

SYMBIOSIS INTERNATIONAL UNIVERSITY (SIU)



BUSINESS PLAN FOR ENTREPRENEURSHIP

Submitted By

Section A

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BUSINESS PLAN

ELECTRIC CHARGING STATIONS

COMPANY NAME & LOGO:



LOCATION

Bengaluru, India as it is the technology hub of India.

INTRODUCTION

Our Products and Services

Electric.ly EVC Station is a fully registered and licensed standard EVC station that is positioned in the Global electric vehicle charging stations industry in India to maximize profits. Aside from the fact that we will also engage in other complimentary services that will help us maximize profits.

These are the products and services that will be made available to our customers;

- Providing fast charging system and battery swap for electric vehicles and bikes
- Selling electric vehicle spare parts
- Providing electric vehicles repair services
- Providing wheel alignment, wheel balancing and vulcanizing services
- Retailing of groceries, snacks and soft drinks et al

Our Vision Statement

Our Vision is to operate chains of electric vehicle charging stations all across major cities in India.

Our Mission Statement

Our mission is to develop a highly successful and profitable electric vehicle charging station business with state of the art facility and latest technology; a business that will not only meet the needs of our clients but also supersede their expectations.

The Opportunity

Our economy is moving towards electric versatility, and electric vehicles have begun having an expanding offer of the multi-trillion-dollar auto division.

A basic part of the electric portability environment is the electric charging framework. Alongside the development of EV adoption, the electric vehicle charging stations market is additionally expected to grow significantly - estimates propose it will from about US\$3.2 billion of every 2017 to reach US\$ 30.4 billion by 2023, at a CAGR of over 40%.

The trend toward electric vehicles and the demand for convenient electric vehicle charging will offer appealing business opportunities for energy suppliers. Such a hectic growth will likewise result in various alluring business opportunities.

According to an Economic Times Article, setting up electric vehicle charging infrastructure in the country becomes easy with certain EV charging infrastructure policy,

1. Individual can apply to distribution companies for power connectivity
2. A separate licence won't be required under the Electricity Act of 2003.
3. State regulators to fix tariffs distribution companies can take from charging station
4. Government aims to have charging station at every 3 Km.

MARKETING PLAN

The demand for electric vehicle charging stations in India is expected to grow significantly in the coming years. Indeed, the development and operation of the necessary charging infrastructure, including a significant expansion in the capacity of the power grid, represent both a major business opportunity and challenge for **Electric.ly**.

Driven by high population density, economic vitality and an existing charging infrastructure, the shift towards electric vehicles is taking place at a faster rate in urban areas than in rural areas. This has also disproportionately increased the demand for charging infrastructure, including publicly-accessible charging stations, in urban areas.

- **Market Trends**

One of the trends in the global electric vehicle charging industry is that in the bid to stay afloat in this pretty green business, owners of electric vehicle charging stations now go the extra mile to ensure that they make their facility welcoming and conducive for customers. Electric vehicle charging stations now have vulcanizing services, car wash, convenience stores, coffee bars, snack bars, and cigar lounges within their facility so as to leverage on the opportunities around them to generate more income.

So also, it is common to find electric vehicle charging stations partnering with electric vehicle manufacturers in order to build and operate charging stations that will be of international standards. In India, it is now the practice for electric car manufacturers, charging infrastructure providers, and regional governments to enter into agreements to promote and provide public charging stations.

- **Our Target Market**

Before choosing a location for our electric vehicle charging station business, we conducted our feasibility studies and market survey and we were able to identify the location that will benefit greatly from our products and service offerings which is why we decided to settle for Bangalore – India.

Those who will benefit from our service offering are owners of electric vehicles and electric bikes and they are of course busy corporate executives, business owners, sports men and women, military men and women, households, students and government officials etc. They are the category of people that we intend marketing our electric vehicle charging station services to.

- **Our Competitive Advantage**

Before launching our electric vehicle charging station we have critically studied the market and we know that we have some form of competitive edge. Our competitive

advantage is that we have a standard – fast charging electric vehicle charging station that offers additional complementary services that will definitely help us attract and retain customers.

