Grid REVolution

Grid REVolution New Venture Plan

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May 18, 2011

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1. Executive Summary

The Trends

Our world is overwhelmingly powered by dirty, non-renewable energy sources – however, the desire to move to clean renewable energy future is present and growing. Despite significant attention and incentives by legislators and regulators renewable energy sources only account for 8% of total energy production.

Two key strategies for moving away from fossil fuels are the electrification of transportation and greater integration of renewable energy sources into the electric power delivery system. There are significant challenges to implementing each of these strategies; but, with challenge comes opportunity.

The Opportunity

Clean, renewable energy sources are intermittent, varying with the sun and the wind. To handle those fluctuations and ensure a reliable energy supply energy storage is needed. Currently the grid has about 2.75% storage capacity, mainly through pumped hydro (LFWG, 2004). This is not enough. California just enacted regulation to require electric utilities to deploy more storage (CESA, 2010).

Overall, the market for energy services is huge. The energy market for battery services alone is estimated to grow to $4.9 billion by 2015 (Gartner, 2010), and demand is predicted to increase as more renewable energy is integrated into the grid.

The Venture

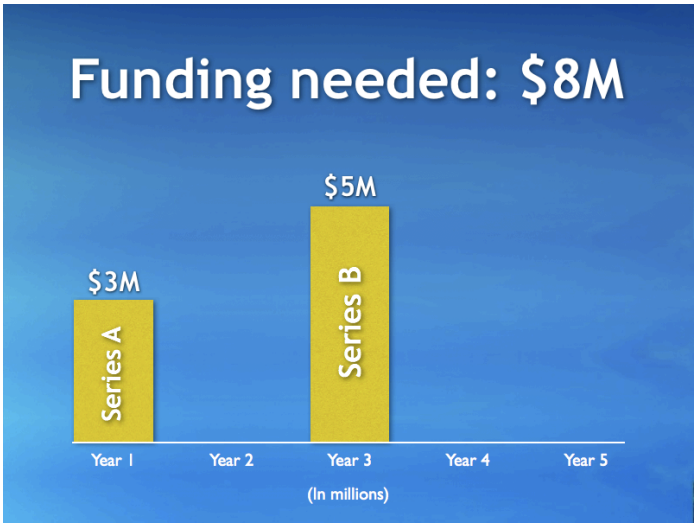
Grid REVolution seizes this opportunity by leveraging the predicted growth in electric vehicle (EV) ownership – over 1 million by the end of the decade – to transform electricity markets and accelerate EV adoption. Normally, electricity from the power grid only flows one way, to charge EVs. However, EV batteries can be used to put energy back on to the grid, that is vehicle-to-grid (V2G). By aggregating storage capacity of EV batteries Grid REVolution is able to sell energy services on existing energy markets -- which helps to stabilize the grid and enables greater use of intermittent renewable energy sources. On average, the sale of energy services generates $1,400 of V2G revenue per EV per year. Sales revenue is shared with EV owners, which makes EV ownership more affordable.

While the V2G concept is simple, implementation is more complex. That is why Grid REVolution is developing the software tools that enable the aggregation of EVs and the profitable sale of energy services. GridREV Charge Control software is a consumer-facing application that allows

EV owners input driving and charging requirements. The GridREV Control Center is the communication nexus between Grid REV, grid operators, EVs and their owners in order to schedule EV charging, determine aggregate EV supply capabilities, monitor energy markets, and execute energy market transactions.

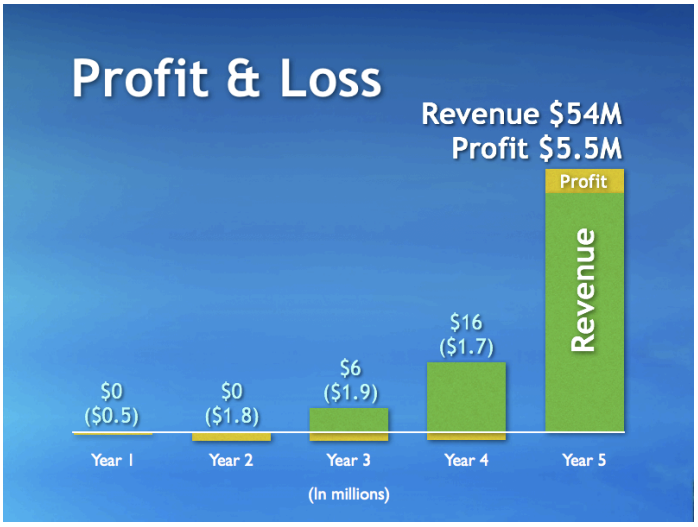
The Investment

To fund first year operations, Grid REVolution will obtain grants and offer stock in lieu of salaries for founders with a total value of $600,000. $3 million in Series A funding will be raised by the end of Year 1 and an additional $5 million in Series B funding by the end of Year 3.

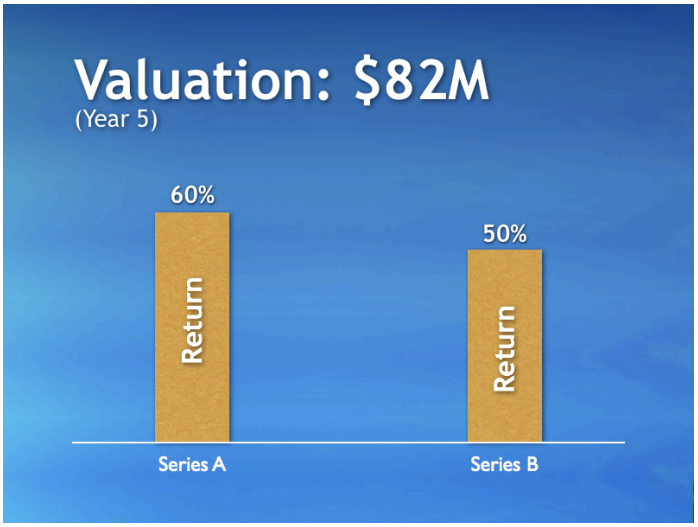


The Payback

Grid REVolution is profitable in Year 5 with $5.5 million in net profits and a 10% profit margin. This is comparable to other software companies that have profit margins between 10% to 30%. Revenues per employee will be approximately $500,000 in Year 5, which is also in-line with the industry standard of $300,000 to $600,000.



Using a P/E ratio of 15 and net revenues of $5.5 million in Year 5, Grid REVolution will be worth about $82 million. Allocating 50% of the equity for outside investors will produce a 60% annual return for the Series A investors and 50% for the Series B.



The Team

The Grid REVolution management team will consist of the seven initial founding members who bring a wealth of experience in entrepreneurship, project management, software and hardware development, and sales and marketing. These founding members will take a hands-on approach to the initial day-to-day operations of the company. The addition of personnel will focus on high-quality employees that bring a level of knowledge and experience that will help drive company growth.

2. The Market Need/Customer Need

2.1 Transformative Picture

Our world is overwhelmingly powered by dirty, non-renewable energy sources.

The downsides of relying on oil are clear. Political, economic and environmental issues make long-term reliance on oil foolhardy. Would the world simply come to a stop if there were no more oil? Probably, since 94% of transportation is powered by oil (EIA, 2010).

Despite significant attention and incentives by legislators and regulators renewable energy sources barely make a dent in our energy mix. In terms of total energy mix, all renewable sources combined, including hydro, only account for 8%. Wind, the source that many advocate as our best hope, only makes up 1% of total energy. Solar accounts for just 0.1% (EIA, 2010). The notion that an economy based on renewable energy is within reach is a misperception.

If renewable energy sources, such as wind and solar, made up a large percentage of the energy mix then energy production would stop when the wind stops blowing and there is no sun. In addition, wind lulls, gusts and clouds cause the power output to go up and down drastically, and our current grid will have difficulty handling those fluctuations. Also, the wind blows a lot at night when no extra power is when needed. For instance in 2010, enough wind energy to power 5 million homes was wasted because it was not needed at that time (Kraemer, 2011). So while the goal is to move to 25%, 33% or even 40% renewable energy, it just isn't practical today.

To make renewables practical, energy storage is needed. Currently the grid has about 2.75% storage capacity, mainly through pumped hydro (LFWG, 2004). This is not enough, however, and California just enacted regulation to require electric utilities to deploy more storage (CESA, 2010). There are other storage solutions such as flywheels, batteries, compressed air energy storage (CAES) and ice storage, but they are either expensive or impractical.

Two key strategies for moving away from fossil fuels are the electrification of transportation and greater integration of renewable energy sources into the electric power delivery system. There are significant challenges to implementing each of these strategies.

Grid Revolution provides solutions that address these obstacles and accelerates electric vehicle (EV) adoption while transforming electricity markets by enabling reliable integration of a higher percentage of renewable energy sources.

2.2 Benefits

Grid Revolution provides substantial benefits to a broad range of stakeholders as well as to society as a whole. These include:

For EV Owners – make ownership more affordable by lowering the total cost of ownership of EVs.

For Grid Operators – provide ancillary services that are needed for electricity grid stabilization and to allow for greater integration of renewable energy sources within their generation portfolio.

For Regulators – enable a reduction in the aggregate carbon footprint of the electricity grid and increase the availability of grid stabilizing electrical services.

For EV Manufacturers – enhance the attractiveness and marketability of their EV products by effectively extending the usable range of the car while lowering the total cost of ownership.

For Investors - offer a 10x plus clean-tech investment opportunity.

For Society – reduce reliance on fossil fuels, increase the viability of renewable energy sources, and decrease carbon emissions associated from driving and maintaining the electrical grid.

2.3 Customer Need

2.3.1 Customers

Grid REVolution's primary customers are grid operators, which includes independent system operators (ISOs) and non-ISO utilities who need grid services to ensure grid reliability of a consistent frequency of 60 hertz. This requires constant frequency up and down regulation in order to balance the system. Idle EV batteries are the perfect mechanism for providing this valuable ancillary service to grid operators. In addition, as more intermittent renewable energy generation comes online, more balancing ancillary services are required. The Cleantech Group estimates that roughly "4MW of ancillary services are required for every 100MW of wind energy added to the grid" (Cleantech Group, 2010).

2.3.2 Partners

Grid REVolution's partnership efforts involve many parties. Hardware production is achieved through partnerships with communication, inverter, and charging station manufacturers. Likewise, installation is subcontracted to service providers. Lastly, key partnerships with distribution channels enables broader access to EV drivers. The optimal partnership is with EV manufacturers who could offer the Grid REVolution product as a purchase option.

3. The Venture

3.1 The Solution

Before the end of the decade, there will be over 1 million electric vehicles on the road (ZPryme, 2010). Combined, these will have the equivalent power output of 40 good sized power plants.

Normally, the power from the grid flows from these batteries in one direction only - to charge them up. But why not make it two way and allow energy from these batteries to flow back onto the grid when needed to smooth out the dips in renewable energy?

Bi-directional charging already exists and enables vehicle to grid (V2G) technology. The collective storage capacity of the V2G vehicle batteries can be utilized to acquire, store, and sell energy services through existing energy markets.

While the V2G concept is simple, implementation is more complex. Especially in terms of managing a fleet consisting of thousands of EVs. That is why Grid REVolution is building software tools to make V2G on a mass scale a reality. There are two main software components: the GridREV Charge Control software and the GridREV Control Center. The GridREV Charge Control software is an application that EV owners use to optimize battery charging in order to ensure they have ample range and to maximize battery life – thus protecting the most crucial component of their EV investment. The GridREV Control Center is the communication nexus between Grid REV, grid operators, EVs and their owners in order to schedule EV charging, determine aggregate EV supply capabilities, monitor energy markets, and communicate with grid operators.

