1 Universal Propane Adapter Kit and 3 extension hoses with Acme nut for using different sized propane tanks. By allowing a variety of different sizes to be used, INI has supported the numerous applications for the adapter and its versatility in the marketplace. In addition, it also accepts any size propane tank, from standard barbeque propane bottles to smaller propane torch canisters, which also provides adaptability to a wide range of consumers. The company also owns intellectual property that protects this technology from being replicated and will further help define INI Power Systems success in the market.

In order to create the device, the fluid-control circuit needed to be altered and understood in comparison to the functions of propane gas. Various components, including multiple valves, regulators, and governors had to be manipulated in order to work properly with the multi-fuel technology (Porticos). There is no doubt that the mechanical engineering process took countless hours and multiple trial and errors in order to achieve the necessary specifications for the generator to run adequately using propane. The product design incorporates numerous qualities suitable for both military and commercial use, such as its lightweight design, its strength and durability by using aircraft aluminum, its controls that allows the user to monitor pressure and flow-rates, and the ability to allow the user to make adjustments depending on altitude and temperature. Most importantly, the modification kit is easy to use and can be assembled in only a few minutes.

2.1) Industry Description & Outlook

A few industries were taken into consideration when attempting to understand the viability of small engine and gas-powered equipment market. It is important to differentiate products that have already been internally converted to propane with standard gasoline powered products, and to confirm which products would complement the Universal Propane Adapter Kit™. Though some of the industries analyzed via IBISWorld did not fall into these categories, they were still examined in order to determine any correlation to the technology. To evaluate as many industries as possible to make any connection with products otherwise capable of using the technology would expand the overall market value and thus will bring further value to INI Power and its IP technology. IBISWorld did not adequately represent generators and small engines in its own industry segments, therefore additional resources will be used to determine the market size, growth and trends.

First and foremost, the more relevant industry to consider is the Electrical Equipment Manufacturing in the US NAICS 33531, which covers most small engines and generators. These items have a wide range of uses and can be applied to numerous industry and market segments, thus giving INI Power Systems many more options to use when deciding to enter the market. The most prominent outdoor cooking industry examined through IBISWorld and other

sources would be BBQ & Grill Manufacturing in the US. This industry shows the growth of patent related products from the assembly line and would be less likely to distort figures through retail sales. In addition, BBQ & Outdoor Cooking Stores in the US brings figures in from the retail level, however it leaves out online revenues, which is a relatively large market in present time.

2.1.1) Electrical Equipment Manufacturing in the US - NAICS 33531

This industry centers on manufacturing electric motors, power generators, and motor generators, and is the primary industry in focus for this analysis. These products are not only the most practicable in terms of usability, but they can be applied to the INI propane adapter technology for a wide range of reasons, including further developments in technology and a variety of marketing purposes. These products consume 26.2% of total revenue, or over a quarter of over \$40 billion in 2018. This industry also includes several irrelevant products, including switchgear and switchboard apparatus', relays, transformers, and industrial controls. These items comprise of the majority of this market; therefore, trends need to be further analyzed in order to determine where true growth exists. It is important to note that this industry does not take into consideration internal combustion engine starting motors, which can be found under NAICS number 33632. A few key external drivers for the industry include the value of private nonresidential construction, demand from building, developing and general contracting, the industrial production index, and the trade-weighted index.

Some brief facts regarding this market will help understand its development and potential for any firm or company involved. This \$40.5 billion industry is controlled by roughly 1,836 business across the United States, with 3 of those business dominating the rest. General Electric Company has nearly 13.7% of the industry revenue, while the other two players include Eaton Corporation PLC with 8.4% and Schneider Electric SE with 7.6%. The industry has been somewhat stationary over the last 5 years for a variety of different reasons, however the most prominent factor for lack of growth is the rise in international competition. Firms from overseas have started to dominate the manufacturing processes for these products, as well as having much lower labor costs and less regulation. Consumers of these industry products, such as the Municipal Building Construction NAICS 23622 and the Engine Turbine Manufacturing NAICS 33361, both have seen substantial growth over the past 5 years and have historically had a direct connection to the growth of the Electrical Equipment Manufacturing. Therefore, these trends outline the detrimental effects of import penetration on domestic manufacturers of respective products in this market. Note that some US-based operators have increasingly moved production to overseas plants to maintain profitability while offering more-competitive prices (Miller, 2018). These topics will be discussed later in the analysis.

2.1.2) Engine & Turbine Manufacturing in the US - NAICS 33361a

This industry incorporates numerous engine types and equipment, including turbines and equipment used for power transmission, generators, diesel engines for highway vehicles and

heavy-duty equipment, as well as parts and accessories for these products. According to IBISWorld, the industry is sitting at over \$48 billion in total annual revenues with a 1.4% annual growth rate from 2018 to 2023. Out of 839 businesses, only 3 dominant players exist in the market; the General Electric Company with 32.6%, Cummins Inc. with 19.8% and Caterpillar Inc. with 17.6%. The products and services segmentation is broken down into 5 categories, with the largest being turbines and turbine generators sets with 32.5%.

Furthermore, some important key external drivers include private investment in industrial equipment and machinery, demand from truck transportation, electric power consumption, price of steel, and the trade-weighted index. The industry had a sharp decline in 2015 and 2016 due to a drop-in oil price. "As oil prices fell to historic lows, so did incentives to adopt fuel-efficient engines and power generation systems" (Masters, 2018). In addition, competition from foreign manufacturers has increased and thus domestic producers have sacrificed short term development as a result. Forecasts however suggest that from 2018 to 2023, demand for engines and generators made in the United States will increase and therefore stretch annual revenue and future growth.

2.1.3) Hiking & Outdoor Equipment Stores - NAICS OD4378

This industry is a key indicator of past and future market trends in multiple potential avenues related to the Universal Propane Adapter Kit™. It incorporates store retailers that focus on "primarily hiking and outdoor sports equipment, with a specific focus on camping and hiking supplies" (Alvarez, 2018). The industry is broken up into 4 different segments: apparel with 45%, equipment and gear with 30%, footwear with 20% and 5% in the "other" category. The most significant of these in relation to the INI technology is equipment and gear, which comprises of cookware, as well as some non-related products such as sleeping bags, bicycles, lanterns, backpacks, radios, etc.

With \$4.4 billion in gross revenue in 2018, this industry is showing significant gains not only in the current year, but in annual growth over the next 5 years. IBISWorld anticipates an annualized growth rate of 1.3% year over year, with expectations reaching \$4.7 billion in 2023. The competition in the industry could cause some businesses to flatline over the next 5 years, with many consumers going to department stores like Target and Walmart for their outdoor equipment needs. Although this industry can help us paint a more precise picture, it should not be prioritized to determine the eligibility of the propane adapter technology in the market.

2.1.4) BBQ & Outdoor Cooking Stores in the US - NAICS OD4271

This industry covers barbecue grill and accessory revenues in retailers such as The Home Depot Inc., Walmart Inc., Costco Wholesale Corp., and Lowe's Companies Inc. Product segments in focus include gas grills, charcoal grills, electric grills, and BBQ tools and accessories, and additionally are broken down in market segmentation by consumer age. Gas

grills retain the majority of the market with 43.6% of industry revenues in 2018, which presents a large potential for revenue from the Universal Propane Adapter Kit™.