Another competitive advantage that we have is the vast experience of our management team. So also, the wide varieties of other complimentary services and products that we offer, and of course our excellent customer service culture will definitely count as a strong strength for the business.

One thing is certain, we will ensure that in future, we will open our electric vehicle charging stations in various cities in India and also sell our franchise. With that our brand will be well communicated and accepted nationally.

- **Marketing Strategy and Sales Strategy**

The marketing strategy for **Electric.ly** is going to be driven basically by making available standard and safe fast charging systems, excellent customer service and provision of complimentary services. We will work hard to build a loyal customer base that will help us use word of mouth publicity to get their friends and acquaintances to patronize us.

We are quite aware of how satisfied customers drive business growth especially businesses like electric vehicle charging stations which is why we will always ensure that our customer service and facility are top notch.

Over and above, our unique selling proposition is that we have various complementary service offerings such as convenience store, coffee café, snacks bar, cigar lounge, vulcanizing, wheel balancing, wheel alignment, carwash and electric vehicle repair and maintenance services.

In view of that, we are going to adopt the following strategies to ensure that we do not only attract customers but ensure that they become loyal customer; Part of the marketing and sales strategies that we will adopt are;

- Introduce our electric vehicle charging station by sending introductory letters to electric vehicle and electric bikes owners and other stakeholders both in Miami and in other cities in the State of Florida
- Open our electric vehicle charging station with a party so as to capture the attention of residents who are our first targets
- Advertise our electric vehicle charging station on national dailies, local TV and local radio station
- Promote our electric vehicle charging station online via our official website and all available social media platforms
- Hire the services of experts to make our brand the first choice in Miami and other cities where we will open our electric vehicle charging stations
- Delivering good customer experience to all our clients; making our first impression count positively
- Make use of attractive hand bills to create awareness and also to give direction to our electric vehicle charging station
- Adopt direct mailing coupon marketing approach
- Position our signage/flexi banners at strategic places
- Create a loyalty plan that will enable us reward our regular customers

OPERATIONS PLAN

The operation plan will involve focus on Location **Feasibility, technology and equipment/tools** if needed.

Charging basics

EVSE components

EVSE delivers electrical energy from the power source to the EV, and ensures that an appropriate and safe flow of electricity is supplied to the vehicle. It is the main interface between user, vehicle and utility.

Batteries

Most EVs use lithium-ion batteries for their relatively good power performance, energy storage density, rapid charge capability and long life span. The size and energy density of batteries will greatly impact the future of EV range, functionality and consumer cost. As storage capacity increases—and as battery size and weight decrease—charging times and driving distance will change according to new technology.

Charging station

The charging station acts as the point of transfer from grid to vehicle. The majority of the charging operation actually occurs inside the vehicle's on-board charger, where the conversion from alternating current (AC) to direct current (DC) takes place and the battery charge is regulated.

Connectors and cord sets

Most EVs and EVSE use the Society of Automotive Engineers (SAE) J1772 connector and receptacle that is standard for charging equipment. Standardization in this area is an on-going issue for DC fast charging.

Factors influence charging station installation costs

A number of factors influence charging station installation costs, which can often exceed the cost of the hardware itself. These factors should be considered when determining site viability and the ideal location to install the charging station on the property.

The largest factor is usually the **currently available electrical service**. If a site has to upgrade electrical service, this adds significant cost to the installation. Older or out-dated panels may need to be replaced and updated before a charger can be safely added to the system.

Identifying all electrical panels at the facility will help with planning the installation. The electrician may determine that one panel is better to work with than another, or one may offer a shorter electrical run to a good charging station location, reducing costs.

A longer distance between the electrical panel and the EV charging station means increased installation costs because it increases the amount of necessary trenching (and repair), conduit, and wire.

Although it is **desirable to minimize the distance between the electrical panel and EV charging station** as much as possible, where a charging station is located on a property can impact how it is used. For example, placing charging station parking spaces in the back of a building might discourage their use, but other customers may be upset if a charging station is installed in prime parking spaces that often remain vacant because there are few EV drivers.