3.1.1 GridREV Charge Control Software

The driver-side charge control software communicates between the driver, the EV vehicle charging system and the GridREV Control Center (GCC). The driver's primary requirement is to always have enough charge to meet driving needs. The GCC faciliates this goal by automatically creating a charging and driving schedule that integrates driver's calendars, predicts range requirements, monitors battery statistics, and allows drivers to easily adjust the schedule to meet their needs. The application also tracks charge cycle patterns and compares them with the recommended profile to maximize battery life. Discrepancies between actual, intended, and ideal usage are communicated back to the driver to allow them to maximize the life of their battery. In order to maximize its effectiveness, this application runs on a wide variety of mobile devices and web browsers enabling access to vehicle charging information any time and anywhere.

The user interface for the application will allow users to view:

- Current charge (real-time)
- Today's scheduled route and mileage
- Charge needed for today's route
- Today's battery charging plan
- Charging costs/savings (based on smart charging of the EV)

Specific user requirements for this application include:

- View and change driving and charging schedule
- Synchronization between user's personal calendars, such as Google Calendars, and the scheduling module of the application
- Ability to change charge "padding"
- Monitoring charge patterns and maximizing battery life

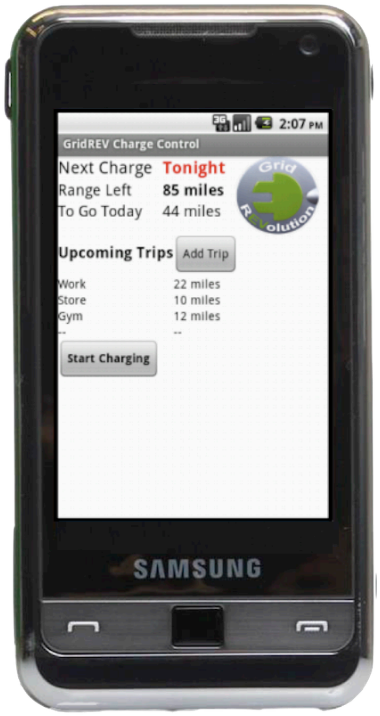


Figure 3.3.1: Example screen shot of the Charge Control software

3.1.2 GridREV Control Center

The brains of Grid REVolution are the suite of integrated software components that interface with the EVs, Charge Control software, and third party systems. It consists of a number of

software application that address different needs as detailed in the following section. The GridREV Control Center enables Grid REVolution to leverage the aggregate power of thousands of EV's to participate directly in energy markets.

The **Aggregation System** tracks the charge needs and levels of the thousands of EVs. This component determines the aggregate capacity available to Grid REVolution and selects the specific EVs to charge and discharge to provide contracted energy services.

The **V2G Interface** communicates with individual EVs in order to switch on and off the charging and discharging through wireless communications.

The **Market Trading System** is a sophisticated application that is linked to the energy markets. It tracks historical pricing, current bids, and the day's energy trends to execute a profitable electricity service bidding strategy.

For contracted bids, the **Utility Interface** communicates with the various utilities to deliver the specified power service to the grid on a real-time basis.

3.1.2 Software Development

The GridREV Communicator and GridREV Control Center software are central to the success of the Grid REVolution venture. The GridREV Communicator software is the public face of the company and its usability is key to acquiring market share needed for success. The ability to intelligently manage thousands of EV's to profitably bid on energy services is dependent on the complex processing of the GridREV Control Center.

The development of GridREV Control Center will leverage the existing Grid REVolution team's experience in software development and design. Additional talent will also be hired to scale development and acquire expertise in some of the more complex functionality that the GridREV Control Center requires.

Grid REVolution's core competency in software development will enable cost control, software quality, provide competitive advantage, and better positions Grid REVolution to pursue a differentiation strategy. Software development capabilities also enable Grid REVolution to be more agile in responding to market forces and customer demands. Grid REVolution's software, specifically the Charge Control Center, requires extensive development, but produces significant intellectual property.

A standard software development process is shown in Figure 3.1.2a below.

Figure 3.1.2a: Software development value chain

Showing the process as a loop more clearly reflects the non-linear, iterative nature of software design.

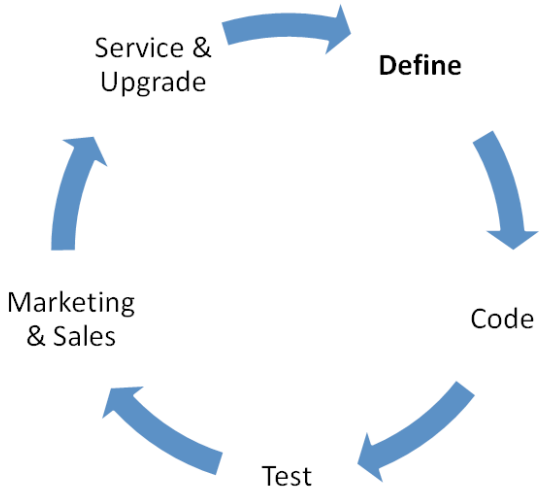


Figure 3.1.2b: Iterative software development value chain

Hardware development is not a Grid REVolution core competency. Much of the hardware needed for V2G functionality already exists. The development of the GridREV Communicator leverages existing hardware as much as possible. Additional manufacturing and physical integration of components is outsourced in order to reduce personnel expenses and capital investments. This approach also has the benefit of avoiding the cost of parts and inventory management, and the regulatory requirements of production facilities.

Hardware installation and service is handled by EV dealers and third party installers. Grid REVolution does not project that the hardware installation and service functions are a key component of the venture. As such, this activity will be handled through contractual agreements with EV dealers and trusted third party installers.

3.2 Venture Model

Grid REVolution's revenue model is based on selling energy and energy services on the energy markets. Currently, services that are best suited to V2G capabilities are a combination of regulation up and regulation down ancillary services. In common language this means that EV's add and remove energy in small amounts in order to balance the grid. Grid balancing services are important to grid operators who must ceaselessly balance the grid to provide the constant and reliable supply of electricity that society has come to expect. Typically grid operators buy these services as commodities on the markets that they run themselves. Since they are commodities, marketing and customer relationship management are not required. In most markets, all that is required to participate is proving resource adequacy.

In order to provide these services, Grid REVolution requires access to EV batteries. Grid REVolution's ability to generate revenue is directly tied to the ability to attract EV driver partners. To entice EV drivers to participate, a portion of the revenue is shared with them and an appeal is made to their desire to help revolutionize the energy grid. Building a direct relationship with our EV partners is of prime importance and gives Grid REVolution a competitive advantage as the owner of that relationship controls the EV's battery.

3.3 Industry Landscape

The energy and automotive industries are both complex. Figure 3.3a explores the relationships between the major businesses in the industries and government institutions in the EV industry value chain and their connections.

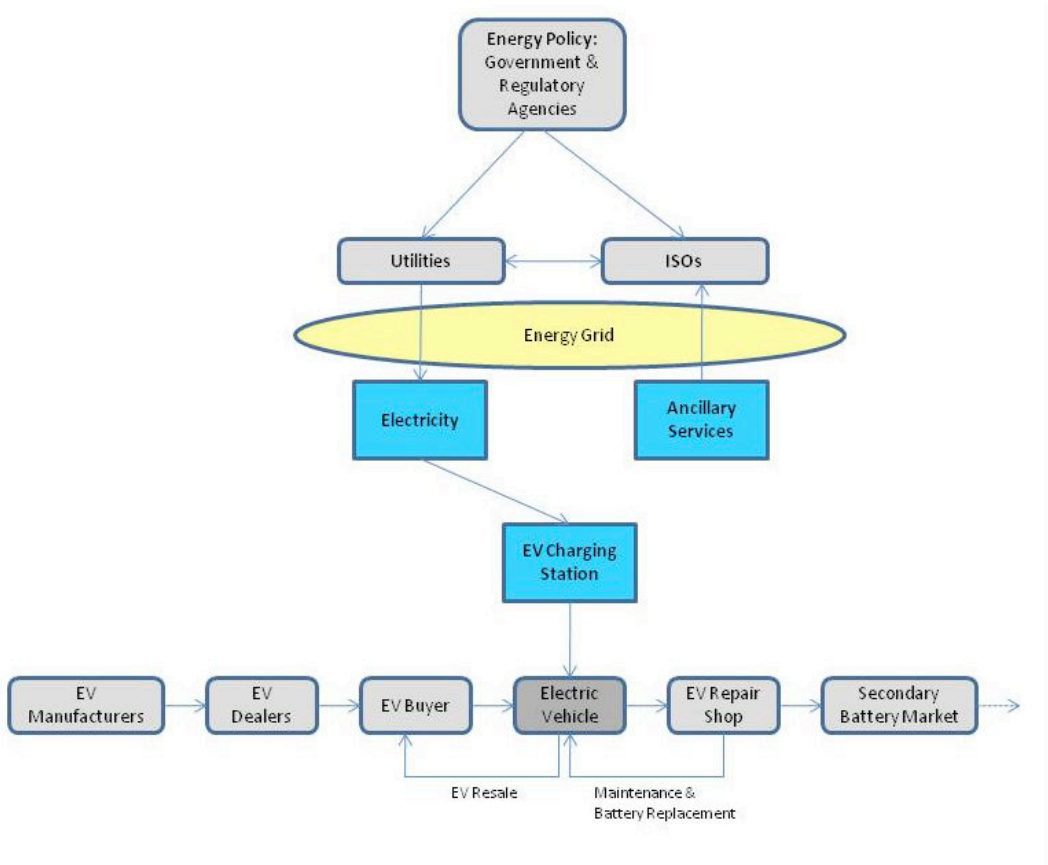


Figure 3.3a: Industry landscape

Figure 3.3b illustrates the strategic leverage points that provide the greatest potential to ensure the success of the venture. The dashed lines indicate revenue generating service areas for Grid REVolution. The first marker represents revenue opportunities tied only to the ability to control charging. These opportunities do not require bi-directional charging and would obviate some of the regulatory changes necessary for true V2G. The revenue opportunities include demand response, load shifting, and even regulation down services. The second point indicates revenue generation from full V2G capabilities and the selling of electricity discharged back on to the grid including regulation up, time shifting, or reserve based services. Currently, this would take the form of selling ancillary services such as regulation and reserve services. It also includes energy arbitrage where energy from EV batteries that were charged inexpensively at off-peak rates is sold back into the grid at peak prices (time-shifting). The third indicator denotes the potential to participate in the secondary market for used EV batteries by utilizing partially degraded batteries to create a stationary energy storage system that provides the same services as V2G.