The industry has \$6.6 billion in revenue in 2018 and showing signs of increased revenue over the next 5 years. Home Depot held the largest market share of 22.6%, with Walmart coming in 2nd at 19.7%, and Costco with 13.6% and Lowe's with 11.8%. The industry also represents over 14,000 other businesses that hold over 30% of industry revenues, however are losing to the big retailers. The 4 main superstores are competitively retaining market share each year by being able to offer lower prices and numerous other products that complement the needs of the consumer, such as grocery items or other BBQ related products. As the industry continues to grow and incomes continue to rise, the industry will continue to grow at a solid rate over the next 5 years. Expectations from IBISWorld are 1.9% annual growth from 2017-2022, with gross revenue reaching \$7.2 billion in 2022 (Hyland, 2018). The revenue forecasts will continue to increase as the baby boomer population matures and continues spending more money on outdoor cooking.

2.1.5) Barbecue & Grill Manufacturing in the US - NAICS OD4257

The Barbecue & Grill Manufacturing industry comprises of various bbq and cooking equipment, including gas and solid fuel barbecues, grills, braziers, and other grilling parts and accessories. This industry is similar to BBQ & Outdoor Cooking Stores however focuses on the manufacturing rather than the retail revenues for bbq and grill products. The industry has one major player, Weber-Stephen Products, that holds 58.7% of market share and is headquartered in the United States, although has distribution channels in over 30 countries around the world. Their brand names include Ducane, Smokey Joe, Genesis, Weber Q, Spirit, and Summit. In recent years, gross revenues in both domestic and international markets have skyrocketed and can be partly explained through their reputation in the market and from offering quality products at a reasonable price. Market trends have suggested that users are looking for higher quality and more expensive grills, therefore supporting the products offered by Weber-Stephen Products. Other factors include a rise in per capita disposable income and growth of the residential construction market.

In 2018, revenue from this industry reached \$1.2 billion with profits of approximately \$94.6 million. Over the last 5 years, growth rates reached an astonishing 7% year over year, however projections from 2018-2023 are expected to be annualized at 1.4%, reaching \$1.3 billion in 2023. Product segmentation is determined through 3 different categories; gas grills with 57.7% of the market, charcoal grills with 40.1%, and electric grills with 2.2%. This industry and its related market segments have a direct relationship to the INI propane adapter technology and can give good insight into making a recommendation to the company.

3.1) Market Analysis

The INI Propane Adapter technology can be applied to numerous products and applications that target various different consumer bases both domestically and around the globe. However, it is important to understand the future viability of the adapter in the marketplace in order to determine if it is worth pursuing. This can be decided through due diligence using a market analysis on products that can utilize the INI adapter technology. Though most of the items mentioned from the markets above are offered in propane models, many can agree that an add-on or adapter kit would allow current owners of gasoline models to upgrade to a cleaner, more efficient solvent. It would also provide users with a backup alternative and gives additional options during emergencies or unexpected events. Not only can propane allow for longer run times using fewer gallons than gasoline, it is also more readily available for transportation and can complement other equipment used by outdoor enthusiasts.

During the market analysis, a variety of different key indicators will paint an accurate picture of the current state of the market and if there holds any potential for profits. First, the target market will be explored to decide who the company should focus marketing the propane adapter towards. Next, user characteristics will help give INI a competitive edge in a variety of different aspects, including marketing, brand development, packaging options and accessories. The market segmentation will help compartmentalize the industry into a more manageable size and will allow INI to decide which segment to pursue first based on trends, revenues, forecasts, and a wide range of other indicators. Lastly the market size and growth will be determined to find out if there is room for larger revenues in the future, and past figures will be compared to present and future financials. Not only does the best strategy involve exploiting the market to gain a greater share, but it also needs to incorporate the development of a superior product over the competition.

3.1.1) Target Market

Having a concentrated target market is essential in providing quick success and growth to a new company, brand or product. Sometimes projections and forecasts attempt to generalize their target market in hopes of gaining a larger market share down the road, however this is a dangerous and risky move. The majority of firms try to refine their target audience as best as possible and attempt to penetrate more than one market. For this project, the target market of the items and products compatible with the INI propane adapter technology will be examined to determine the most effective audience to which profitability would be inevitable.

The two most relevant industries that apply to the Universal Propane Adapter Kit™ are Electrical Equipment Manufacturing and Engine & Turbine Manufacturing, respectively. These incorporate small engines, generators, and other internal combustion engines that can be used together with the INI technology. They also give insight into other aspects of the industry that can be important to the company, such as consumer demand and trends, and forecasts of the future growth for industrial equipment and machinery. Without this important information and research, it would be nearly impossible to decide if this is a market to pursue.

When looking at products from these 2 industries, one can't help but think that the target market in this sector could undoubtedly be males ages 25 and up. The tough and rugged persona of the stereotypical mechanic who spends most of his time working on his car or outdoors spending time with family and friends. One that has a large and fully stocked tool box in which a Universal Propane Adapter Kit™ would fit perfectly and invites his friends over to work on each other's cars or motorcycles. Moreover, technicians and engineers would also benefit from this adapter under a variety of different situations and circumstances. The propane adapter could be used as a backup for power at home or in the office and can be easily stored in the garage next to the toolbox. Many males could perceive this product as lifesaving in case of an emergency and would spend money on it to be prepared. In addition, according to Simply Analytics roughly 107 million Americans are males 25 years old or over, or roughly 32.78% of the population (SimplyAnalytics, 2018). This give INI Power an exceptionally large target market for these industries, although they are distinguished thoroughly as to promote revenues and profit.

When looking at portable gas grills and camp stoves, the first thing that comes to mind is the fact that these products are generally used outside during camping trips or around outdoor activities. These grills might also be used at little league games or during holiday picnics at local parks or beaches, which leads to the next few key indicators of the target market. The similarities in geographic location and settings suggest that these products are used in a family environment or during a relaxing day off. Portable gas grills and camp stoves are generally leisure items that are not necessary for the majority of people on a day-to-day basis. However, that does not mean that these products are not very popular and have a ton of demand, but might be more likely persuaded by domestic economic growth and job security than by socioeconomic status or gender.

Thus, either males or females would be equally targeted as the ideal user of these products, and marketing campaigns such as TV commercials or magazine ads could use either a mom or dad approach. Having both parents pictured would further express that it is an essential item for any adult looking to cook outdoors. Each type of person unfortunately brings a set of stereotypes, which would be good to utilize as a marketing tool; the assumption that if a woman is using the product than the product must be easy to use, or that if a man is using the grill than the grill must make the meat taste delicious. These could both be used to a product or brand's advantage.

In order to understand where the Universal Propane Adapter Kit™ would be positioned most aggressively in terms of marketing for a target audience, it was essential to first look at the gas grills and stoves as a whole before digging deeper and refining the search. The initial findings suggest that the family man or woman would fit perfectly into this role because not only do outdoor activities such as camping and hiking fit extremely well with the active kid lifestyle, but it also supports the idea that these products have a wide range of uses and are considered safe and user friendly. With the add-on propane adapter component however, this slims the audience down slightly and pinpoints its uses in greater detail.

The modification kit could work in almost every scenario that would otherwise fit into the general target market, however many of the newer portable grills sold are now available in a propane option straight from the factory. This market would be less likely to convert their older gasoline powered grills into propane. They might be more inclined to purchase a brand-new portable propane grill or propane camp stove. The experienced camper, hiker or outdoorsman on the other hand might use the adapter for specialized trips, fishing expeditions, or a variety of different adventures and excursions.