AC-DC Structure

The EVSE or charging equipment can be broadly classified as AC charging and DC charging devices. The battery in the EV requires direct current (DC), which a DC charger can supply directly to the EV battery. Alternatively, an AC-DC convertor on-board the EV can convert the AC supply from the AC charger and supply DC to the EV battery.

For AC charging the vehicle should have an AC-DC convertor on-board which would add to the cost and weight of the EV. However, almost all EVs have a small size AC-DC convertor so that the EV can be charged from any AC supply. In case of AC charging, the charging speed depends on the DC output from the on-board AC-DC convertor. AC chargers with high power output are available which can fast charge the batteries depending on the battery chemistry and battery management system (BMS) in the EV.

DC Fast Chargers (DCFC) with high power output can supply DC power to the battery and can charge the EV battery much faster. DCFCs are more economical as AC-DC conversion takes place in the EVSE itself rather than inside the vehicle. When an EV is connected to the EVSE a hand-shake is established between the EV and EVSE; and the BMS in the EV takes control over the charging process.

Other Technology Features

Our stations will have **commerce features built into the station**. EV charging stations will have the ability to accept credit card and debit card payments. Thus, each station will need a credit card swipe machine as well as access to the internet to authorize payments. This will provide a key piece of differentiation.

We will also be differentiating ourselves from competitors with our **user interface design**.

These ideas are just the tip-of-the-iceberg for the business. Still in our infancy, further innovations will occur that will provide very significant differentiation from other operators in this industry. We will use technology to create a hybrid product-based and service-based business that seamlessly integrates into consumer's lives and improves it where possible.

RISK MANAGEMENT PLAN

Having recognized the market opportunities, operational what-abouts and financial implications associated with electric vehicles, we are preparing to enter the electric vehicle charging market. In connection with this endeavor, the company recently commissioned NITI Ayog guidelines to help it assess the various business sectors, to complete all strategic planning for the market entry and to acquire the relevant know-how.

We approach the project and the entire assignment by analyzing the market in close consultation with NITI Ayog, since it is a new kind of venture and the government rules and regulations are to be strictly adhered to. This work included the following tasks:

- Ascertaining and evaluating the relevant **legislative and technological developments**.
- Examining the development of general consumer **demand** and evaluating individual customer segments and their distinct needs
- Assessing the services of **competitors** on the market
- Identifying and evaluating the **market risks** and opportunities

We then sat down with the representatives to plan a multistage market entry and ascertain the most important elements relating to market presence and market development. Using their proposals, we then defined the central elements of its operational concept. Finally, we drafted a financial plan and risk analysis for the planned business activities for use in strategic units.

Closely Knit Infrastructure

For energy firms, setting up a charging infrastructure is an attractive prospect, given the lucrative market potential projected to be around 90 billion units (BU) of electricity. For comparison, India generated 1,107 BU in 2015-16.

1)Electric vehicles are also expected to help generate fresh demand for electricity —the lack of which is weighing down the entire power sector—and also help in resolving the stressed assets conundrum.

Any uptake in demand for power will help improve the financial viability of these stressed power sector projects. This in turn would improve the per capita

power consumption of around 1,200 kWh—one of the lowest among the large economies.

2)Variability surrounding future battery technology, government policies, consumer preferences, and other developments related to personal transportation markets casts a great deal of uncertainty on the long-term effects that battery electric and plug-in hybrid vehicles may have on worldwide energy consumption,

3)Despite the euphoria surrounding India's EV programme, speed bumps in the policy and corporate landscape remain. One such hindrance is that India does not have enough lithium reserves for manufacturing lithium-ion batteries. This could lead to a substantial change in the country's energy security priorities, with securing lithium supplies, a key raw material for EV batteries, becoming as important as buying oil and gas fields overseas.

While India has pledged to have an "all-electric car production effective 2030", the lack of charging infrastructure is one of the prime concerns for the Government of India (GoI) to achieve this milestone.

4)India lags behind in the availability of charging infrastructure with 353 charging stations only spread across the country. Large number of these charging stations have been set up by the manufacturers of Electric Vehicles (EV).

To reach the 2020 target as established by GoI, investments are needed for increasing the power capacity and establishment of charging infrastructure. According to the report, it is estimated that by 2020, extra power generation capacity of 150-225 MW would be required with an investment of roughly INR **750-1000** crore.