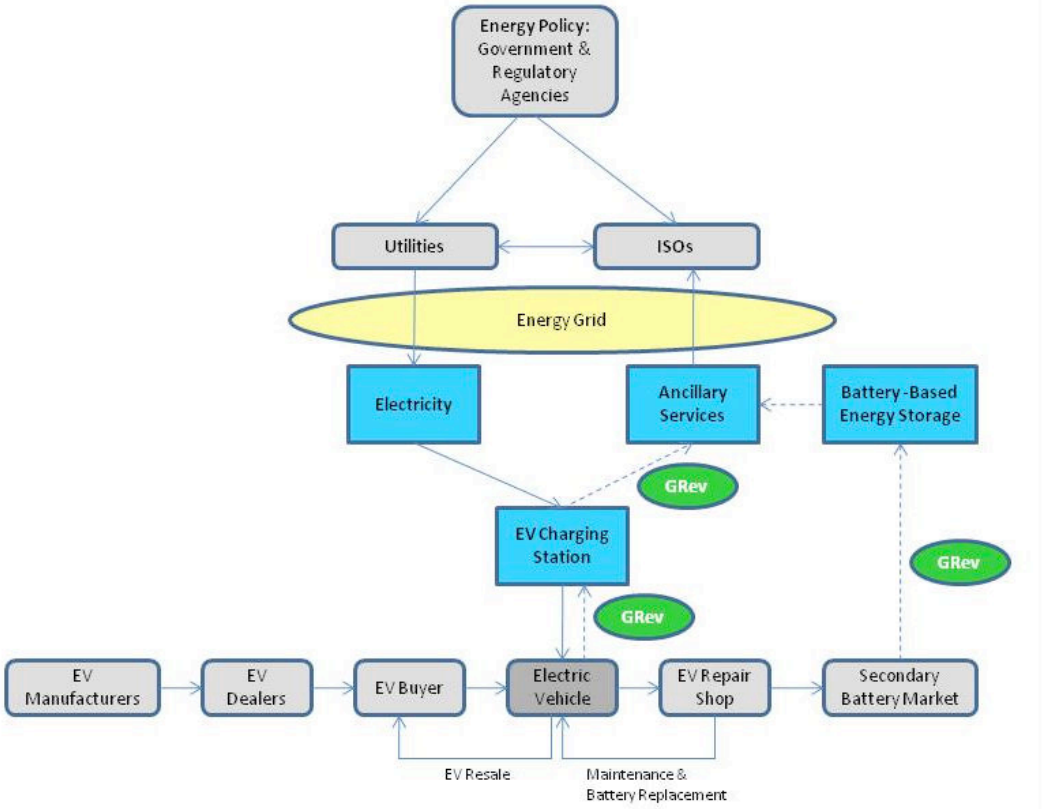


Figure 3.3b: Grid REVolution value chain

4. The Opportunity

4.1 Opportunity Analysis

Grid REVolution's revenue comes from energy market sales. These markets vary in the services sold, the requirements to participate, and the mechanics of the market from region to region. Overall, the market for energy services is huge. The energy market for battery services alone is estimated to grow to $4.9 billion by 2015 (Gartner, 2010). Part of this growth is attributable to an increase in renewable energy sources on the grid. The amount of services needed to stabilize the grid is predicted to increase as more renewables are integrated into the gird. The $4.9 billion estimated growth, plus the likely continuance of this trend, mean that it is unlikely that Grid REVolution will be constrained or impacted by low or declining demand for energy services.

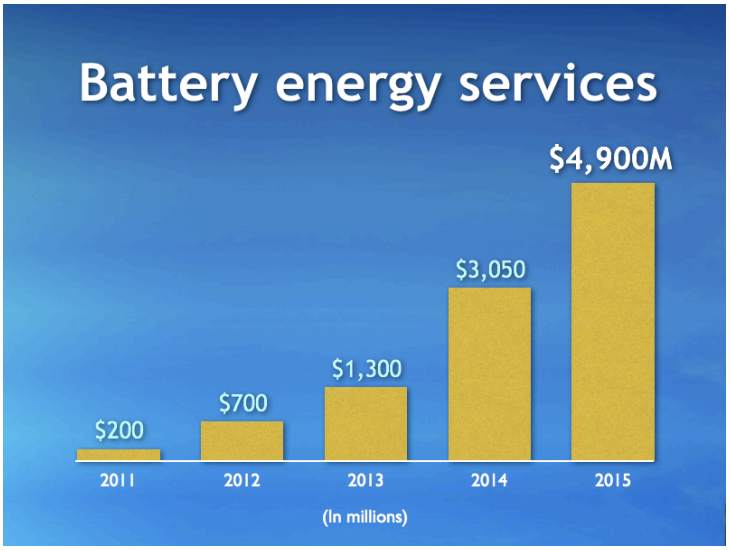


Figure 4.1: Battery energy services market

4.2 Addressable Market Size

In determining addressable market size, it is most useful to analyze the quantity of EV batteries that will be available to supply the energy services. Therefore our Total Addressable Market (TAM) is based on the total population of potential EV driver partners. In other words, the total number of EV's on the road.

The DOE predicts that one million EVs will be sold in the US by 2015 (DOE, 2011). In the interest of taking a conservative approach and creating a more robust business model,

Zpryme's estimate of 770,500 EVs on the road by 2016 is being used (Zpryme, 2010). This is equivalent to a 36.2% annual EV adoption growth rate and assumes that there are 43,400 EVs already on the road in 2011.

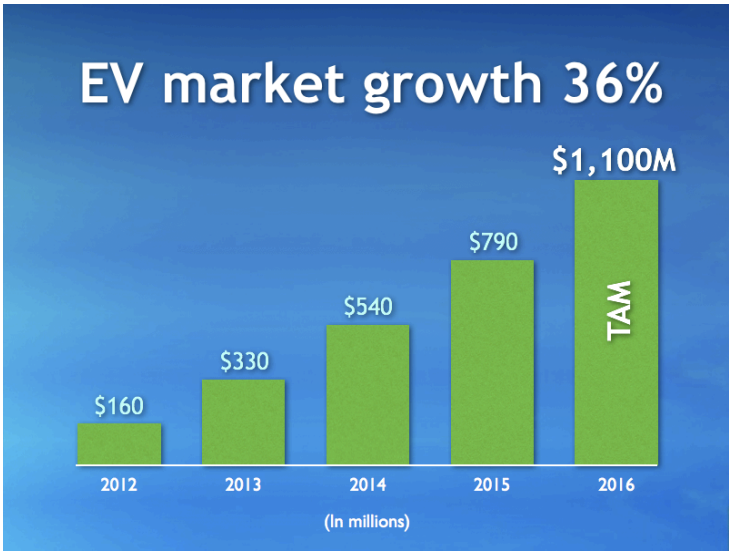


Figure 4.2: Total addressable market (TAM)

The Served Addressable Market (SAM) is the number of EV drivers that could actually become Grid REVolution partners. The SAM is a subset of the TAM based on the following criteria:

- The EV's must reside in markets where V2G are approved to provide energy services
- The EV's must be connected to charge stations on average at least 21 hours a day
- The EV must not use more than 50% of their charge capacity more than 20% of the time

Most EV's are predicted to be sold into major electricity markets where V2G is approved. However, long-distance commuters and those who do not have access to chargers at work will impact the SAM. After considering these parameters, and an analysis of the Zpryme EV study, Grid REVolution estimates that the SAM will be about 32% of the TAM. Rationale for the SAM is based on the following:

- EVs sold into markets where V2G is approved are estimated to be 530,560 by 2016 (Kema, 2010), which is 69% of total EV sales (770,500) (Zpryme, 2010).
- 53.9% of consumers cited charging at work to be "very important" (Zpryme, 2010, pg 22) which implies about 46% of EVs will be parked mainly at home.
- The average trip length for Nissan Leaf drivers is 7 miles (Nissan, 2011) so there is plenty of battery capacity to user for grid services.

The intersection of the 69% of EVs in approved V2G territories and the 46% that can be plugged in the majority of the time leads to our SAM of 32% of the TAM.

The current projections for extensive EV production combined with continued increases in renewable energy sources due to Renewable Portfolio Standards (RPS) provide a fortunate opportunity for Grid REVolution. The former indicates that there is an ever increasing demand for services. The latter translates into an increasing ability to supply that demand. The combination results is a unique opening for the organization that can bridge V2G technology and the energy services market.

5. Competition

5.1 Competitive Landscape

As stated previously, the V2G market is in the exploration phase. There have been several small research projects to test the concept of having vehicles put power back onto the grid that have proven successful.The competition right now consists mainly of possible collaborators and complementors. There are many companies looking into V2G, but single company provides a complete solution like Grid REVolution is offering. Companies that are not in the V2G space right now but might possibly enter it in the future are also listed.

5.2 Competitors

The following section lists organizations that are involved in the V2G space today. Currently, there are no direct competitors. This will change and some players in the space will become direct competiton. The following list briefly outlines each organization's focus and designates whether it is most likely to be a competitor, collaborator, or complementor.

University of Delaware (Collaborator)

The most advanced and well known V2G project in the United States is at the University of Delaware (UD). This is the brainchild of Willett Kempton. The goal of the project is to educate stakeholders and explore V2G solutions and the economic feasibility of bringing V2G technology to market. UD has signed a licensing agreement with AutoPort to receive royalties on any cars sold with V2G capabilities (UD, 2011). The University has partnered with a number of V2G providers. Grid REVolution is setting up talks with UD to discuss collaborating with them.

Rocky Mountain Institute (Collaborator)

Rocky Mountain Institute (RMI) has several programs around EVs, charging infrastructure and the Smart Garage - their name for V2G (Burns, n.d.). RMI could be a collaborator in Grid REVolution's V2G efforts.

Google.org (Collaborator)

Google.org has experimented with PHEVs and also has installed a large solar panel array at their headquarters in Mountain View. Google might be a potential collaborator to test the Grid REVolution V2G system.

AC Propulsion (Complementor)

AC Propulsion manufactures the eBox, a Toyota Scion converted to an EV, that went into Kempton's first car at UD (Jia, 2009). AC Propulsion puts an auxiliary power unit (APU) into electric vehicles to enable them to put power back on the grid. This unit also has wireless Internet capabilities and control software developed in conjunction with CARB (AC Propulsion, 2010). AC Propulsion is currently a complementor since their hardware could be used in conjunction with the Grid REVolution system. It remains to be seen whether AC Propulsion might extend efforts to compete directly with Grid REVolution.

BPL Global (Potential Competitor)

BPL Global has solutions to manage distributed energy resources like EVs. They have the flexibility to manage individual EVs regarding when to charge as well as providing energy back to the grid in V2G fashion. Due to overlap between BPL's offerings and Grid REV's they can be considered a competitor, though their aggregation software may be used as part of the Grid REVolution solution in which case they would be a complementor.

GridPoint (Potential Competitor)

GridPoint provides energy management systems for enterprises and utilities. One of their newest offerings is for charging service providers. GridPoint enables municipalities, businesses, and utilities to monitor and manage their charge station networks. They provide data to customers to understand charging impact and control costs (GridPoint, 2011). While this isn't yet a V2G system, GridPoint is positioning themselves to be a competitor in the V2G market.

AutoPort (Indirect Competitor)

AutoPort is an auto-conversion facility in Delaware that has recently started building V2G capable vehicles. Their technology, licensed from UD, will initially be installed in 100 demonstration vehicles over the next year (Physorg.com, 2010). AutoPort is an indirect competitor since they are focused mainly on EV conversions.

REV - Rapid Electric Vehicles (Indirect Competitor)

REV, like AutoPort, does EV conversions. They specialize in EV trucks used on construction sites where the EV can be used to power the worksite tools rather than relying on gas-powered generators. They are working with Viridian Power on a V2G test project (Cars21, 2010).

Coulomb Technologies (Potential Competitor)

Coulomb is a major player in the EV charging station market and has developed extensive software to communicate with its charging stations, connect to the utilities software platforms and to control charging. As such, they are a potential competitor. However, as of May 2010,

Richard Lowenthal, who was then CEO of Coulomb, stated that he didn't believe that V2G was going to happen (McShane, 2010).

EnerNOC (Potential Competitor)

EnerNOC is a demand response and energy management company. As such, they already work with the utilities and large companies to shed electric load when needed. While EnerNOC has not publicly made any comments about entering the V2G market, they are well positioned to enter it if they decide to.

Virtual Vehicle Company (Potential Competitor)

The Virtual Vehicle company is starting beta on Virtual Test Drive that uses the GPS in an iPhone to keep a log of where a person drives and then tells them how an EV would have performed on that route (Virtual Vehicle Company, 2011).

Leading Car Manufacturers (Potential Competitors)

Potential competition may come from the leading car manufacturers. As EVs such as Nissan's Leaf and Chevy's Volt gain market acceptance, manufacturers will start to incorporate V2G technology. Some manufacturers provide smartphone applications already. They will all probably start to examine the V2G market (Jia, 2009).

5.3 Competition Grid

In analysing the competition of Grid REVolution, it is helpful to consider two factors: V2G focus and the scope of the offered solution. Some competitors have a high V2G focus but don't offer a very complete solution, like AC Propulsion. Other competitors might have the capability of offering a more complete solution but don't have a high V2G focus, like EnerNOC. Grid REVolution's strategy is to differentiate itself as the only company focused exclusively on V2G and by offering a complete solution. These two factors afford Grid REVolution a unique position in the landscape and should translate into category leadership.

