

SOLAR ENERGY

EXECUTIVE SUMMARY

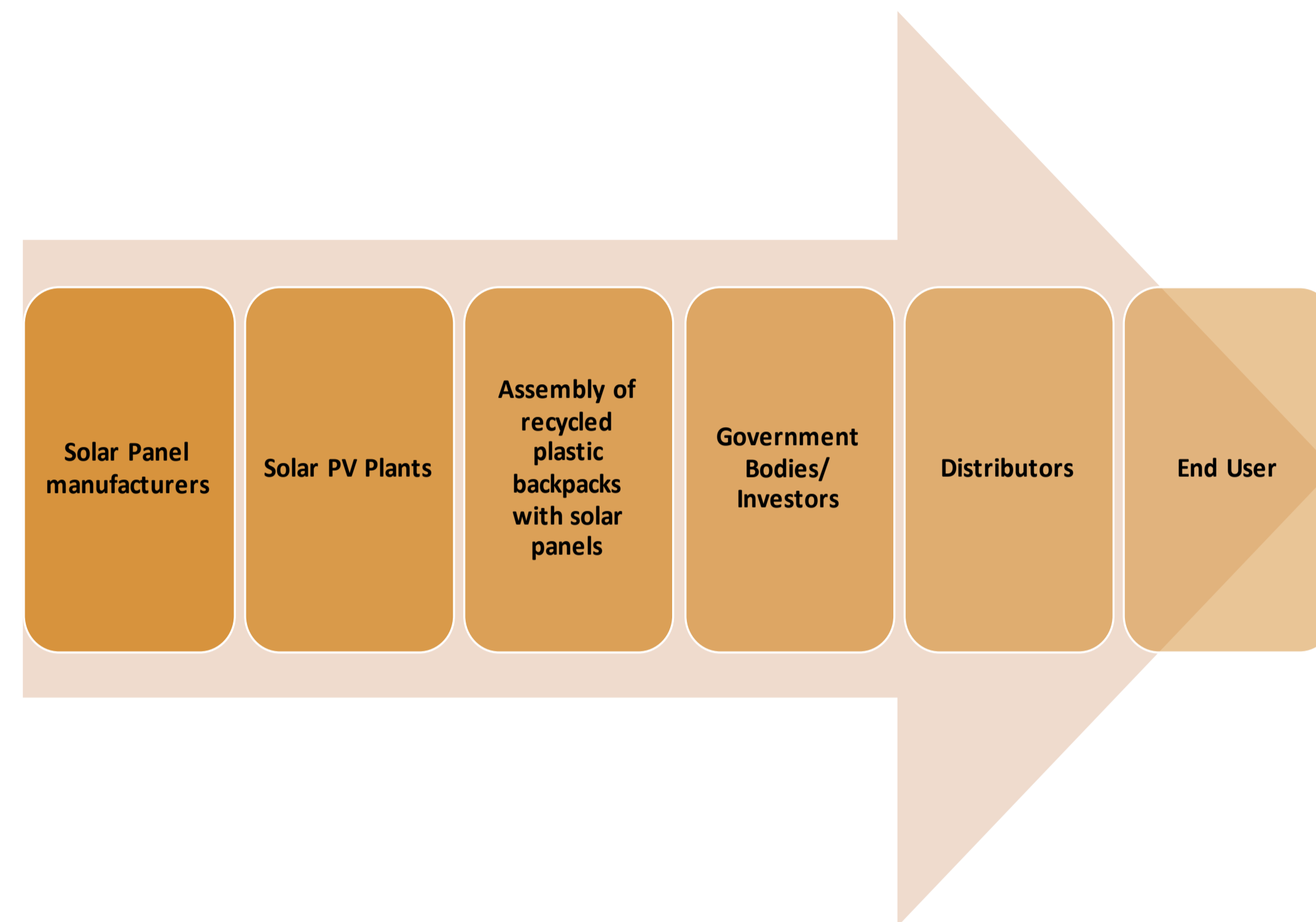
In a country like India, where 70% population resides in rural areas which forms major chunk of the residents, are still living without electricity. According to the current rural electrification policy, a village is declared electrified if 10 percent of its households have electric power. Renewable energy source such as solar has emerged as potential alternatives which could address these concerns. As opposed to fossil fuels, which draw on finite resources that may eventually become too expensive to retrieve, renewable energy sources are generally unlimited in availability. The average intensity of solar radiation received on India is 200 MW/km. However, 87.5% of the land is used for agriculture, forests, fallow lands, etc., 6.7% for housing, industry, etc., and 5.8% is either barren, snow bound, or generally inhabitable. Thus, only 12.5% of the land area amounting to 0.413 million km square can, in theory, be used for solar energy installations. The cost of powering an average Indian household with solar panels is between 1.2-1.8 Lakhs INR which generates about 1KW of energy.