3.1.2) User Characteristics

The user characteristics associated with portable gas grills and camping stoves are almost identical to each other in the sense that these products complement one another and are used in similar settings. Both products would require a person who enjoys spending extended periods of time outdoors and who also enjoys cooking at the same time. In addition, small engines and generators have numerous uses and can be applied to many scenarios. Most of these include camping, hiking or other outdoor activities similar to the setting of the grills and camping stoves. For these reasons the most important user characteristics observed were age, physical abilities, culture, and geographic location.

Age was an important characteristic because not only does IBISWorld identify this in their market segmentation of all industries, but it also allows the manufacturer to tailor the product so that it is appealing to the target market. The company can change the color, shape, size or other features of the product to bring a competitive advantage compared to similar items. For example, if younger people are the primary consumer, than maybe using vibrant and bright colors might increase sales of that particular item. In addition, age is a good measurement of disposable income; older and more mature people often have higher paying careers while younger people tend to have lower paying jobs. In the BBQ & Outdoor Cooking Stores for example, major market segmentation could be broken down into 4 primary groups: consumers under the age of 25 with 5.8% of the market, consumers aged 25 to 44 with 32.6%, consumers aged 45 to 64 with 41.7%, and consumers 65 and over with 21.4%. Since the market has a total valuation of \$6.9 billion, consumers in the age 45 to 64 segment comprise of nearly \$2.9 billion of the total market. Since gas grills comprise of 47.5% of that figure, the total gas grill market among consumers age 45 to 64 is roughly \$1.4 billion in annual revenue. Since all compatible products are slightly similar and have Therefore, in regard to age as a characteristic of the users who could potentially benefit from the propane adapter technology, people 45 and over should be considered as the target market

The geographical location of the user is extremely important in understanding the characteristics of the consumers using these products. The United States is gigantic and has similar weather to almost every known climate around the world. Some states have snow and hail such as Colorado, while other regions such as the majority of Southern California will never see extreme weather. In addition, large cities and urban areas are focused on industrialization and often are not located near any forests, lakes or camping grounds. Many beaches have stopped allowing

the use of portable grills, and with the recent fires in California, people can suspect new regulations will soon be in place to limit fires and flames being used in or around large natural landscapes. However, regions in the Midwest and on the east coast might have more opportunities for campers and hikers to get out and partake in outdoor activities. Places that get all 4 seasons of weather will give people the opportunity to go outdoors more often and when the temperature suits them well. Cold months that have snow and heavy rain can have the potential to bring out diehard outdoorsmen who look for extreme experiences. Even states such as Oregon and Colorado have many places particularly famous for camping or rock climbing, and it is these states that INI should put in their effort when considering where and when to roll out the Universal Propane Adapter Kit™.

Physical abilities such as fitness and bodybuilding might compliment the outdoor recreational market and have a correlation between both lifestyle choices. To be a veteran hiker or camper an individual should be in good physical shape in order to maintain strength and stamina. If not, then these activities can be very dangerous and can often lead to injury or accidents. Many of the small engines, generators and various internal combustion engines that can benefit from the propane adapter technology are quite heavy and require frequent users to have upper body strength to operate these regularly. This doesn't mean that the only people capable of using these products are bodybuilders or heavyweight boxers, but it should be observed as similar characteristics that can help in multiple aspects, including product development or marketing efforts. This means that the company should take into consideration these elements of their consumer market when developing their product, accessories, and even packaging.

Culture is also a key component to help understand the user characteristics of these products. The United States houses hundreds of different cultures from all over the world, and many of these cultures are not accustomed to hiking or camping and thus would be poor representations of the market or user demographics. Many places in the Middle East and Africa do not perceive these activities as recreational and therefore would not be customers of the products in which the INI propane technology could be applied. However, North Americans, Europeans, Australians, and other known outdoorsmen could have major benefits from the technology. These cultures are traditionally known to spend more time outdoors and enjoy spending time in natural settings. Geographical locations relating to the culture could have something to do with this; in extreme parts of the world it is not as practical to spend a long time outside, however in places with many trees, mountain and scenery, it might hold a better experience.

3.1.3) Market Segmentation

The industry is divided into multiple different groups based on either product and service segmentation or the overall market segmentation of their consumers. Each market is observed via their NAICS code and is based on different variables to determine the segmentation, such as consumer earnings or age of the consumer. In addition, domestic vs. international markets plays a large role in understanding the capabilities of the firm and whether or not it is possible to expand in foreign territory. This can provide not only an increase in revenue but will also solidify

the company or brand in the marketplace. It is important to analyze each of these segments to decide which group would be the most achievable option for INI Power Systems.

Generators and small engine products have quite a unique market segmentation that can be observed among its numerous industries. Engine & Turbine Manufacturing has 4 major market segmentations that exist to differentiate the growth within the industry as a whole. The entire \$48.1 billion revenue in 2018 is broken down through IBISWorld; 47.2% exports, 20.7% utilities and electric power producers, 17.6% other, and 14.5% trucking and freight industries.

International trade is an enormous factor when considering the growth and expansion of the industry in its entirety, and therefore exports are at an all-time high. Domestic manufacturing has decreased over the last 5 years, however “exports still remain the industry’s largest market due to the complexity and variety of industry products manufactured by industry operators” (Masters, 2018). This market segmentation includes exports of key industry products, from ceramic turbine components from GE in North Carolina to industrial generators manufactured by Generac in Wisconsin. Since globalization is on the rise and international trade is at its greatest potential, it would be wise for any firm to benefit from overseas revenue and expansion.

In addition to the industry mentioned above, the Electrical Equipment Manufacturing is similar in how market segmentation is separated, and prospective earnings observed. The \$40.5 billion in annual revenue is broken down into 5 groups; exports with 38%, construction with 27.7%, manufacturers with 15.1%, utilities with 10.5% and businesses with 8.7%. The fact that exports is leading both market segmentations is an indicator that not only do these markets provide products that the international community has increasing demand over, but the technological trends by manufacturing firms in the United States cannot be duplicated in overseas markets such as China or India. These items are technologically advanced and required extensive R&D; “although countries like Mexico and China benefit from lower input costs due to lower wages, the United States remains competitive by manufacturing highly sophisticated technology for electrical equipment as well as heavy products that would increase shipping costs, such as motors, generators, and transformers” (Miller, 2018). Thus, it is important to leverage this information and provide access to the international market to increase brand identity, growth and revenue. Since the demand is already present, why not use that to the advantage of the firm.

As mentioned in Section 2, the Barbecue & Grill Manufacturing in the US market via IBISWorld breaks down the products and services segmentation into 3 groups; gas grills, charcoal grills, and electric grills. Of these groups, it is obvious that the traditional gas grills comprise of the largest segment of the market, making up almost 60% of the entire \$1.2 billion gross revenue anticipated in 2018. These gas grills are made up of multiple different product variations, such as size, power, and fuel type. The specific model is used to determine whether natural gas, propane, or other heating elements are used to operate the grill. Of these fuels, propane is typically used and is powered through a tank located underneath the cooking surface (Rivera, 2018). Not only does propane and other natural gas grills have a lower cost per use as compared to charcoal barbecues, but they also increase the flavor in food and have higher heat

temperatures as compared to newer electric grills. Therefore, there is a large demand for gas grills and accessories over any other grill type for a variety of understandable reasons.