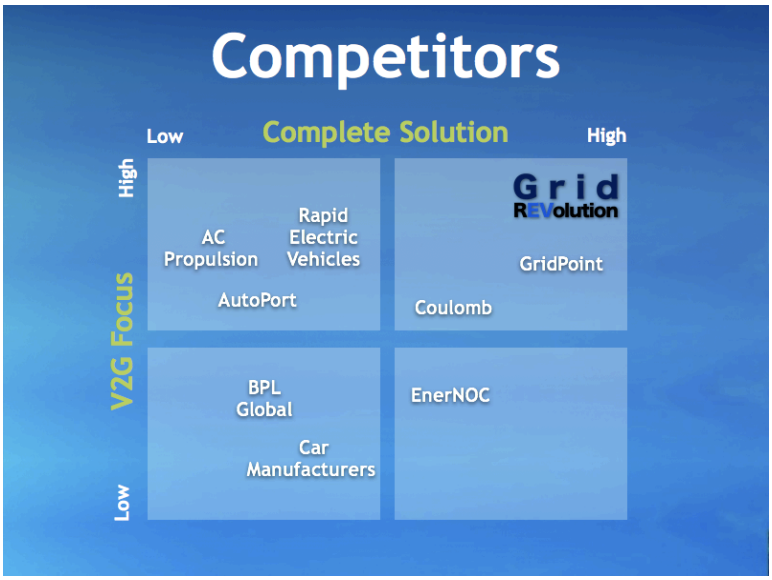


Figure 5.3: Competition grid

5.3 Competitive Advantage

Although it will be several years before the regulatory landscape permits V2G, Grid REVolution is developing the necessary software today, to make V2G a reality. Developing the technology in anticipation of the market's fruition allows Grid REVolution to gain early mover advantage. Although maintaining first mover advantage presents challenges, Grid REVolution's strategy of building direct relationships with EV driver partners and providing the first scalable V2G offering creates significant barriers to entry for any later market entrants.

5.3.1 Competitive SWOT

Based on the market and competitive analysis, this is a current snapshot of Grid REVolution's strengths and weaknesses, as well as market opportunities and threats.

Strengths:

- Early mover advantage
- Deep understanding of the market

Weaknesses:

- Significant investment needed in development
- Outstanding issues with enabling energy market regulation and auto manufacturers
- Need engineers

Opportunities:

- Rising consumer demand for clean transportation
- Rising oil prices makes EV more competitive
- Increasing demand for grid stabilization services
- Regulations require utilities to build up energy storage capacity

Threats:

- Large auto manufacturers will enter market
- Viable V2G market is years away
- EVs are surpassed by other transportation technologies
- Battery costs remain high
- EV charging infrastructure does not get built out

5.3.2 Barriers to Entry

Currently, V2G projects are small and experimental. Significant obstacles lie in the way of any organization attempting to provide a scalable V2G solution. There are many obstacles to overcome to integrate V2G with energy markets. Firstly, there are significant technical challenges related to the complex software that coordinates thousands of EVs with the minute by minute energy needs of grid operators. However, the greatest challenges are external. These depend on changes in the V2G landscape, many of them regulatory in nature. They include:

- Warranty implications of bi-directional charging need to be resolved with auto manufacturers
- Charging stations must accommodate bi-directional charging
- Grid operators must recognize aggregate distributed storage solutions as qualified for ancillary services
- Enough EVs need to be aggregated to meet the minimum 1MW power requirements of ancillary services markets
- Connection requirements pertaining to the recognition of services provided by distributed storage need to be clarified

6. Marketing

6.1 Customer and Partners

6.1.2 Customer

Since Grid REVolution provides commodity energy services to grid operators, traditional marketing and sales strategies do not apply. To offer these services on most markets, the only requirement is that the provider sign a resource adequacy (RA) contract, receive certification, and provide collateral.

There are seven Independent System Operators (ISOs) in the U.S. ISO: CAISO, MISO, NY ISO, PJM, ERCOT, SPP RTO, and New England RTO. Each ISO is responsible for the reliable provision of electricity in their service area and creates a market for energy and ancillary services in order to support this mandate.

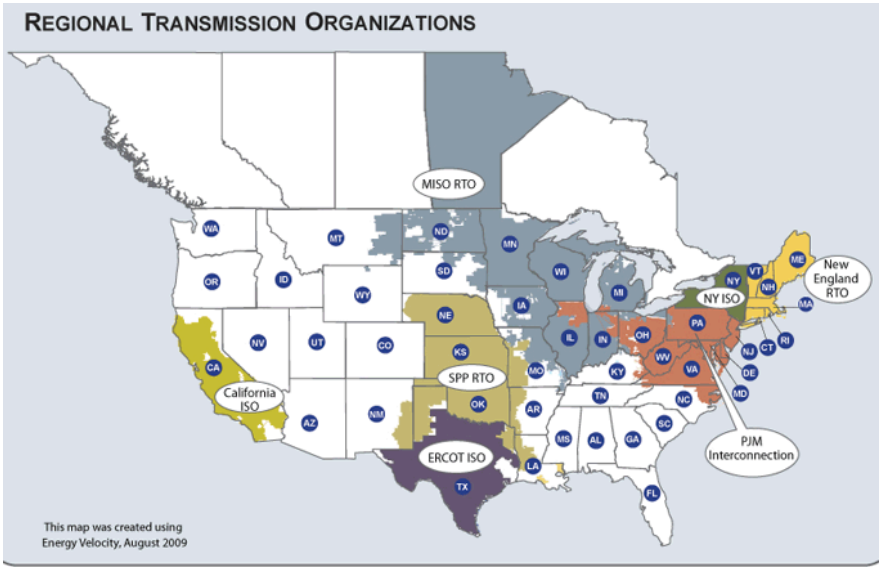


Figure 6.1.2: US ISO/RTO market (FERC, 2011)

The expected concentration of EVs in each service area is illustrated in the table XX. CAISO, PJM and MISO are the service areas with the highest expected EV adoptions rates (Kema, 2011).

Table 6.1.2: EV and PHEV in the ISO U.S. regions (Kema, 2011)

ISO	Consumer EV & PHEV	Fleet EV &PHEV	Total EV & PHEV
ISO-NE	50,780	10,294	61,074
NYISO	28,194	15,544	43,738
PJM	103,124	41,048	144,172
Midwest ISO	65,022	29,622	94,644
SPP	18,466	11,993	30,459
ERCOT	27,276	15,493	42,769
CAISO	237,698	29,956	267,654
Total	**530,560**	**153,950**	**684,510**

Smaller regions are not managed by ISO's and do not have true ancillary service markets. These markets depend on individual relationships with the utilities that operate the grid. Contracting with these utilities requires significant sales and marketing with less potential revenue, therefore Grid REVolution will not target the non-ISO utility market until contracts are signed with most ISOs. Additionally, the ISO contracts will lend credibility and increase leverage with the non-ISO utilities.

6.12 Partners

Grid REVolution considers its partners to be EV drivers who supply the electricity that Grid REVolution sells back into the energy grid. Building strong relationships with EV drivers is essential to V2G and Grid REVolution's success, therefore this is where Grid REVolution will concentrate the majority of its marketing efforts. The following is the EV driver acquisition marketing strategy.

6.2 Brand

6.2.1 Brand Promise

The brand promise is twofold. First, the Grid REVolution is a V2G system that enables EV drivers to reduce their total cost of owning an EV. This is accomplished through a cash reimbursement in compensation for using their battery. Secondly, Grid REVolution appeals to the driver to join its mission to revolutionize the energy grid.

Additionally, part of the Grid REVolution contract with our driver partners is to alleviate concerns about the effect of the usage of their battery by reducing liabilities associated with batteries. First, our software is designed to ensure that their range needs are met and reduce range anxiety. Secondly, we guarantee to replace their battery if it does not meet battery life expectations.

6.2.2 Brand Positioning

Grid REVolution is the first mover in the V2G market with an offering that provides a complete solution. By providing innovative, user-friendly and dependable service, the Grid REVolution brand will quickly become synonymous with V2G. For the practical EV owner who wants to make a return on their EV investment, Grid REVolution enables them to participate in the lucrative energy market and generate a monthly cash reimbursement. Grid REVolution entices EV drivers and others to join the mission to stabilize the grid, integrate renewables, and creates a cleaner energy future.

6.2.3 Brand Values

The following brand values are embodied by the company and conveyed to Grid REVolution's customers:

- Sustainability
- Economic security
- Environmental stewardship
- Dependability
- Innovation

6.2.4 Brand Messages

The brand values translate into the following messaging that is used in Grid REVolution marketing campaigns: Grid REVolution/EV driver partnership for our future, earning money through idle battery, environmental benefits, energy independence, innovative technology, dependable technology, and clean energy economy.

While the primary messaging to EV drivers in all markets is making money from idle EV batteries, the secondary messages will vary by location (e.g. California versus Texas) and by segment timing (e.g. early EV adopter versus early majority). For instance, when targeting early adopters in the San Francisco Bay Area, messaging is focused on the environmental benefits Grid REVolution provides. While in Texas, where the "Freedom EV Charging Network" is gaining popularity, the secondary message is energy independence.

6.3 Market Segmentation

Grid REVolution's target market, EV owners, is segmented along the technology adoption lifecycle model. Grid REVolution initial focus is on early EV adopters and then the early EV majority.

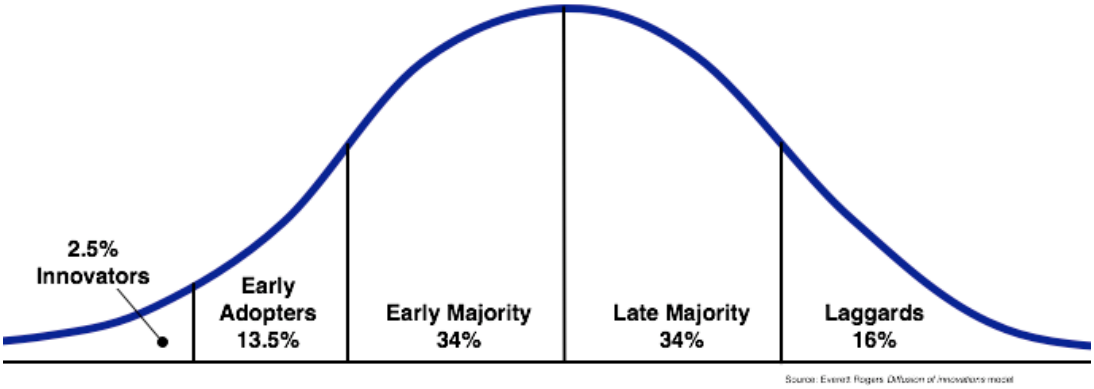


Figure 6.3a: Everett Rogers' technology adoption lifecycle model
http://techticker.net/wp-content/uploads/2008/06/diffusionofinnovation.png

Early EV adopters are likely to be under 44, have income of $114K+, and already own one or more vehicles. Grid REVolution targets both males and females, however, males are more likely to be early adopters of EVs. These consumers are environmentally conscious and they perceive EVs as "green and clean." They are concerned about U.S. dependency on foreign oil and are politically active. This segment is willing to pay a premium for convenience, but reliability is also very important (Deloitte, 2010). They are tech savvy, regularly use email and social media, and like smart phone applications (Zpryme, 2010). Finally, they live in highly populated metropolitan areas in homes with an electric power sources in their garages. On average, they drive less than 100 miles per day (Deloitte, 2010).

As EV ownership increases, Grid REVolution marketing focuses on the early majority customer segment. This segment is similar to early adopters, but is more hesitant about new technology and has a "wait and see" attitude (Zpryme, 2010). They are expected to have slightly lower incomes than early adopters and to be more price sensitive. The financial benefits that Grid REVolution offers to customers will be highly appealing to this segment.