Electric Vehicle's will need to address both range anxiety and price anxiety (TCO standpoint) from a consumer acceptance standpoint. Range Anxiety will be addressed by having a good network of charging infrastructure whereas price anxiety would be addressed by product innovation as well as subsidies in the short term to push greater adoption.

Penetration of EVs

For deeper penetration and sustainable development of EVs, two and three-wheeler play a major role. India being the largest two-wheeler market, infrastructural investments seem the only way forward for achieving the same. An additional energy generation would be required to be increased by 10-15 MW requiring a potential investments of INR 50-75 crore to set up approx. 15,000 charging terminals.

Globally, the adoption of EVs looks promising. Combination of action points agreed upon in Paris Declaration, regulatory pressure with countries planning to go fully electric (Norway by 2025) and technological breakthroughs in battery costs, solar power, etc., is making the EV disruption more real than its current footprint of just 1.2 per cent of global automotive sales.

Several policies are being implemented by various countries to curb harmful vehicle emissions and control global warming. Such policies fuel the demand for Hybrid Electric Vehicles as these can reduce CO2 emissions considerably. GoI is also taking steps in this direction. We hope that deliberations at today's conference by the policy makers, leading automotive players, institutions, and technology experts will help the industry in aligning its efforts for adoption of environment-friendly technologies.

Plans to mitigate the risk.

An effective charging infrastructure is required which takes care of 'range anxiety,' and the necessary regulations around creating the ecosystem for electrical vehicles to operate smoothly.

Another issue is whether to go for AC (alternating current) or DC (direct current) chargers. While an AC charger takes around six hours to charge an EV, DC chargers are faster and take around 40 minutes to one hour to fully charge a vehicle.

Also as per the regulations for electricity sales in the country, under The Electricity Act, 2003, a distribution license is required to distribute power from respective state electricity regulatory commissions (SERCs). Given the number of regulators involved, it makes sense for a Pan-India license but that would

require a lot of heavy lifting including a comprehensive review of existing laws and regulations.

There are certain regulatory pieces which needs to be fine-tuned and the biggest one according to me is the fact that today as per the CERC (Central Electricity Regulatory Commission) regulations it is only a distribution licensee that can sell power.

So, right now you have distribution networks which are owned by the discoms (distribution companies) primarily. In some cities, it is privately owned and you would need some sort of a protocol to establish how a private player can come in and be involved in that.

According to the norms under preparation, government and private institutions that set up charging stations for captive use need not possess an electricity retailing license

The government is conscious of the uphill task and is setting in place liberal rules for charging stations to power electric vehicles. According to the norms under preparation, government and private institutions that set up charging stations for captive use need not possess an electricity retailing license.

Another related risk is that of EV charging leading to a surge in electricity demand which in turn may put at risk India's already stretched electricity distribution networks. "So what you will have to do which is known as 'managed charging'. So, in certain hours even if you want to charge you can't charge or you will be able to do the charging in limited areas.

The utility, which distributes electricity in North Delhi, plans to invest Rs100 crore to set up 1,000 charging stations by in the next five years .

This calls for careful planning in the backdrop of India's worst blackout that left nearly 620 million people across 19 states and three Union territories without electricity for hours together in July and August of 2012.

FINANCIAL PLAN

Assumption

S:-

1. 20 hours of charging operations for 25 days/month (300 days x 20 hours = 6000 hours maximum Capacity).
2. Capacity Utilization Factor (CUF) of EVCS setup considered at 10% for Year-1, 20% for Year-2, 35% for Year-3, 55% for Year-4 and 80% for Year-5.
3. Electricity tariff to the DISCOM is considered as pass through and no minimum monthly charges considered
4. A margin of Rs 2 on electricity tariff is considered in Scenario-A and Rs 3 is considered in Scenario-B.
5. Payment Gateway charges (2-3%) is considered to be added to the EV customer bill.