The major market segmentation is divided into categories based on outlets in which manufacturer sales are derived. The 4 groups within this market are retailers with 63.1%, wholesalers with 24%, exports with 10.9% and other with 2%. An important fact to note is that the majority of manufacturers in the US have aligned themselves with various retailers to increase sales and access date while decreasing lead and wait times. Many manufacturers and big box stores have dropped the old distribution and warehousing model and have acquired a new system which brings the manufacturer straight to the retailers. This works best and is becoming more popular because not only does the manufacturer gain a wide array of benefits, but the retailer gets access to the lowest prices which grants them a large competitive advantage when compared to other retailers. Wholesalers and other markets comprise of large buyers and businesses who purchase directly from the manufacturer, such as universities and hotels. Though this should not be overlooked and can lead to a large increase in revenue, it should not be in focus and would remain as an addition to the other segments.

The BBQ & Outdoor Cooking Stores is broken down in the products and services segmentation using the following categories: gas grills with 47.5% of the market, charcoal grills with 32.7%, other outdoor cooking tools and accessories with 10.9%, electric grills with 6.7% and wood pellet grills with 2.2%. According to IBISWorld, "gas grills, using either liquid petroleum or natural gas for fuel, are the most popular type of grill in the United States" (Hyland, 2018). These grills have been proven to perform the best and most efficient while creating a deliciously superior end product. Not only do these products retain 47.5%, or roughly \$3.3 billion, of the \$6.9 billions of total annual revenue generated from these industries, but it also has a strong reputation in the marketplace and has seen stable growth in both previous financials and in future forecasts. As stated in Section 3.1.2, the major market segmentation in this industry is represented by age groups and is dominated by consumers ages 45 to 64. This group is the largest market for industry goods and is comprised of 37.1% of the population and roughly 41.7% of industry revenue. These consumers tend to be parents with steady income and have the desire to prepare home cooked meals more frequently than the other age groups. Over the past 5 years, this segment's share of revenue has increased, as more consumers entered into this age group (Hyland, 2018).

3.1.4) Market Size and Growth Rate

The market size and growth rate is extremely important in determining if the Universal Propane Adapter Kit™ should be rolled out into the marketplace, and if this direction would be profitable for the company in the foreseeable future. The market size has been presented in multiple sections above, and with figures in the billions, an opinion has already been made in favor of pursuing this venture. However, it is crucial that past and future figures be examined in detail to decide if the industry growth rates have a positive correlation with the growth rates of the entire market. It is important to note that exports and an increase in international demand has caused

some of the industries to lose revenue, while other have taken advantage of this trend and have capitalized from it. These patterns have the ability to drive consumer demand to products and services in these industries, though it is not yet determined if these variables will survive over a long period of time or if they are merely temporary.

Engine & Turbine Manufacturing in the US reached \$48.1 billion in total revenue in 2018, up from \$46.9 billion in 2017. Net profits reach \$2 billion this year, or roughly 3.8% of total gross sales. From 2013 to 2018 annual growth rates were at -1.7%, although future forecasts suggest that from 2018 to 2023 the annual growth rate will be nearly 1.4% year over year. When compared to figures over the last 10 years, growth from this industry has been agitated and unpredictable at best. In 2009, annual revenue reached \$42.2 billion and had skyrocketed to \$53 billion by 2015. From 2015 to 2018 gross revenue decreased by an astonishing \$5 billion, or almost 10% of total value. More specifically, 2016 was the worst year for the industry and experienced losses of -13.8% of overall revenue. In 2023, annual revenue is expected to be \$51.6 billion with year over year gains of roughly 0.9% to 1.4%. 2010 to 2011 saw the most significant growth; the market increased to \$59.4 billion from \$43.7 billion, which represents nearly \$16 billion in additional revenue in just one year. Lastly, exports from this industry are at \$22.7 billion, up from \$21.9 billion the previous year.

In addition, Electrical Equipment Manufacturing in the US experienced similar growth rates and periods of declining revenue, however nothing as drastic as Engine & Turbine Manufacturing. In 2018, total revenue is expected to reach \$40.5 billion with about \$2.5 billion in profits. From 2013 to 2018 annual growth rates have been -0.8%, which coincides with the industry mentioned above, as well as the growth rate of the entire market. The industry was forced to contend with sustained international competition, and in doing so experienced a large decline in revenue and inconsiderable growth gains (Miller, 2018). Exports of the industry comprised of \$15.4 billion, which presents a staggering growth pattern from the previous year, which was at \$13.4 billion. In 2009, the industry had total annual revenues of more than \$41.5 billion, \$1 billion more than current revenue. In 2016, revenue dropped to an astounding \$37.7 billion, or nearly -6% of total sales from the previous year. By 2023, the industry is expected to reach \$43.3 billion in gross revenue, and from 2018 to 2023 is expected to increase at 1.4% year over year.

Barbecue & Grill Manufacturing in the US has experienced a 7% annual growth rate year over year from 2013 to 2018, with industry revenue reaching \$1.2 billion in 2018. Net profits from this figure were calculated at \$94.6 million, or roughly 12.7% of revenue. 22 businesses dominate this industry, although as mentioned in section 2, Weber-Stephen Products LLC controls 58.7% of the market. The 2009 market size was \$749.4 million. Every year from then has seen an increase in annual revenue, except 2012 which experienced a -2.8% loss. In relation to the current market size of \$1.212.4 billion in 2018, this represents a change in market size of \$463 million over a 10-year period, or a 61.8% growth rate from 2009-2018. This is extremely significant due to the fact that the United States, as well as the global economy, had record low growth rates in 2009 and 2010.

However, upcoming forecasts represent a deep decline in annual growth rates, most likely due to a decline in consumer confidence, the recent introduction of new taxes on foreign imports, and the global economic situation as a result of tumbling oil prices. In 2018, real GDP is projected to grow by 3.1%, however in 2019 GDP slows to 2.4% as growth in business investment and government purchases slows (Congressional Budget Office, 2018). Nonetheless, there are significant profits to be made within the industry over the next 5 years. Industry experts suggest that there will be an annual growth rate of 1.4% from 2018 to 2023, therefore expressing a 5.6% drop in growth from the previous decade. Forecasts suggest a market value of \$1.298 billion in 2023, or a growth rate of 7.1% from 2018 to 2023.

BBQ & Outdoor Cooking Stores has a similar growth rate with a much larger market size than the previous industry analyzed. In 2018, industry revenue reached \$6.9 billion with net profits of nearly \$388 million, or roughly 5.6% of gross sales. The annual growth rate from 2013 to 2018 was 2.8% year over year. The industry is made up of over 14,000 businesses, however only 4 companies make up over 50% of total revenues. In 2009, total revenues for this industry were at \$6.269 billion, thus representing an increase of \$657 million over the last 10 years, or roughly a 10.4% growth rate. However, it is important to note that this industry is comprised of a much larger group of retailers, ranging from large department store chains to supercenters that have recently grown into the industry leaders for sales revenue. Companies such as The Home Depot and Walmart have seen a skyrocket in sales coming from their BBQ and outdoor cooking products, and market trends have increasingly suggested that the specialty stores have been hit hard due to market share shifting to large retailers.