Target market segments are also defined geographically by territories that have both an ISO and high expected EV adoption rates. In order of priority, the top four target states are California, New York, Texas, and Illinois (Kema, 2010).

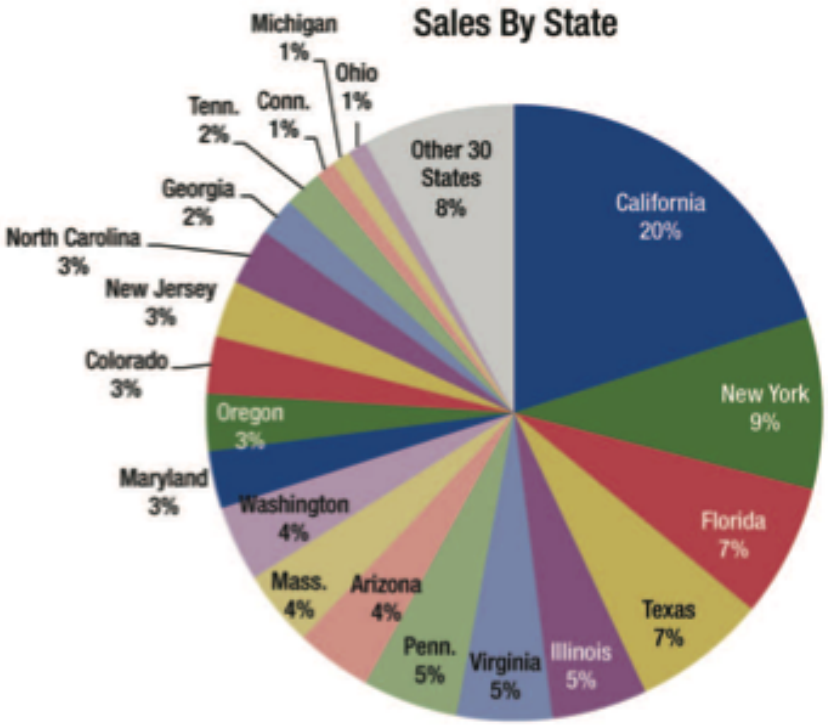


Figure 6.3b: Expected EV sales by state (Leeds, 2011)

Other states that do not have an ISO but are expected to have high EV adoption (e.g. Florida and Washington) are targeted after GridREVolution establishes ISO partnerships in the first four target states.

6.4 Pricing Strategy

The main revenue source is ancillary services sold to ISOs. The GridREV Charge Control smart phone app will cost $1. This low price promotes wider software adoption, which builds brand awareness. Sales of V2G ancillary services are expected to provide $1,400 per year per vehicle, half of which is shared with the EV driver. In addition, some of this revenue will go towards end-of-life battery replacement program.

6.5 Distribution Strategy

There are several paths to bringing the V2G product to market. Initially the GridREV Charge Control software is marketed directly to EV owners through a multi-channel marketing and promotions campaign.

Grid Revolution is seeking strategic partners that can cross-promote and provide distribution channels for the Grid REVolution service. The most beneficial partners are EV manufacturers who can sell a V2G box as a standard or optional feature in their vehicles. Additionally, EV charging station providers can provide the hardware for aftermarket V2G upgrades.

6.6 Advertising, Promotion & Sales Strategy

Grid REVolution has a multi-channel promotional and advertising approach to gain EV driver partners, leveraging cost-effective online and grassroots efforts. Due to the disruptive nature of the technology, marketing mediums that are interactive and demonstrate how the technology works are the most effective. Marketing messages emphasize financial and environmental benefits, as well as energy independence resulting from Grid Revolution's V2G technology.

Website / Social Media

The Grid REVolution website is the most important branding and marketing tool. It contains the download for the GridREV Control Center, the customer facing app for smart phones. The website is educational and interactive, contains customer testimonial videos and articles, interactive demonstrations and live feeds of V2G technology. Cost and green house gas (GHG) calculators are featured as well as additional information about EV technology, charging infrastructure, and the latest EV news. Cross promotional links between Grid REVolution and preferred hardware providers are also featured.

Social media is the perfect for reaching the Grid REVolution target EV driver partner who is be tech savvy and spends a lot of time online. Grid REVolution uses Facebook, Twitter, and Linked-in to target influential individuals for Grid REVolution demonstration projects and testimonials.

Demo's and Pilots at Events

One of the most powerful tools for promoting V2G technology is a live demonstration with actual EVs feeding into the grid or a grid-like representation. Grid REVolution will have these demonstration projects at green events, car shows, conferences, street fairs, and other community events that present opportunities to educate the public.

Public Relations Campaign

Grid REVolution believes that V2G technology is news worthy and will use public relations strategies to create media excitement and educate the public about the the technology and the environmental benefits and the financial benefits to the EV driver when ever possible. This type of promotion is extremely cost effective for reaching large customer segments.

Partnership with Complementary Companies

Grid REVolution partners cross-promote the V2G service. EV manufacturers and dealerships can install the needed hardware for the GridREV Control Center so drivers are GridREV enabled when driving off the lot. This benefits the manufacturer who can sell the EV driver on the ideas the he/she can recoup a portion their investment by partnering with Grid REVolution. Partners are paid a fee for each Grid REVolution customer acquired.

Cross promotions with complementary companies such a EV charging stations and renewable energy sources can provide free to low-cost advertising.

Advertising/Promotional Materials

Grid REVolution favors paperless marketing methods. Grid REVolution may advertise in environmental and automotive publications and websites but the preferred method is free articles and free TV news coverage. Printed materials such as brochures and customer educational materials are available, but customers have the option of receiving electronic copies instead.

7. Operations Plan

Grid REVolution creates an exciting, caring and fair workplace where meaningful work is done as the team strives towards a common vision of a world where transportation is powered by clean energy.

7.1 Operations Strategy

Initial Grid REVolution operations will be “bootstrapped” by the co-founders without any additional hires or major capital expenditures. Partnership cultivation for strategic testing and hardware/installation supplier vetting will begin immediately. Parallel development of the GridREV Charge Control software will precede Series A investment as proof of concept, and only after outside capital has been acquired will development begin on the installation protocols for critical hardware components.

Grid REVolution will continue to run lean as hires will focus on software engineering, business development and marketing. Investor money will be focused on the needed infrastructure development for the Grid REVolution control center. Additional services for general operational activities will be largely outsourced, as will the continued development of the driver app. Series B funding will enable the expansion of staff, facilities and capabilities as revenue comes online with the deployment of the V2G system.

7.2 Production Activities & Process Description

Grid REVolution utilizes both in-house and outsourced resources to develop our services. Software development for the driver app and vehicle control system will be done by Grid REVolution employees with some outsourced contractors. This process will be managed by our founders into the foreseeable future, who have experience both in managing large scale software development. This cornerstone of the Grid REVolution offering represents a clear manifestation of our core competencies, and will be the genesis of the venture.

The Grid REV Control Center software and operations will be largely outsources to those with experience in the utility ancillary services field. The function of the Control Center is to be based on existing business systems, and therefore necessitates the usage of contractors with established expertise. Over time, these operations will fall under the direct control of Grid REVolution employees through a combination of tactical hires and direct employee experience.

7.3 Cost Analysis

The initial GridREV Charge Control software application is intended to capture market share, and is not anticipated to generate substantial revenue. Year 2 will see the rollout of trial V2G systems with selected partners.

Since the GridREV Charge Control app is distributed as a download, there is no cost of goods sold (COGS) associated with it. This helps with cash flow. However, the development of this software entails high up-front costs, so outside funding is required.

Costs for Grid REVolution are based on the following assumptions:

Software Development

- 2 software engineers for year 1, with additional engineering services added each subsequent year to a total of 20 in year 5. Pay rate starts at $90,000 for year 1, and moves to $100,000/yr each in years 2-5.
- 1 R&D manager will be hired in year 1, with a salary of $60,000 plus equity participation. Subsequent years will see 1-2 more hires with all being paid a rate of $130,000/yr.

Sales and Marketing

- A business development manager, with some equity share, in year 3 at a pay rate of $150,000/yr.
- A marketing manager, brought on in year 2, with a pay rate of $130,000.
- Sales persons will be brought on starting year 2, with a steady ramp-up to 15 people in year 5 at a rate $90,000/yr. Sales staff will start in year 3 with a corresponding increase to 15 people at a rate of $50,000/yr.

Executives

- The CEO and CFO will both be equity holders with salary increases starting in year 2.

Additional Staff

- 1 administrative hire will be made in the first year, with a staff growing to 15 by year 5 at a rate of $50,000/yr.
- 1 accounting hire will be made in year 2, with 1 additional staff member joining per year at a rate of $80,000.

Office Space/Equipment/Computers

- Office space required is at a minimum as staff will remain low for 2-3 years. Office space needs are estimated at 300-400 square feet per person at a rate of $3-$4/sq ft.
- Equipment costs will be kept low as cloud based servers are utilized to provide the ancillary service component of Grid REVolution. Initial equipment needs are estimated to be less than $50,000 total until ancillary services are provided, at which point the cloud based system will cost approximately 5% of total V2G revenue.

8. Sustainability

Population growth, economic development, and urbanization are trends that are increasing the world demand for electricity and transportation. At the same time the world is faced with the dual challenge of finding alternatives to the dwindling supply of fossil fuels while addressing climate change by drastically decreasing the production of greenhouse gases. For instance, transportation and electricity production accounted for 70% of US CO_2 emissions in 2008 (EPA, 2010). Renewable energy can help with both of these problems, but comes with its own challenges. The biggest challenge of wind and sun energy is that it is intermittent, creating the need for energy storage systems, which are also are advantageous in providing electricity regulation services.

8.1 Holistic Outcomes Delivered by the Venture

Sustainability permeates the Grid REVolution value proposition. Though there is no particular framework in which Grid REVolution developed its service with regard to sustainability, the business model enhances the well know triple-bottom line: people, planet and profit. There are two major areas in which the Grid REVolution business has the greatest impact. They are the benefits resulting from the increased adoption of EVs and benefits related to utilizing batteries to provide energy services.

EVs have significant environmental and social benefits. EVs have no tail pipe emissions, which means they are better for air quality and significantly reduce GHG emissions. Currently over 33% of U.S. GHG emissions come from transportation (EPA, 2011). According to the U.S. DOE, when comparing the lifecycle of EV emissions to conventional internal combustion engine (ICE) vehicles, EVs reduce CO2 by 28% (2011). This increases significantly when looking at states like California where the energy mix is cleaner. In fact, the California Energy Commission (CEC) claims that with the electricity fuel mix in California, EVs reduce GHG emissions by 74% (CEC, 2009). In addition to GHG reductions, when considering human health, damage to ecosystem quality and damage to resources, EVs have 220% less impact than gas powered cars (Gauch et al., 2009).

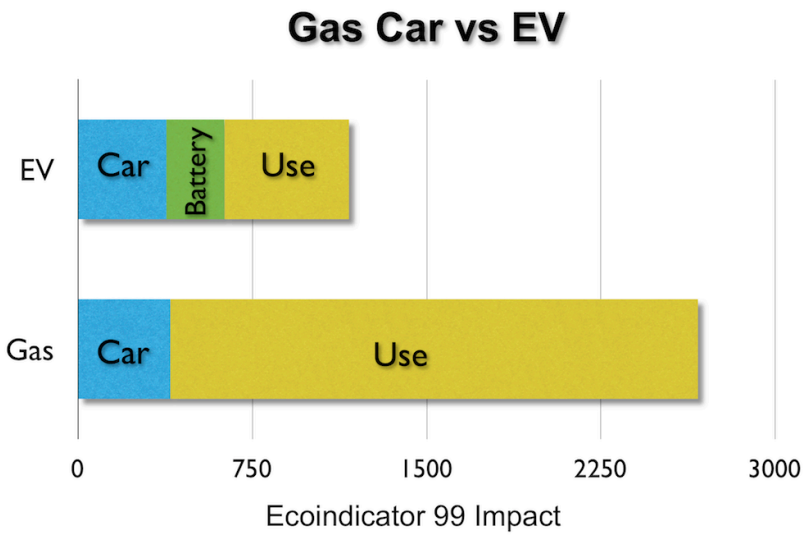


Figure 8.1a: Gas car versus EV lifecycle impact comparison (Gauch et al., 2009)

By increasing the adoption rate of EVs, Grid REVolution will be reducing the usage of oil. Car and truck transportation accounts for over half of our total oil usage and 97% of our transportation is fueled by oil (EIA, 2010, pg 44).