USES OF FUNDS

S.No.	Description	Y1	Y2	Y3	Y4	Y5
1	Port Development					
		200000	50000	50000	50000	50000
	Chargers	500000	250000	250000	250000	250000
2	Research and Development	0	0	0	0	0
3	Working Capital	250000	250000	250000	250000	250000
4	Rent	600000	600000	600000	600000	600000
5	Salaries	125000	125000	125000	125000	125000
6	Advertisements & Promotions	60000	60000	60000	60000	60000
7	Sales & Distributions	0	0	0	0	0
	Total	1735000	1335000	1335000	1335000	1335000

SOURCES OF FUNDS

S.No.	Description	Y1	Y2	Y3	Y4	Y5
1	Bootstrapping	500000	0	0	0	0

2	Friends and Family	250000	0	0	0	0
3	Small Business Loans	0	500000	800000	800000	800000
4	Angel Investors	300000	0	0	0	0
5	Venture Capital Investors	200000	0	0	0	0
6	Crowdfunding	0	0	0	0	0
7	Small Business Grants	0	300000	400000	200000	200000
8	Local Contests	100000	0	0	0	0
9	Incubator	300000	0	0	0	0
10	Revenue	400000	600000	800000	1050000	1200000
	Total	2050000	1400000	2000000	2050000	2200000

INCOME STATEMENT						
S.No.	Description	Amount				
		Y1	Y2	Y3	Y4	Y5
1	Revenue	400000	600000	800000	1050000	1200000
2	COGS	700000	300000	300000	300000	300000
3	Selling & Administrative expenses	125000	125000	125000	125000	125000
4	Other Income	1650000	800000	1200000	1000000	1000000
5	Operating Profit	1225000	975000	1575000	1625000	1775000
6	Interest	0	0	500000	500000	500000
7	EBT	1225000	975000	1075000	1125000	1275000
8	Taxes	416500	331500	365500	382500	433500
9	EAT	808500	643500	709500	742500	841500

BALANCE SHEET

S. No.	PARTICULARS	Y1	Y2	Y3	Y4	Y5
1	Equity & Liabilities					
1.1	Shareholders' Funds					
1.1 a)	Share Capital	750000	750000	750000	750000	750000
1.1 b)	Reserves & Surplus	0	808500	643500	709500	742500
1.2	Current Liabilities					
1.2 a)	Trade Payables	750000	800000	1200000	1000000	1000000
1.2 b)	Other Current Liabilities	1330000	0	807320	1086520	1286520
	Total	2830000	2358500	3400820	3546020	3779020
2	Assets					
2.1	Non-Current Assets					
2.1 a)	Fixed Assets					
a. i)	Tangible Assets	200000	50000	50000	50000	50000
a. ii)	Intangible Assets	500000	250000	250000	250000	250000
2.1 Long term Loans		0	500000	800000	800000	800000
2.2	Current Assets					
2.2 a)	Cash	2050000	900000	1200000	1250000	1400000
2.2 b)	Other Current Assets	0	32600			
	Total	2750000	1732600	2300000	2350000	2500000

CASH FLOW ANALYSIS

Year	0	1	2	3	4	5
CashFlow	-1010000	775000	125000	725000	775000	1175000
NPV	\$1,091,149.80			IRR	35%	

Cost Estimation:-

Type of Charger	Number of Chargers in the EVC Station	Power Input	Power Output	Approx Cost including GST @ 18%	Number of Evs that can be charged simultaneously	Maximum Power sold to Evs per day(20hrs/day assumed)kwh
CAPEX						
Bharat Charger	1	3 Phase ; 415 Volt	3 x 3.3 kW	70,000	3	198
AC Charger	1	3 Phase ; 415 Volt	7.2 kW	75,000	1	144
DC Fast Charger	1	3 Phase, 415 Volt	25 kW	700,000	1	500
New Electricity Connection meters), Panels, Breakers, Energy Meter etc.				200,000		
Civil Works (Flooring, Boards, Painting, Branding, Shed/Cover etc.				75,000		
EVCS Management Software – Integration with Chargers and Payment Gateway				25,000		
CCTV Camera System				25,000		
Total Capex				1,170,000		842
OPEX						
Technicians (one technician @25k/month considered				150,000		