Future forecasts via IBISWorld have suggested a large increase in total industry revenues over the next 5 years. It is predicted that in 2023, revenues would reach \$7.524 billion, which represents a \$598 million increase from 2018. Future growth rates are therefore determined to be around 8.6% over the next 5 years, which does not take into account inflation or any recent economic or political developments. The present and future market growth suggests that not only is this industry stable enough to provide a sustainable environment for the INI adapter technology to succeed, but it has both low saturation and high demand. These are excellent conditions when considering an entrance into the marketplace.

3.1.5) Market Trends

The market trend analysis will determine if changes in the industries in question will be in favor of the INI adapter technology or if it will go against pursuing this venture. There are numerous variables that give insight into the executive decisions required to give direction to a company, brand or product. In this particular industry, per capita disposable income, an increase in consumer confidence, and an increase in the number of new households all have a strong correlation with growth within the markets tied to the INI adapter technology. As all 3 of these key indicators continue to rise, so does the opportunity for INI Power Systems propane adapter product to succeed in the market.

The US economy and its overall growth rate plays a large role in determining the strategies of firms within a specific industry, and especially when these firms are producing items that are not necessities for living. According to the Congressional Budget Office, the United States will see strong economic growth through 2018 and into early 2019, which is due partly from increases in government spending, reduction in taxes, and faster growth in private investments (Congressional Budget Office, 2018). A source previously mentioned is predicting that the latter half of 2019 will see a decline in economic growth in the United States, which can have significant effects on the industries of potential interest to INI Power. According to the Bureau of Labor Statistics however, the unemployment rate has fell to the lowest since 1969, which was 3.7% in October 2018 (BLS, 2018). In addition, wages went up about 2.8% from last year. These are signs that the US economy is doing extremely well and that, even if there are adjustments in the economy in 2019, there will not be a full-blown recession.

Disposable income has been regarded as not only a significant indicator of the global and domestic economy, but an indicator of growth rates from within certain industries that rely largely on disposable income spending. "Personal income determines an individual's ability to consume goods and services, i.e. personal consumption expenditure, and industries producing consumer goods and services contribute heavily to United States gross domestic product" (Statista, 2018). When people can afford to spend money on leisure items, such as outdoor equipment and accessories, these industries tend to see a rise in sales and revenue. According to data provided by OECD, in 2016 the United States experienced a 1.5% increase in the annual growth rate of household disposable income (OECD Data, 2018). This is relatively significant in terms of domestic growth, however on a global level this figure falls short. Many European economies are sitting between 2-4%, while Poland and Hungary have over a 5% increase in disposable income. These figures represent the net annual growth rate of household disposable income in 2016, so these amounts will change greatly if looking at gross adjusted rates. Nevertheless, disposable income is on the rise and future forecasts suggest that any hiccups will be short and not detrimental to long term growth.

The consumer confidence index (CCI) measures optimism in the domestic economy by analyzing the savings and spending of consumers. It is a key indicator of economic growth and trends and can influence interest rates set by the Federal Reserve as well as stock market prices. According to Market Watch, consumer confidence surged in September 2018 to an 18-year high, while simultaneously almost reaching unprecedented figures driven by the US economy and growth (Bartash, 2018). The new CCI in September has risen to approximately 138.4 from 134.7 in August, which suggests strong support of new US economic developments and strategies under the Trump Administration. The highest recorded CCI level was back in May 2000 when reports estimated a figure of 144.7. Much of these gains back in 2000 have been explained through the internet boom, as well as numerous tech and energy companies going public. However later in the year the bubble popped and the economy took a large hit; "nearly a trillion dollars' worth of stock value had completely evaporated" (Geier, 2018). Though this didn't last too long, it was obviously unsustainable and subsequently caused many firms to liquidate and file for bankruptcy. In comparison, 2018 has not had any insanelly large outliers

similar to the internet boom, therefore many analysts are not expecting a large decline or loss of value in the economy in 2019.

The number of new households in the United States has a strong correlation with the number of new families in the country. Since the target market for products associated with the INI propane adapter technology are families and parent in specific, this will be a great indicator of market size and growth for potential revenues. In 2008, the number of households in the United States was approximately 116.78 million. By 2017, this number had increase to about 126.22 million, representing an increase of about 9.44 million new households from 2008 to 2017. This change constitutes an 8% increase overall, which supports the idea that there is enough household growth to fuel industries associated with household and family products.

4.1) Competitive Analysis

The competitive analysis outlines the current state of firms and companies that occupy the markets of interest to INI Power Systems. It is important to know if there is any competition in the market, and if so then to understand their strategy and long terms goals so the company can beat them and take market share. If these companies are profitable then this would be a positive reassurance and would endorse the manufacturing and distribution of the adapter kit. However, if the companies are not doing well and shows signs of financial struggle, this might mean that costs in the market are too high or that over-saturation is present. Therefore, assumptions can be made depending on the situations of these firms and their economic standing, and these situations should be analyzed over a period of time to remove any bias it might have toward consumer trends or adjustments in the national economy. The goal is to find gaps in the competitions strategy and to use that to INI Power Systems advantage.

4.1.1) Propane Carbs: Alternate Fuels Technologies, Inc.

Propane Carbs is a company that offers small engine natural gas and propane conversion kits for a number of products made by popular industry leading manufacturers, including Briggs & Stratton, Black Max, Craftsman Generators, Champion, Coleman Powermate, Cushman, etc. Their flagship product, the Impco Beam Garretson Tri Fuel Natural Gas & Propane Conversion Kit, is capable of High-Pressure Propane, Low Pressure Propane and Natural Gas, and can be used on generators, welders, concrete saws and more. The company claims that the kit is easy to install and does not require drilling of the carburetor, and their website has many resources to help customers with installing their conversion kits, including multiple YouTube videos. Propane Carbs does not openly advertise the price on their website, however after calling it was confirmed that this product has an MSRP of around \$187 plus shipping. It is currently on sale for the holidays and is priced at \$169.

4.1.2) Century Fuel Products: Propane and Natural Gas Systems

Century Fuel Products is an online retail store that offers numerous parts and accessories for small engines, generators and other various propane and natural gas systems. They offer everything from carburetors to converters, and even fuel injectors, just to name a few. The product of importance however is the Generac GP7500E Natural Gas or Low-Pressure Propane Conversion (Dual Fuel) Kit. This adapter will mix propane or natural gas into the air stream above the gasoline carburetor, however it will leave the gas carburetor virtually untouched (Century Fuel, 2018). This is similar to the Propane Carbs Impco Beam Garretson Conversion Kit as well as the INI Power Systems Universal Propane Adapter Kit™, although there are a few major differences that divides them into entirely separate categories. The Generac GP7500E cannot use high pressure propane that comes from a tank, unlike the other two conversion kits. Also, since the air stream is going above the carburetor and therefore it is not being used, this is categorized as an adaptation rather than conversion kit. With that said, this product can be purchased from the website for \$169 plus shipping. Tri-fuel conversion kits are available for a select few generator models, such as the AC Delco AC-G0002 Tri-Fuel Kit, and they sell for around \$199.