In India, where basic primary education is still a farfetched dream, necessities go for a toss. Kids in rural areas still struggle for significant basics like books, bags, hygiene and most importantly electricity. Our backpacks have been built to serve this gap. Solexxa backpacks are the repurpose school bags manufactured from recycled plastics bags and thin solar panels which would help them to generate electricity for a short period of time. It's a step towards an eco-friendly educated world.

To understand target customer on broader level, we identified 6 lakh of villages in India out of which 15,183 villages are un-electrified that comprised of 3 million homes. The average number of children in rural India is 1.8 that sums down to 5.4 million kids in these un-electrified villages

Local governments play a key role in spreading awareness about solar power and accelerating its adoption amongst the rural population. Here, we're proposing that there shall be a municipal financing mechanism in which the recipients would receive 100% financing for Solexxa backpacks from the local government. The customer doesn't need to pay the purchasing amount, instead pay the usage amount for the electricity that they are using through their monthly electricity bills over a certain period. The local government raises fund through issuing a bond at a low interest rate. It then passes on the proceeds raised by the bond to a solar developer in exchange for an attractive lease-purchase agreement. The solar developer will then design, build, own, assemble and sell the backpacks produced to the local government. The advantages of this business model are: Low-cost capital through the issue of municipal bond, longer repayment method, no upfront cost.

VALUE CHAIN ANALYSIS



OPERATIONAL VALUE CHAIN

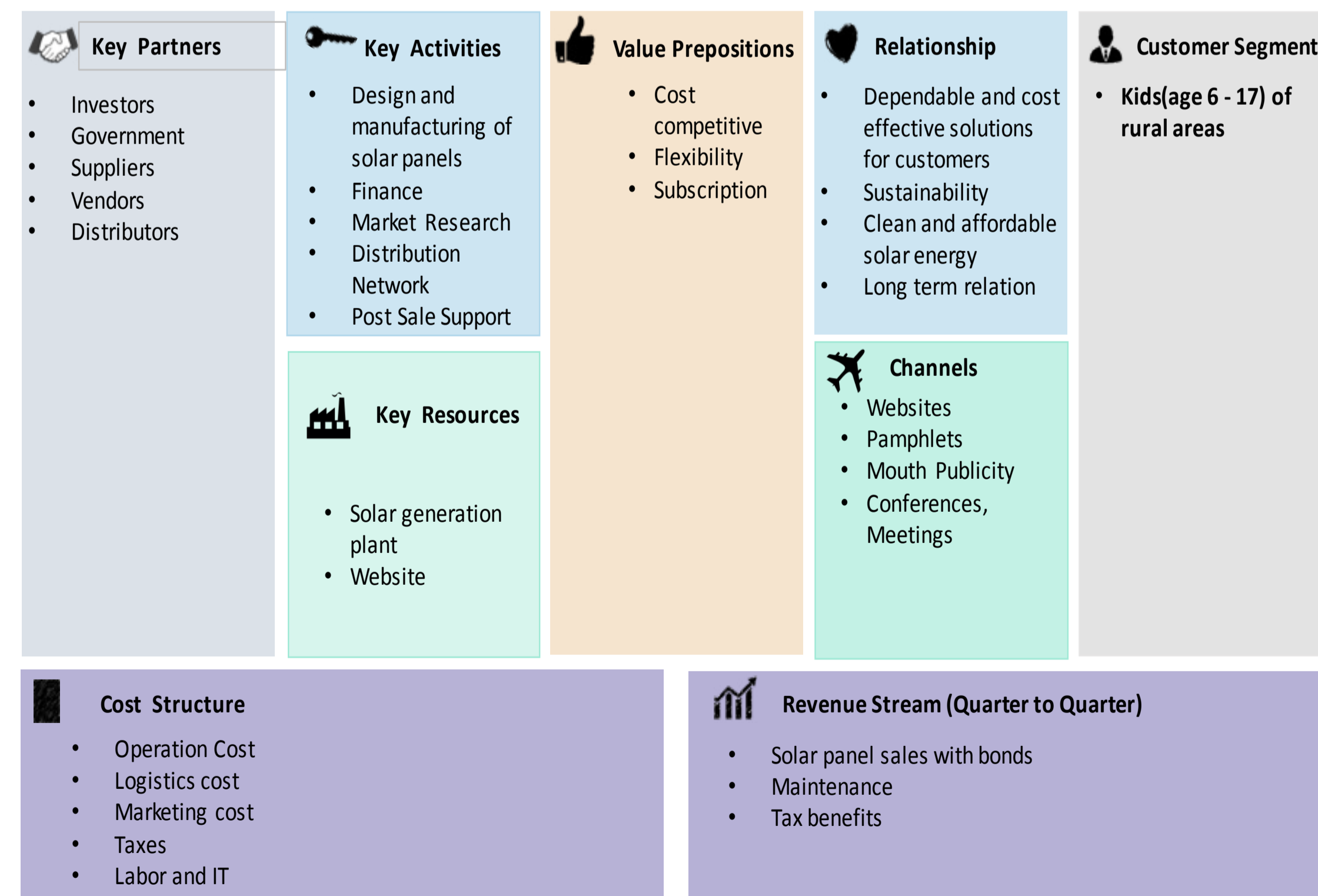
Value chain analysis of Solexxa backpacks would be similar to normal solar panel installations. The end customer shall approach the Local municipal body for the purchase of bag. These bags would be provided by the third-party vendors who are appointed by the manufacturers and are responsible for the distribution and after-sales service. These manufacturers would be provided capital by the Government for the manufacturing of PV panels and assembly of bags made from recycled plastic. The end customer doesn't need to pay for the backpack instead he just needs to pay monthly for the usage of electricity.