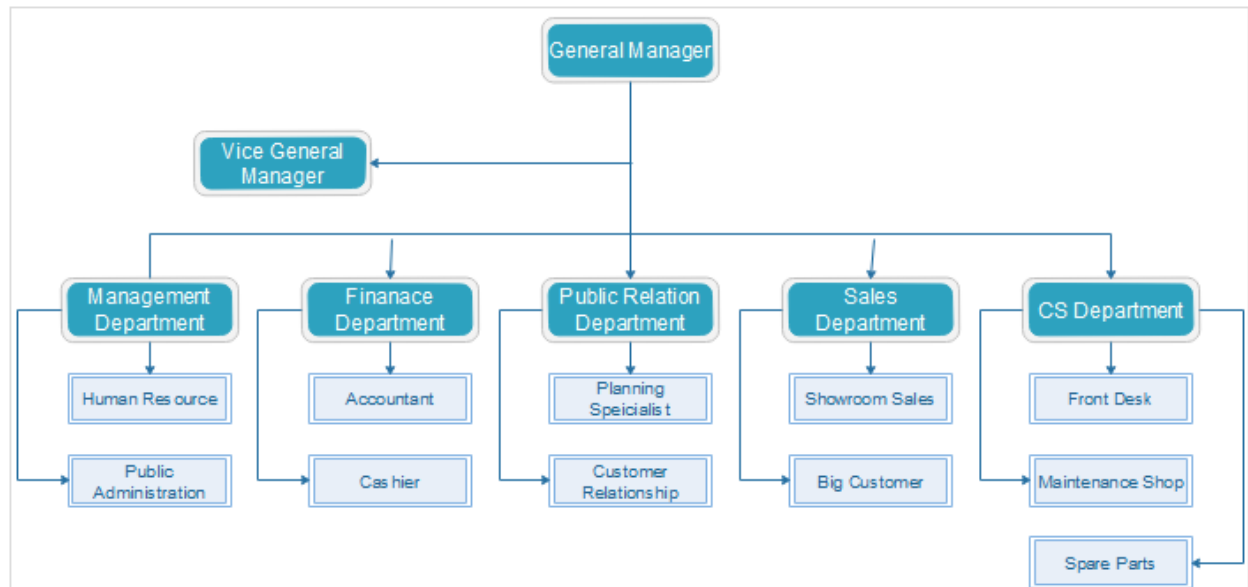
for first 6 months					
Server and Storage Fee per Year (on public cloud)			5,000		
Payment Gateway Fee (2-3% of total money collected)				Pass through to customer is considered	
Advertising (@5000/month)			60,000		
Total Opex			Year 1	215,000	
			Year 2 onwards	65,000	