4.1.3) US Carburetion: Propane-Generators

US Carburetion, Inc. is a company based in Summersville, West Virginia that produces kits related to propane, gasoline, and natural gas for generators and small engines. They offer multiple different configurations for customer needs, such as high-pressure propane, bi-fuel propane and gasoline, tri-fuel natural gas, propane, and gasoline and a variety of other kits and accessories. Another item the company makes is the remote start kit, which allows generators to be started by remote, and either by wire or wireless. Since the Universal Propane Adapter Kit™ is universal and can be applied to a variety of different sized units, the most comparable would be the Low-Pressure Bi-Fuel Kit Type 4, which is compatible with most engine brands including some V-Twins. Similar to the Generac GP7500E, this product is not a conversion but rather an adapter kit. The user has the option of powering the generator using both gasoline or propane and is not required to remove the adaptor for this to work. This unit is sold via their website and is priced aggressively at \$267 plus shipping. There is a 1-3-day lead time for all orders as they are made to order.

4.1.4) NashFuel: Propane Fuel Conversion Kits

Nash Fuel, Inc. is based in Nicholasville, Kentucky and supplies products similar to the other stores and manufacturers listed above. They offer conversion kits for various internal combustion engines, such as the Chevy 350 V8 Propane Kit. Nash Fuel specializes in propane adapter kits for different cars, trucks, and motorcycles. These conversion kits can be used with numerous brands and products, such as car, auto, truck, generator, off-road, forklift, boat and marine: GMC, Jeep, Ford, Onan, Impco, Chevy, Toyota, Suzuki, Edelbrock” (NashFuel, 2018). It appears however that the company purchases most of its products from Generac, who lists them as an authorized dealer. In addition, they have a relationship with Manchester Tank, a manufacturer of a variety of different sized propane cylinders.

What makes this company direct competition with INI Power Systems and the Universal Propane Adapter Kit™ are the multiple propane kits for generators that are offered via their online Ebay store. For example, the Low-Pressure Propane/Natural Gas Conversion for Honda GX340, GX360 and GX390 Carburetor are designs similar to the technologies mentioned above and produce similar results for the end user. As also stated by the other companies, no modification is required for most of these products and they are easy to assemble and use. The company also claims that it can build a conversion kit for nearly any engine, which is a strong selling point to many project builders or DIYers. The major drawback of this product is that it is only compatible with low pressure propane, similar to the Generac GP7500E and the Low-Pressure Bi-Fuel Kit Type 4 from the other companies. The generator conversion kits are available through Ebay and are priced between \$125 and \$200 with free shipping.

4.2.1) Comparison to Universal Propane Adapter Kit™

Many of the competitor products mentioned above seem to be viable alternatives to the Universal Propane Adapter Kit™, however when taking a closer look at the specifications they might be more different than originally realized. A few key indicators have stood out and provide insight into their effectiveness in the market. Keep in mind that an expert in engineering did not do this analysis, and therefore please excuse some technical jargon that might not have been stated properly. There are 3 primary reasons that make the competitive items inferior to the Universal Propane Adapter Kit™: they are configured to use low pressure propane, they are adapter kits rather than conversion kits, and their overall lower quality as compared to the INI propane technology.

The Impco Beam Garretson Tri Fuel Natural Gas & Propane Conversion Kit by Propane Carbs was the only comparison product that was able to handle high pressure propane in addition to the Universal Propane Adapter Kit™. Century Fuel Products creates a tri-fuel conversion kit as well; however, they are not available for all model generators and can be quite limited. The High-pressure systems deliver around ½ PSI up to about 30 PSI and are found in many portable stoves and grills that utilize propane. Most high-pressure systems use propane from 20lb propane tanks, hence conversion kits offering only low-pressure propane will not be able to utilize these tanks. Generally, the greater the gas pressure added to the product will result in greater heat delivery to the component, therefore providing an adequate environment for cooking appliances and heating units. The common practice for high pressure devices is to use “2 solenoid valves per burner and an electric ignition control module that lights pilot burner and turns off gas if pilot goes out to prevent explosion” (HomeBrew Talk, 2010).

In contrast, low pressure systems have 2 pressure standards, but most commonly use 11” water columns for propane. Some sources insist that a high-pressure regulator and high-pressure burners are needed to convert the unit to become compatible with high pressure propane, however it cannot be determined if the other comparison products can utilize these regulators. Thus, these items are not being compared apples to apples and their restrictions can be

observed as inferior to other products on the market. These other conversion or adapter kits are for specific uses while the Universal Propane Adapter Kit™ is, like its name suggests, universal. This gives INI Power a stronger position in the market.

For this comparison, we are going to assume that the Universal Propane Adapter Kit™ is a conversion kit and not an adapter, even though the title suggests otherwise. Similarly, to the topic above, the only comparison product that is deemed a conversion kit is the The Impco Beam Garretson Tri Fuel Natural Gas & Propane Conversion Kit by Propane Carbs; the rest of the products specifically mention that they are adapter kits and do not require any modifications to the gasoline carburetor. Century Fuel Products claims to have multiple, more expensive conversion kits; however, it is hard to verify via their website which ones would be a comparable alternative to the Universal Propane Adapter Kit™. Most of the products claiming to be conversion kits rather than adapters also claim to be for both high- and low-pressure propane systems. It seems that the only additional items provided that enables their kits to accept high pressure propane is a high-pressure regulator and 6-foot hose for use with a barbecue tank. Maybe this adapter can be applied to the other low-pressure systems to convert them to use both low- and high-pressure propane. Furthermore, most kits that can accommodate both pressures require drilling to the gasoline carburetor, while the others do not require any drilling at all. Some companies market this difference by saying that the customer can save money by purchasing the correct kit that fits their needs; the adapters are significantly less expensive than the conversion kits, which could be explained by the need for additional parts.

One of the primary set of characteristics identified with these kits is the need for them to be durable, long lasting, and of high quality. These conversion and adapter kits are being used on internal combustion engines and generators, portable cooking ovens and stoves, and other highly flammable and semi-explosive products, therefore the need for strong and durable materials is required for a safe experience. However, many of the competitor products do not satisfy the needs of their consumers by presenting a safe and secure attachment. Neither the external body nor the interior components give the user any sense of quality or professionalism. In comparison, the Universal Propane Adapter Kit™ is exactly the opposite. Within the first 30 seconds of browsing the INI Power Systems website a user can understand the vigorous attention to quality and usability, not to mention various other benefits. The sole fact that the company has contracts with the United States Department of Defense gives users the idea that this product undergoes numerous quality control checks and security measures to ensure its safety and accuracy when in use. With a 5-year lifespan and 2-year warranty, INI Power expresses their commitment to the quality and integrity of their products. These should be capitalized and marketed to promote being a superior product from the rest. Lastly, packaging should align itself with the identity of the product and should therefore reflect a defense or military culture. This would help differentiate the Universal Propane Adapter Kit™ from the comparison products, as well as provide value to the product, increasing its potential MSRP and ultimately the bottom line.

4.3.1) Direct/Indirect Competitors

The direct competitors to the Universal Propane Adapter Kit™ are no doubt the companies and products mentioned above. These firms have directly related products aimed to the same consumer target market and have the ability to take potential revenue from INI Power. In another aspect, various companies and brands have comprehensive internal R&D divisions and attempts at new innovations stemming from consumer feedback might replace these aftermarket conversion kits by the generator firms themselves. These indirect competitors might find alternative solutions or new technologies that can affect the growth of the kits. It is important to create a timeline that can represent accurate forecasts for both direct and indirect competitors and their longevity with the products they currently sell.