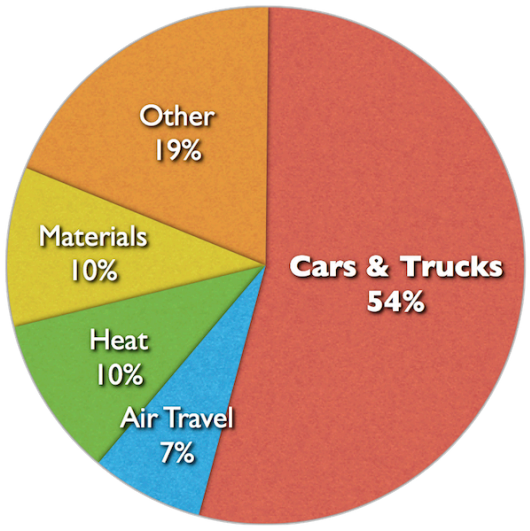


Figure 8.1c: Oil usage by sector (Komanoff, 2002)

Oil is a finite resource. When an oil pocket is first found, it usually flows out of the ground fairly freely. However over time it gets harder and more expensive to get the oil out. Also once the more easily accessible oil pockets are found, it is necessary to start drilling deeper or offshore to find additional reserves (Grubb, 2011). These effects serve to drive up the price of oil and to limit how much we can pump out of the ground. The point in time of maximum global oil production is

referred to as peak oil, and some experts believe that we have already passed that point (TOD, 2010). Four dollar pump prices provides an even more immediate illustration of the effects of our dwindling oil stocks and our reliance on oil to power our transportation. Electrifying our transportation, therefore, is vitally important to reaching a sustainable transportation system and sustainable way of life.

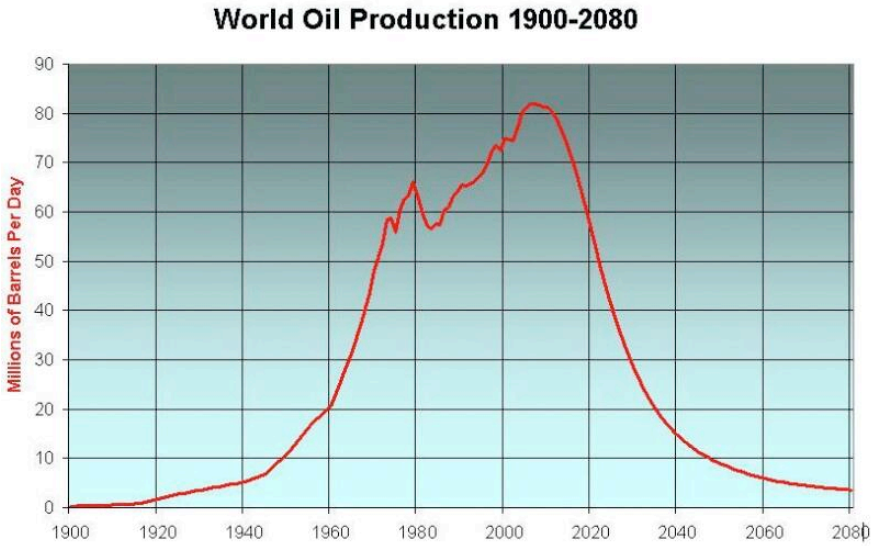


Figure 8.1d: World oil production and projection. (Source: Think Defence UK)

Grid REVolution also transforms the way electricity is stored and used to manage the grid. Grid REVolution's service lowers "peak" power production. There are traditional power generating facilities that exist to respond relatively quickly to provide grid balancing services, which Grid REVolution will partially displace. This method of power generation is more carbon intensive than baseload power (Figure 8.1b). It is especially more intensive than services provided by EV batteries, as EV charging will take place predominantly at night, during baseload power production, offset peak power by means of EV batteries will exploit the difference in carbon intensity between the two types of power generation. The result is a more stable grid producing less carbon and using less fuel.

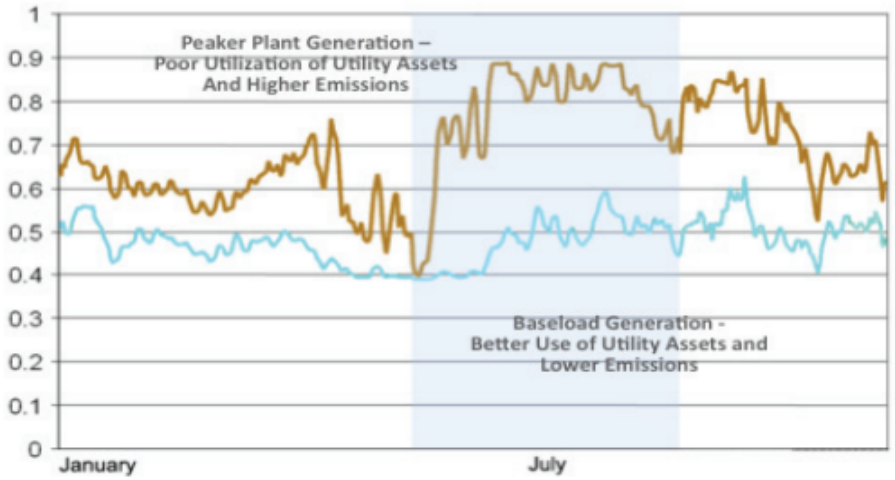


Figure 8.1b: Peak vs. off-peak CO2 emission rate (tons/MWh) (CESA, 2011)

In addition to offsetting peak power generation, the storage capacity of EVs will enable more renewable energy sources to be incorporated into the grid. Wind and solar are the most widely deployed renewable energy sources, but without available energy storage much of what is generated goes to waste. In 2010, enough wind energy to power 5 million homes was wasted because it was produced during times of insufficient demand. (Ref) EV adoption, though a greater drain on the grid, can assist in utilizing this excess capacity while also smoothing out the intermittent output inherent in renewables.

9. Financials

This section is an overview of Grid REVolution's financials. For more details on the financial forecast, see the attached spreadsheet.

9.1 Financial Overview

Profits resulting from a V2G business model will not be immediate. There are still several issues that need to be resolved that are detailed in section 5.3.2. Grid REVolution doesn't anticipate recognizing V2G revenue until Year 3. The first two years will be focused on building the technological capabilities in anticipation of the V2G market maturing. It is anticipated that the planned sales effort will capture 5% of the market for V2G services by Year 5. With each EV generating $1,400 of V2G services per year, this will lead to revenue of $54 million in Year 5.

To obtain this large market share, it is necessary to deploy substantial marketing and sales efforts. While industry standards usually allocate 10% of revenue to sales and marketing, Grid REVolution will dedicate 21% to create brand recognition and build distribution channels.

Grid REVolution will take advantage of being a software company to keep capital expenses low. New employees need a computer, desk and chair, but all of servers and offices are rented.

9.2 Revenue Assumptions

The energy markets are made up of many operators, each with its own requirements, definitions, and mix of services. The prices vary based on time of year, time of day, supply disturbances, fuel prices, demand fluctuations, and the weather. Given the attention that V2G has received, one would think that revenue models would be abundant. However in developing Grid REVolution's projections, it became apparent that his was a pioneering exercise.

A year of the California's ISO (CAISO) market data was analyzed. Many different approaches were tested in an attempt to maximize revenues while taking into consideration the charging and driving needs of the EV drivers. In the end, the approach that produced the most consistent revenue stream was a very stable one of providing simultaneous regulation up and down ancillary services. An additional benefit of this approach is the lack of battery cycling that it incurs, which results in less battery performance degradation.

This approach was also modeled at a higher level in the Electric Reliability Council of Texas (ERCOT) and the Regional Transmission Organization (PJM) markets. Due to market specifics, the CAISO market appears to be the least profitable one for a V2G business model. Grid REVolution's revenue model is based on the average of the CAISO, ERCOT, and PJM markets

resulting in a yearly per vehicle revenue potential of $1,400. This estimate is net of availability and charge/driving needs.

This $1,400 estimate was used in conjunction with our market predictions to compute the venture revenues.

The specific assumptions for the model follow:

- The GridREV EV Charge Control software will start with a 10% market share in Year 1, increasing 10% each year resulting in a 50% market share in Year 5
- For our V2G market, we expect a 1% market share in Year 3 ramping up to 5% in Year 5.
- All EVs are parked and connected an average 21 hours per day
- Connected EVs are available an average 80% of the time
- All EVs are available 365 days per year
- The average gross revenue per EV per year of $1,400 is based on the average of rates paid by system operators for simultaneous regulation up and down ancillary services.
- 50% of EV revenue is shared with the EV driver.

9.3 Profit & Loss and Breakeven

In Year 5 Grid REVolution is profitable with $5.5 million in net profits and a 10% profit margin. This is comparable to other software companies that have profit margins between 10% to 30%. Revenues per employee will be approximately $500,000 in Year 5, which is also in-line with the industry standard of $300,000 to $600,000.

Figure 9.3: Profit and Loss and break-even analysis

9.4 Capital Requirements

To fund first year operations, Grid REVolution will obtain grants and offer stock in lieu of salaries for founders with a total value of $600,000. The Series A funding will raise $3 million before the end of Year 1 and Series B will raise $5 million by the end of Year 3.

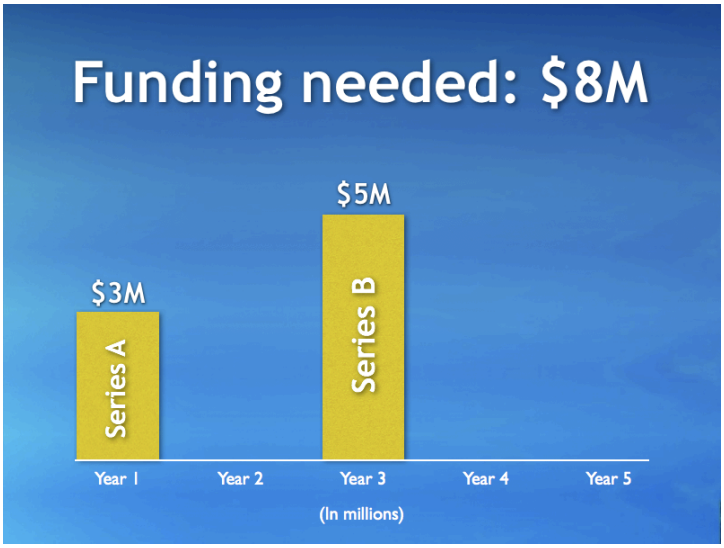


Figure 9.4: Funding needed

9.5 Economic Value-Add

The economic value add for Grid REVolution is based on a calculation of the net profit at the end of Year 5 less the average total assets over the fifth year multiplied by the weighted average cost of capital (WACC.) The WACC was determined by weighting the anticipated ownership allocated through the first two funding rounds. Seed funding is to be provided by grants and the founders, and does not factor into any WACC calculations. The first $3 million dollar funding round will require an investor internal rate of return (IRR) of 60%, while the second round of $5 million will require an IRR of 50%. This results in a WACC of roughly 54%. The other relevant numbers appear below.