Revenue Estimate:-

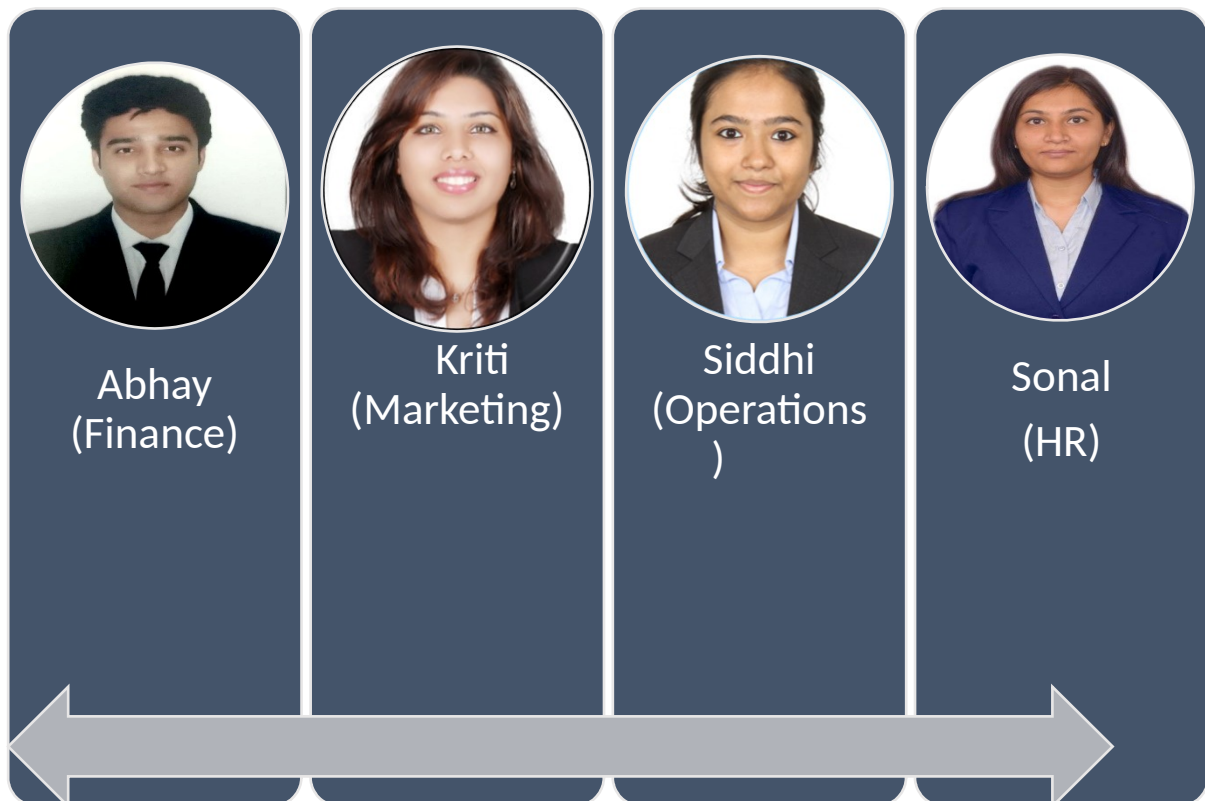
Description	YEAR-1	YEAR-2	YEAR-3	YEAR-4	YEAR-5	Total in 5
	10% CUF	20% CUF	35% CUF	55% CUF	80% CUF	Years
Electricity Sold to EVs/Year (kWh): 842 kWh per day maximum x 300 days per year considered as 100 % CUF	25,260	50,520	88,410	138,930	202,080	505200
Estimated Revenue						
SCEANRIO-A: Margin of Rs. 2 on electricity tariff	50,520	101,040	176,820	277,860	404,160	10,10,400
SCENARIO-B: Margin of Rs 3 on electricity tariff	75,780	151,560	265,230	416,790	606,240	15,15,600
Opex from Table-4	215,000	65,000	65,000	65,000	65,000	475,000
Revenue): Scenario-A						

Total Opex Scenario-A						576,040
Revenue): Scenario-B						
Total Opex Scenario-B						626,560
Net Revenue: Scenario-A						434,360
Net Revenue: Scenario-B						889,040

Organizational Structure



At our core, we have a leading team that has operated at the **forefront in various B-Plans.**



PROPOSAL
ASK & OFFER

- After 5 years the Present Value of the company comes out to around Rs.1100.000 lakhs
- Taking into account the investment of Rs.10 lakhs in the first year and then smaller investments in the subsequent years.
- Amount of around Rs.4 lakhs will be funded by Angel Investors.
- Since a major part of it is needed in the first year itself, we are ready to offer a stake of up to 35% in the company.

EXIT STRATEGY

- We as owners, will exit this endeavour after we have created a flourishing business that could be sold for a substantial profit and/or as a franchise that could serve urban communities across the country. It is our intention to run this business until we are ready to retire or have decided to sell the business and start another.
- In the event the proposed plan is not successful we will implement necessary measures to exit the business endeavour with minimal damage to the investors. All equipment and merchandise will be sold to cover any outstanding debts.
- Any remaining debt will be paid by the owners in the form of monthly payments until all debts are paid in full.
- Definitions of "successful" and time limits for achieving milestones have been included in the owners' partnership agreement.
- The success of the business will be monitored monthly in the first year and quarterly in subsequent years. We are aware that it usually takes new businesses three years to start turning a profit and that the business could operate at a loss during that time.
- We will keep this in mind when evaluating the state of the business, and make adjustments when possible to keep the business running with a positive cash flow.
- Acceptable loss has been determined; if the business exceeds this amount and is unable to compensate us owners, we will begin the process of closing the business and paying back debt.