Direct competitors might not be the correct verbiage when comparing the Universal Propane Adapter Kit™ to the other competitive products. As stated previously, we are not comparing apples to apples; no other product on the market can exactly compare to the INI adapter. These brands however have the only other comparable items that have essentially the same purpose and are competing for the same prospective market. Therefore, it can be assumed that the average consumer would not be able to differ between the specifications of the INI adapter to some of the others on the market, and if they essentially provide what the consumer needs then the extra components would not matter to them. Especially when comparing prices, the Universal Propane Adapter Kit™ is sitting at \$1899 and therefore might scare away certain potential for revenue. A strategy for the company might be to create multiple models that vary in function and price, that way it can grab some of the novice users. They might be willing to spend more money on a quality item that will last a long time but would not want to spend money for functionalities that they would not use. No one wants to pay for something that they won't use.

Generally, indirect competitors do not sell the same or similar type products but manage to satisfy the same consumer needs, therefore they are relevant to potential earnings and overall future growth. In this case, indirect competitors are being defined as the internal developments and ambitions of generator and small engine companies such as Honda Inc. and Briggs & Stratton. It is nearly impossible to find information online regarding their current research and development progress. Many confidentiality protocols ensure that company innovations and growth are not released prematurely for fear of competition and/or scrutiny from consumers, and a wide range of other reasons. If Honda created a propane conversion kit for their generators, it can be assumed that the majority of users who own a Honda generator and are looking for a conversion kit would consider purchasing one directly from the manufacturer. This would not only ensure that it would fit and work properly on their engine, but it would also be easier and more convenient for the customer to make a one-stop-shop type of purchase. What would be even easier for the customer would be the idea that they could purchase a package that would not only include the generator but also a tri-fuel or propane adapter and the necessary accessories that would provide a positive experience to the user.

The Powerland PD3G10000E 10,000-Watt Tri-Fuel 16 HP Gas/Propane/Natural Gas-Powered Portable Generator with Electric Start is one primary example of indirect competitors and the

ability to have the conversion kit built into the generator from the factory. This particular product is sold conveniently on Amazon and retails for about a thousand dollars and is marketed as an emergency tool used when traditional power is not available. It weighs over 240 pounds and is made of heavy-duty plastic and steel materials, and currently holds a 3.3 out of 5-star rating by 41 customers. In many cases, a new user who is looking to purchase their first generator would likely consider one with built in flex-fuel capabilities, such as the Powerland PD3G10000E. Thus, for the everyday customer looking for a simple power solution, a triple fuel generator might be a better option than retrofitting a gasoline generator. However, there are a few advantages in purchasing the latter rather than a triple fuel generator, specifically in regard to the price. A consumer could easily purchase a gasoline generator for a few hundred dollars in addition to an adapter kit, and this would cut the cost in half as compared to spending a \$900-\$1,000 dollars on the Powerland PD3G10000E.

4.4.1) Barriers to Entry

Certain barriers to entry can make it quite difficult and sometimes nearly impossible to enter a highly competitive or lucrative market, especially in present times. With the mass globalization of new businesses, brands, and products, it can be strenuous for companies to position themselves as superior or preferred over the rest. Variables such as quality and efficiency can only stretch so far, and at the end of the day marketing campaigns and strategies play a big role in the way potential customers perceive the item or product. Certain factors that influence the barriers to entry while also supporting the inherent growth rates of the INI propane adapter are strong brand identity and customer loyalty, access to certain distribution and retail channels, and the start-up costs associated with bringing the INI technology to the household consumer market. In addition, barriers to entry vary among the different set of products mentioned in Section 2, therefore it is important to distinguish between them and to understand exactly how each is affected by the specific industries in question.

Brand identity and customer loyalty is important for any firm looking to expand and increase sales revenue among its various operations. It creates a substantial objective made by brands and companies to gain customer retention among their target market, for either one product or an entire family of products. For example, if a person is completely satisfied with their purchase of a Honda Civic vehicle, there could be a strong presumption that they might consider a Honda product when purchasing a new motorcycle, generator, or other small engine device. The consumer starts to value other products manufactured by the company and begins to have loyalty to that brand. In the situation presented in this case, the Universal Propane Adapter Kit™ would be endorsing brand loyalty to the entire INI Power Systems portfolio of products and would further help promote the sales of their various generators and other accessories. The other brands mentioned in the competitive analysis do not have a large presence on the consumer market, and therefore brand loyalty will not work against INI Power Systems and the Universal Propane Adapter Kit™. These companies do not have contracts with large retailers or brick and mortar shops, and the only way to purchase their products is via the company website. Their footprint in the industry is not strong or concrete, meaning that the average

consumer looking for a propane conversion or adapter kit is not going to immediately think of Nash Fuel, Inc. or US Carburetor, Inc. This evidence presents a competitive advantage that lays the foundation for INI Power to enter the market and focus on brand loyalty and consumer confidence among its target customers.

The access to certain distribution and retail channels plays an enormous role in the success and viability of any product on the market. Especially in terms of a competitor analysis, if the competition has large networks for distribution than it would be easy for them to get their product into the hands of potential customers. For example, if INI's competition was found in every retail chain across the country, it would create much higher barriers to entry and ultimately kill the idea that growth is inevitable for the Universal Propane Adapter Kit™. In comparison, if the competition has weak distribution networks, then INI would have an easier time getting their product to market and becoming successful. Since we have already determined that the demand for these products exists, distribution and in-store availability come next on the list. In this situation, these conversion and adapter kits are not readily sold in stores such as Home Depot or Walmart. Each competitive product is available via the company website, which has its pros and cons. Not only does offering the items online make them accessible, but it also gives convenience to their customers who live in remote locations around the country. However, only offering these products online will have a negative effect on the many consumers who prefer shopping in stores and appreciate the chance to hold and feel the product before purchasing. According to a Forbes magazine article, e-commerce represents only about 10% of all retail, meaning that these companies are missing out on an enormous amount of potential revenue (Dennis, 2018). Thus, if INI Power Systems can secure a lucrative distribution channel for the Universal Propane Adapter Kit™, it would give an upper hand in creating brand loyalty that otherwise does not exist in this niche market.

The costs associated with bringing the Universal Propane Adapter Kit™ to the household consumer market is quite significant when compared to targeting select companies or organizations via large and expensive contracts. Various international groups, governmental and non-governmental organizations, military branches and large, privately held firms require massive amounts of funding for new or upcoming enterprises. When these agencies find a product that is deemed necessary to pursue the project, there is a willingness to spend almost any amount of money on those necessary items. Of course, when multiple companies are fighting for the same contract, it starts to create a bidding war in hopes to bring down the price, although this is not always the case. If there are no other firms that can offer the type of product needed, then the manufacturer is free to set the price as they see fit. Especially in the case of the Universal Propane Adapter Kit™ and other products offered by INI Power Systems, since these items aren't found by multiple manufacturers, are relatively tailored to a specific situation, and are protected through various intellectual properties, spending almost two grand on an adapter would not be a big deal to a major organization such as the Department of Defense. However, in order to reach the household consumer market, this price would need to compete with other products offered to the general public. The necessary business decision would be to try and lower the MSRP to anywhere between \$250 and \$500. It is up to INI Power to determine the best way to accommodate this need for their target market. Whether that means creating an

alternate adapter kit that is lower quality or does not have as many features is up to the company. Another solution could be to sign a letter of intent outlining future purchase orders in larger quantities than previously ordered, which could result in a price drop from current manufacturers. The idea is that the higher quantity ordered, the lower the cost per unit. This would not only give INI a competitive advantage among other household consumer products similar to the Universal Propane Adapter Kit™, but it would provide the company with the ability to accommodate this market without jeopardizing their current and future customers under their current model.