Economic value add (at end of 5 years, all numbers approximate)

Cost of Tasks Revenues	$54,000,000
Gross margin	45%
Net profit	$5,500,000
Average assets at end of 5 years	$6,600,000
Weighted Average Cost of Capital	54%
Economic value add (EVA) =	$1,900,000

This is the value that will be generated in Year 5 by Grid REVolution in excess of the return required by Grid REVolution's investors.

9.6 Financial Sensitivity Analysis

The viability and profitability of Grid REVolution is dependent on a great number of factors. Many of the figures in the financial model are derived from a few key variables. Three of the most important are U.S. EV sales, Grid REVolution market share, and the percentage of revenue shared with the EV customers. Because Grid REVolution will not initiate sales until Year 3 and will not achieve significant penetration until Year 5, the sensitivity analysis focuses exclusively on Year 5 financial results.

Perhaps the single biggest factor affecting the prospects of Grid REVolution is the total accessible customer market. This is determined first by the total EVs sold in the U.S. as well as the distribution of these EVs and whether they reside in markets suitable for ancillary services operations. The former factor is the easiest to determine and the most impactful. The EV adoption estimates are based off of estimates obtained from Zpryme predicting a 36.2% yearly increase in EV sales (Zpryme, 2011). However, since EVs are a new product without historical trends and because adoption factors (such as pump prices) are in flux, actual EV sales may differ substantially from predictions. Because of this, the low and high scenarios differ substantially from the baseline estimate of 770,500 EVs sold cumulatively over 5 years. The low analysis utilizes a 50% lower estimate providing an estimate of 406,950 autos and the high analysis uses a 200% increase over baseline resulting in 1,497,600 autos. Both the low and high calculations show revenue and gross profit variances that roughly correspond to the percentage change in input variables. The net earnings results are more leveraged. The low scenario net earning estimate of -33% of baseline and indicates the venture would be operating at a loss even in year 5. On the other hand, the high has an earnings estimate of 220% over baseline.

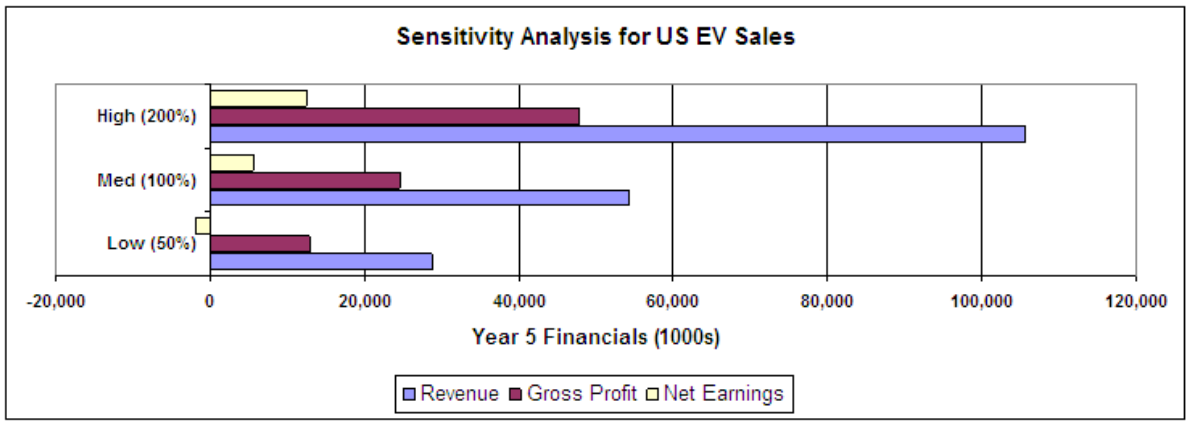


Figure 9.6a: Sensitivity analysis for US EV sales

The factor that drives gross profits more than any other is the revenue generated per EV customer. This revenue consists of gains generated by buying and selling energy at a profit in ancillary services markets. There are no reliable studies that examine this across the various markets in any great detail. In preparing this plan, data from the PJM (New York & New Jersey), ERCOT (Texas), and CAISO (California) market has been analyzed. A maximum revenue estimate was created using algorithms that attempted to optimize buying and selling a mix of Regulation Up and Down services based on price fluctuations. However, in the calculations a simpler and more conservative model has been utilized that simply averages the regulation prices across the major three markets. Accounting for EV availability and standard battery capacity this methodology resulted in a $1,400 per EV per year estimate. The low estimate for the sensitivity analysis is 75% of baseline and the high is 125%. Not surprisingly, the revenues and gross profit estimates exactly mirror the percentage changes applied to the input variable of revenue per EV. The net earnings analysis reveals that the business model is more sensitive to revenue decreases as the net earnings results are only 32% of baseline for the low and 131% of baseline for the high.

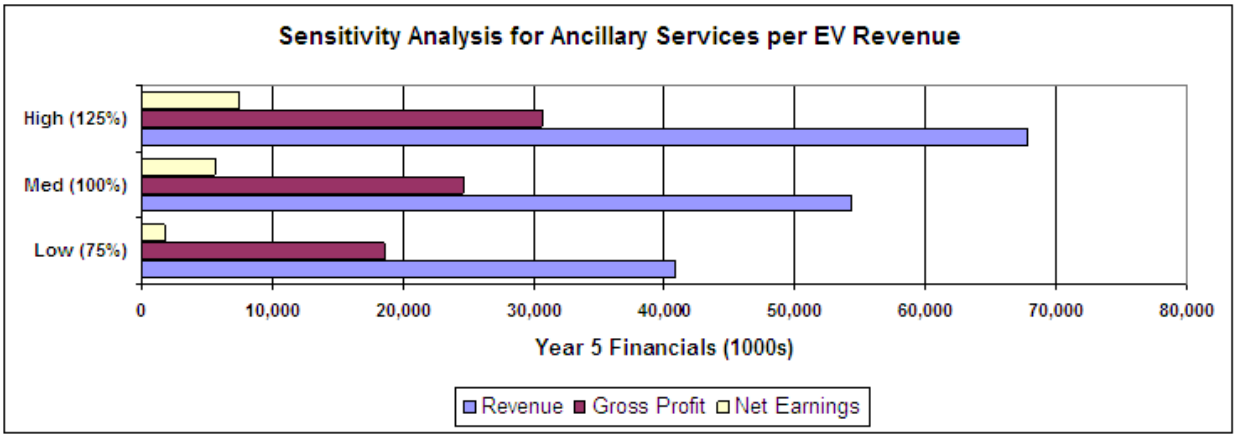


Figure 9.6b: Sensitivity analysis for AS revenue per EV

One last significant variable is the percentage of revenue that is shared with the EV customers. The amount directly affects the gross profit margin and therefore all profitability. Additionally, the incentive offered to EV customers will have an impact on the market share that Grid REVolution achieves. The exact correlation will be based on the demand elasticity of the product, which is difficult to determine. For the purpose of this sensitivity analysis we have decided to use a 50% correlation between the revenues shared with customers and changes in Grid REVolution market share. The baseline is 50% of the $1,400 gross profit resulting in a payout to EV customers of $700 per year. The low analysis increased the payout to EV customers by 25% to $875 per year, and therefore lowered the gross profit to Grid REVolution by $175. The high decreased the revenue share by 25% to $525. The results are interesting. By increasing the payout to customers, the revenue increases 112% as a result of increased market share, but the net profits fall to just 1% of the baseline. Decreasing the payout to the EV drivers causes the gross revenue to drop off to 88% of baseline, but net earnings increase to 131% of baseline.

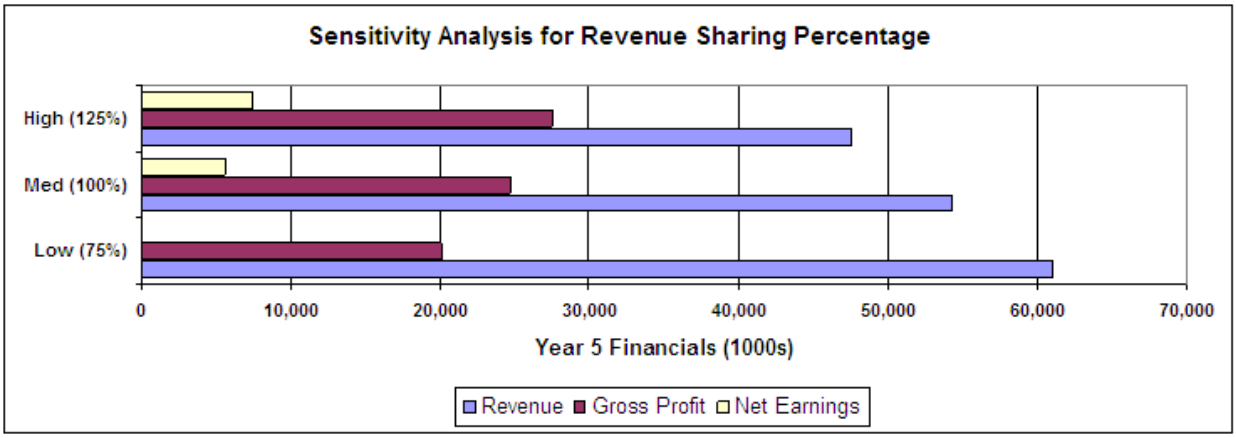


Figure 9.6c: Sensitivity analysis for revenue sharing percentage

Combining all these factors into a single low and high scenario results in a significant divergence in the prospects of Grid REVolution. The combined low variables result in revenues of 45%, gross profits of 32%, and negative net profits that are -109% of the predicted baseline. The high provides an even more dramatic scenario with revenues at 212%, gross profits at 270%, and net earnings at 403% of baseline predictions. Clearly there is significant potential in the Grid REVolution business model providing substantial risk and return.

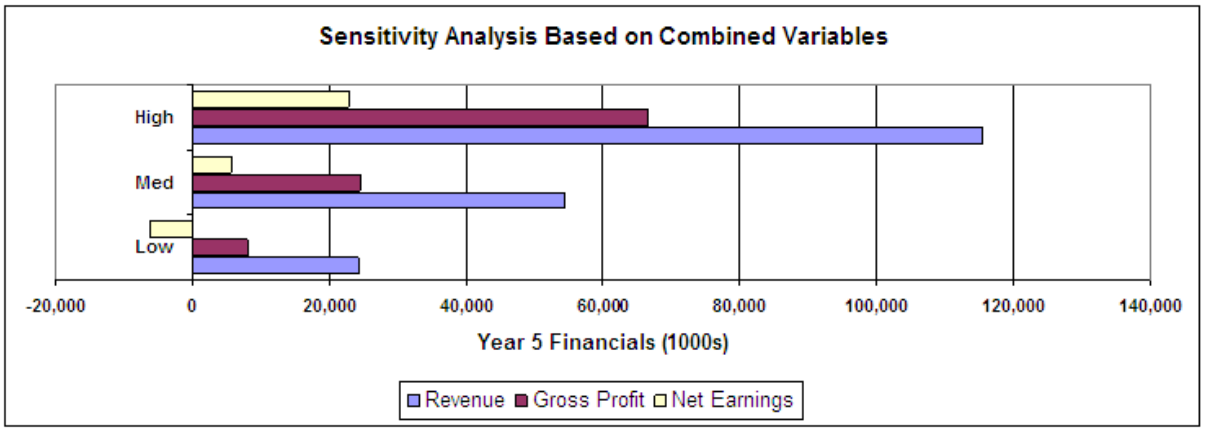


Figure 9.6c: Combined sensitivity analysis

9.7 Integrated ROI

Using a P/E ratio of 15 and net revenues of $5.5 million in Year 5, Grid REVolution will be worth about $82 million. Allocating 50% of the equity for outside investors will produce a 60% annual return for the Series A investors and 50% for the Series B.