5.1) Market Forecast and Projections

When analyzing the various industries listed in Section 2 and the information outlined in subsequent sections, it can be confirmed that there is vast opportunity for INI Power Systems to pursue these markets with the Universal Propane Adapter Kit™. The projections outlined below will verify the target market and market size while simultaneously providing figures and initial calculations based on the market research. These forecasts will not only give the company reassurance that the Universal Propane Adapter Kit™ has potential for profitability in the current market but will also demonstrate that there is viability for future growth and expansion.

The analysis below will take a look into two markets related to the domestic and global sales of generators. Both are highly lucrative and express significant growth over the next 5 years, and therefore should be pursued if the company is going to capitalize on as much potential revenue as possible. The global markets need to be closely observed in the following years, especially when generator sales are in extremely high demand around the world. The domestic market in contrast is losing sales to foreign exports, but more specifically to the household consumer market. For example, generators made in China and India, such as Honda, are cheaper than generators made in the USA, such as Briggs & Stratton. This is a result of lower production costs, labor costs, and taxes associated with imported goods. This competitive advantage allows these brands to stand out, particularly in a market that puts price in the top 3 features persuading their purchase.

5.1.2) Market Size Forecast

The global generator sales market is expected to grow from an estimated \$20.9 billion in 2018 to approximately \$27.2 billion by 2023, with a CAGR of 5.41% (Rohan, 2018). An increasing demand for reliable power when traditional grid power is interrupted is driving demand around the world. Rapid industrialization and newly planned infrastructure are causing enormous forecasted growth over the next 5 years. Developing countries such as India, Bangladesh, Taiwan, Algeria, and Nigeria are all highly sought-after markets for small engine and generator manufacturers. This is valuable to INI Power Systems if it plans to pursue the international household market, which is highly endorsed by the findings of this report.

When digging further, it is made known that the global portable generator market is much smaller than the generator market as a whole. This niche market has a value of \$4 billion in 2017, and is expected to reach \$6 billion by 2023, demonstrating a CAGR of 6.8% over 5 years (Wood, 2018). Similar to the overall market, demand for portable generators is increasing as industrialization and further expansion in the construction industry grows, especially in the Asia-Pacific region. The largest sector within the global market is residential, followed by commercial and industrial. As a result, INI should aggressively pursue the household consumer market.

The domestic numbers look quite different than the increasingly growing global sales and revenue forecasts, however a pattern can be observed and should be further analyzed in order to pinpoint exact figures. The US generator market was valued at \$4 billion in 2017 and is expected to expand to over 9% by 2024 (Delaware, 2018). Natural calamities such as weather-related disasters have increased the need for generators as emergency backup power solutions, and the demand is only forecasted to grow in the foreseeable future. According to the U.S. Department of Energy, the climate is continuing to change and therefore is creating more intense and frequent storms and flooding. In addition, the portable generator niche market has a value of \$1.2 billion and is expected to increase to well over \$1.5 billion by 2024 (Global Market Insights, 2018). In California, generator sales topped \$90 in 2017 and is expected to further rise at a higher rate than the domestic and global market, thus fueling growth to any firm active in the market.

5.1.3) Market Value & Potential Revenue

It is crucial to give a proper market size that is neither too enthusiastic nor too conservative. Given the \$4 billion valuation of the overall global market for portable generator sales provided in the above section, it can be assumed that the large majority of this figure is related to the sales of actual generator units. However, generator accessories are incorporated into this total and it consequently gives insight into the calculated market value relevant to the Universal Propane Adapter Kit™. At a moderate 10% of total revenue, the parts and accessories segment of the market would comprise of \$400 million in annual sales. If INI Power Systems retained 5% of that figure, it would equate to \$20 million in total gross revenue annually among both domestic and international markets. If INI’s propane adapter stays priced at \$1899 MSRP, then \$20 million in revenue would encompass over 10,000 units being sold annually. However, if the company was able to competitively price the adapter at \$250 via large purchase orders and a drastic increase in volume, then INI can anticipate selling 80,000 units. Taking a more conservative approach, if the company was able to retain 1% of the global market, roughly \$4 million in sales would be generated. Under the current price, 2,100 units would represent the \$4 million in gross revenue, while 16,000 units would make up the adjusted retail price of \$250.

Table 1: Global vs. Domestic Figures

Market Type	5% of Parts & Accessories Revenue	# of Units Sold @ \$250	# of Units Sold @ \$1899
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Domestic	\$6 million	24,000	3,200
Global	\$20 million	80,000	10,000

6.1) Recommendations

After carefully presenting the information outlined in this report, the recommendation seems standard from an outsider's perspective when compared to other industries. If certain criteria can be met and goals be reached, there is no reason not to pursue this venture into the household consumer market. The potential for revenue is there and forecasted growth rates are present. With a successful online marketing campaign and a website that accepts online ordering, revenue can easily increase and cause greater demand for the Universal Propane Adapter Kit™, in addition to other INI products. The two biggest questions of concern center around the pricing structure of the adapter, as well as the access to distribution channels across the country and around the globe.

In order to reap the benefits of the entire market size and value, it is important to accommodate the needs of the end-users and compete with other products on the market that can potentially take away sales from INI. Price is one of the most important factors in determining if a consumer will purchase an item or move on and look for competitor products. Many of the adapter and conversion kits sold online are priced between \$150 and \$300, and therefore it is in the best interest of the company to aim for a target price in that range. If it is necessary to remove some bells and whistles or replace certain high-quality materials for cheaper ones, then it has to be done. Outsourcing some of the processes might help with the decrease in cost associated with manufacturing the Universal Propane Adapter Kit™. The size of purchase orders is largely correlated with the price a firm is required to pay for certain products or packaging materials. There should be a way to increase the volume of purchases or to provide a letter of intent to manufacturers of the raw products to commit to periodic purchases over a given period of time in order to achieve lower wholesale prices. However, this requires an internal feasibility study and understanding the firm's budget and future plans of action for other avenues of growth. If INI was able to get the wholesale cost down to \$100-\$150, then it would be strategically positioned to enter the household market.

The access to necessary distribution networks is greatly important in successfully dominating the niche portable generator accessories market. Distribution channels are extremely important for any manufacturer or firm specializing in the fabrication of products for the broad consumer market. These products need to be readily available and easy for consumer to purchase. The more retail stores this product is found in, the higher the overall potential for an increase in revenues. It is critical that the adapter kit is found in places such as Home Depot and Lowes, as well as specialty stores, outlets, and big box retailers. It is virtually impossible for INI to reach the figures mentioned above with only online sales, and therefore if the possible potential for

large revenues is to be reached then lucrative distribution relationships need to be established. The online presence is not only to promote sales but is very important for the consumer to acquire more info on a brand or product, and to address customer service questions and inquire about additional products or services. Creating a widespread image for the brand and its products is a fundamental factor in a consumer-oriented market. With that said, if INI can incorporate these two adjustments into its business model, I believe it has the potential to become the industry leader for flex-fuel adapter kits for portable generators on a global level.

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