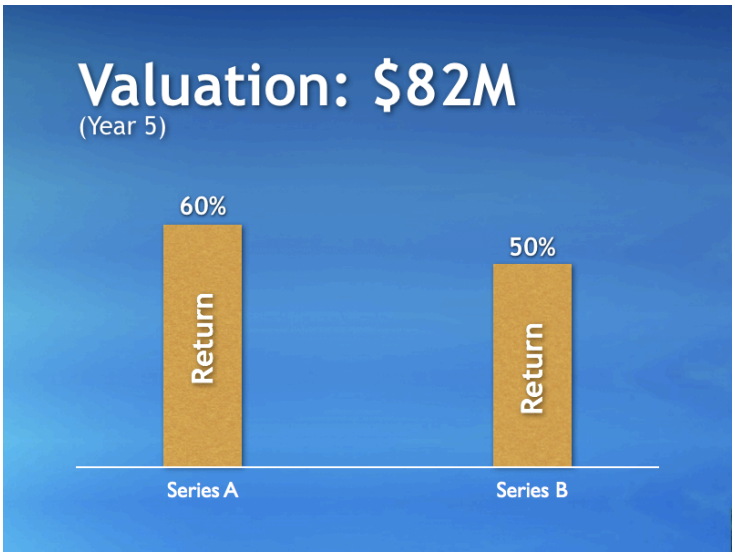


Figure 9.7: Valuation and ROI

9.8 Exit Strategy

The Grid REVolution exit strategy is to go public or be acquired. We will cultivate relationships with strategic partners that might benefit from acquiring Grid REVolution. By year 5, it is anticipated that Grid REVolution's value would generate acquisition interest and also command a significant valuation. If no appropriate acquisition opportunities present themselves Grid REVolution will investigate IPO or other liquidity event options.

10. Management & Organization

10.1 Management Team

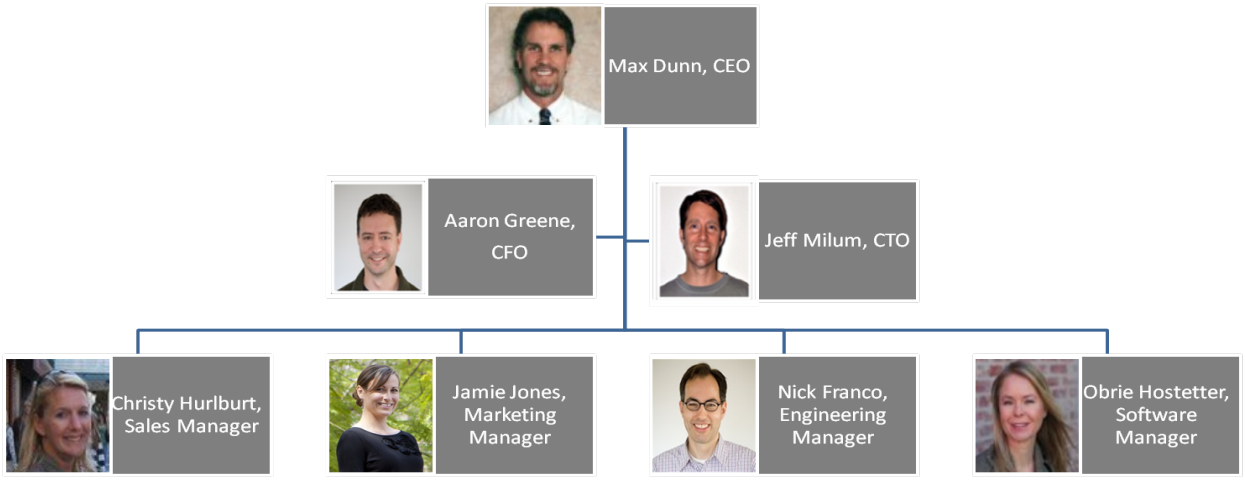


Figure 10.1: Management team

The Grid REVolution management team will consist of the seven initial founding members who bring a wealth of experience in entrepreneurship, project management, software and hardware development, and sales and marketing. These founding members will take a hands-on approach to the initial day-to-day operations of the company. The addition of personnel will focus on high-quality employees that bring a level of knowledge and experience that will help drive company growth.

Max Dunn – Chief Executive Officer

Mr. Dunn is an entrepreneur with more than 15 years experience starting, managing and selling four high-tech companies and a technologist with more than 20 years of experience managing development teams both within the U.S. and offshore. Max has been the President and CEO of three software start-ups: Micro System Designs, MaxLock, and TeamStream, and the Founder of Euclio s.r.o an offshore development company located in the Czech Republic that developed hardware and software computer security products, web utilities and Internet virtual drive technology. Mr. Dunn has a Bachelor of Computer and Information Science and an MBA from Presidio Graduate School.

Aaron Greene - Chief Financial Officer

Mr. Greene brings over 14 years of experience as the Director of Operations at Robin Materials, a supplier of specialty metals to the high tech industry. Mr. Greene holds a BS from the University of California, Santa Barbara and an MBA from Presidio Graduate School.

Jeff Milum – Chief Technical Officer

Mr. Milum is a seasoned high-tech professional dedicated to applying his experience and skills towards the cultivation of sustainable business. His career began with eight years in the Oracle sales division where he received numerous awards for over-quota achievements in sales and sales management. From there he broadened his skill sets at a number of startups in various Director level positions responsible for product launches, business development, market strategy, field marketing, and operations. Mr. Milum holds a Bachelor of Finance from Colorado State University and an MBA from Presidio Graduate School .

Christy Hurlburt – Sales Manager

Ms. Hurlburt is a dynamic technical sales and marketing leader. She lead award winning sales efforts for Agilent Technologies, Medtronic, and Solar Infra. She is experienced in strategic and tactical marketing, extensive knowledge generating and executing business plans, managing the entire sales cycle, and a proven ability to identify new business opportunities and increase sales with excellent levels of retention and customer loyalty. Ms. Hurlburt has an Electrical Engineering degree from the University of California, Berkeley; and an MBA from Presidio Graduate School.

Jamie Jones – Marketing Manager

Ms. Jones is currently the Strategic Marketing Manager at the Drucker Institute, whose mission is to better society through the promotion of effective management and responsible leadership. Prior to the Drucker Institute Ms. Jones worked for her family's custom fabrication and industrial filtration business where she worked her way up to operations manager and helped grow and then sell the business to a multinational corporation in 2005. Ms. Jones holds Bachelor Degrees in Geology and Environmental Studies from the University of California, Santa Barbara; and an MBA from Presidio Graduate School.

Nicholas Franco – Engineering Manager

Mr. Franco is an accomplished, self-motivated manager with over 10 years of environmental experience. As the Director of the National Planning, Measures and Analysis Staff at the Environmental Protection Agency in Washington, DC he was responsible for performance measurement and management systems, strategic and annual planning. Prior to joining the EPA Nick spent five years at supercomputer manufacturer Cray Research, where he oversaw the computer networks for the training department, led an award winning team that developed the company's first online documentation product, and managed a team responsible for

development and integration of online documentation, training and help products. Mr. Franco holds a Bachelor of Mathematics from Kenyon College, a Bachelor of Electrical Engineering from Washington University, a Masters of Public Affairs from the University of Minnesota, and an MBA from Presidio Graduate School.

Obrie Hostetter - Software Development Manager

Ms. Hostetter is an accomplished professional with experience in sustainable management, renewable energy, electric vehicle infrastructure, sales, marketing, policy, and contract negotiations. Proven ability to develop business strategies and plans that result in company growth. Ms. Hostetter holds a BS in Business from San Diego State University and an MBA from Presidio Graduate School.

10.2 Advisory Board – Target Members

John Katovich – President, Cutting Edge Capital

Cutting Edge Capital helps small and medium sized businesses find innovative ways to raise needed capital. John has over 30 years of experience as a securities lawyer and entrepreneur. He has experience securing both public and private financing as the general counsel for two technology startups; and as an entrepreneur John helped design the Automated Credit Exchange (the precursor to the Chicago Climate Exchange), and the iShares product to Barclays Bank.

Edward West – Founder and President of Mission Motors

Mr. West is an experienced engineer and co-founder of Mission Motors, a successful startup that is producing electric motor cycles and OEM drive trains for other electric vehicles. Mr. West's experience brings valuable experience as an entrepreneur in the electric vehicle space.

Jason Wolf – North American Vice President for Better Place

The Better Place mission is to accelerate the adoption of electric vehicles by providing services and integrated solutions that ensure EV drivers have access to energy when they need it. Mr. Wolf Jason Wolf is responsible for Better Place's operations in California, Hawaii and Ontario and developing other North American markets. Mr. Wolf connections and insight gained from working with federal, state and local governments as well as utility, business and non-governmental stakeholders will enable him to provide valuable analysis and advice.

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12. Appendices

12.1 Appendix 1: Abbreviations

AS	ancillary services
CAES	compressed air energy storage
CAISO	California Independent Service Operator
CPUC	California Public Utilities Commission
ERCOT	Electric Reliability Council of Texas
ESS	Energy storage system(s)
ESS4WE	Energy storage system(s) for wind energy
EV	Electric vehicle
GW	Gigawatt
IOU	investor owned utilities
ISO	Independent Systems Operator
kW	kilowatt
kWh	kilowatt-hour
Li-on	lithium ion
MPR	market price referent
MW	megawatt
MWh	megawatt-hour
PPA	power purchasing agreement
RE	renewable energy
RPS	renewable portfolio standard
RTO	regional transmission operator (also considered to as ISO)
V2G	vehicle to grid

12.2 Appendix 2: Value Chain Background

The idea of the value chain was introduced in Michael Porter's 1985 book *Competitive Advantage.* The value chain for a firm "is a synthesis of activities performed to design, produce, market, deliver and support its product (Kotler & Keller, 2008, p. 35)." As originally conceived by Porter the value chain was focused on production and included five primary and four support activities as outlined below.

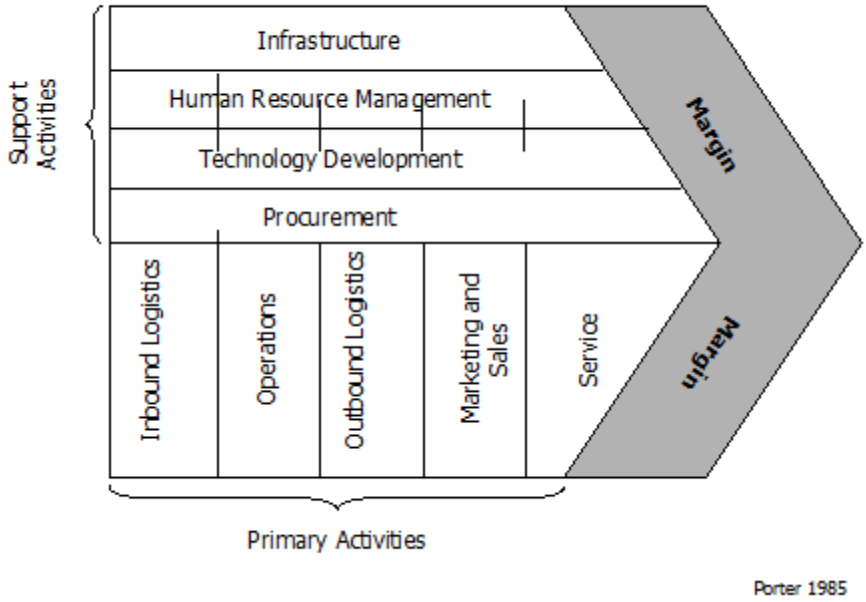

Figure 12.2: Porter value chain model
http://www.themanager.org/models/valuechain.htm

The purpose of the value chain is to show the interaction of the major processes and activities that lead to delivery of a product or service. In doing this, Porter argued it would be easier to identify the core competencies of the business, and those areas where a competitive advantage can be gained. In particular, the value chain can be used as a tool to pursue a low-cost strategy by identifying and reducing costs of major activities. It can also be used to pursue a differentiation strategy, by providing greater value through a focus on core competencies (NetMBA.com, n. d.).

12.3 Appendix 3: Financial Spreadsheet

(Please see attached financial spreadsheet)