BMC MODEL

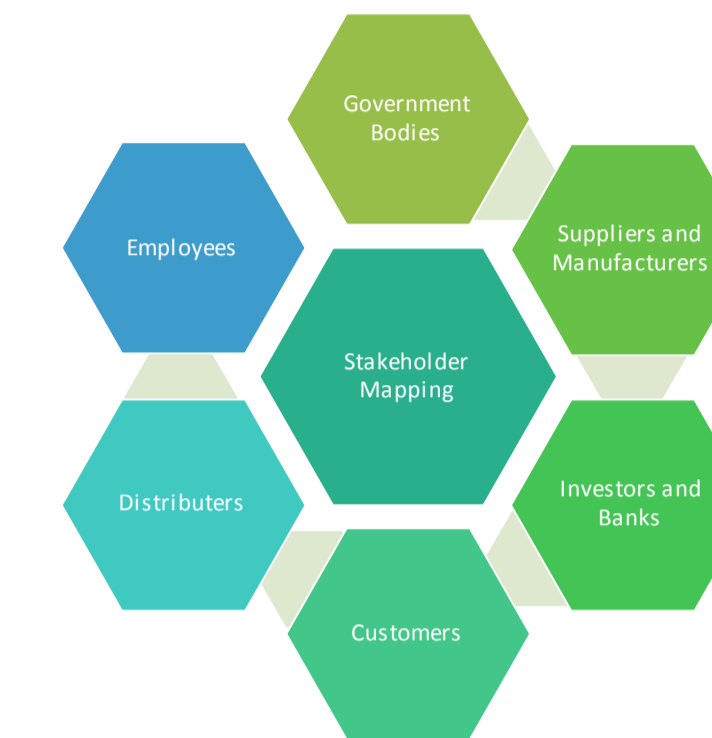
The target customers for our product is kids of rural areas who do not have access to bags, books and moreover electricity.

Through this model we want to bridge two gaps:

One, to provide some kind of electricity in completely dark regions and even in areas where there isn't enough electricity as major villages are termed into electrified zones but the power supply might be only 6 hrs a day. And second, is to make more kids of our country literate. Also our value proposition of this model is that, it is inexpensive where the mass of rural population can actually purchase it. Our major source of income will be the sale of solar panels attached to backpacks and major cost involved are the solar panel purchase integrated with recycled plastic backpack.



STAKEHOLDER MAPPING

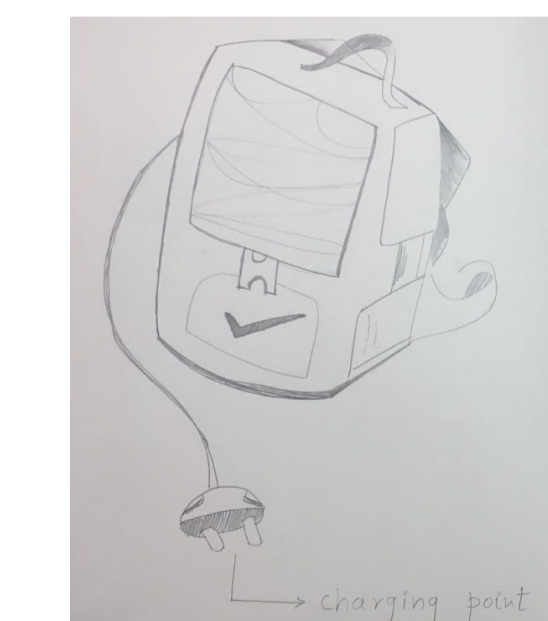


IDEATION

The Idea: Solexxa Backpacks

Solexxa Backpacks ranging from rs. 500 -1000 having 5W Solar Panel attached to the backpack which on days charge will give back 5w power wherein if attached to a lamp it will deliver light for approximately 3 hours. These backpacks will not just provide electricity to household and kids but motivate and help them study thereby educating more kids. This will also help in spreading awareness thus helping India become greener.

PROTOTYPE



Where does the idea fit into the competitive landscape?

Market is said to grow tremendously in coming years as government itself has been taking many initiatives. Currently where India has only 23.12 GW of solar energy produced, government is planning to produce 100 GW of solar energy by 2022.

How will our idea scale?

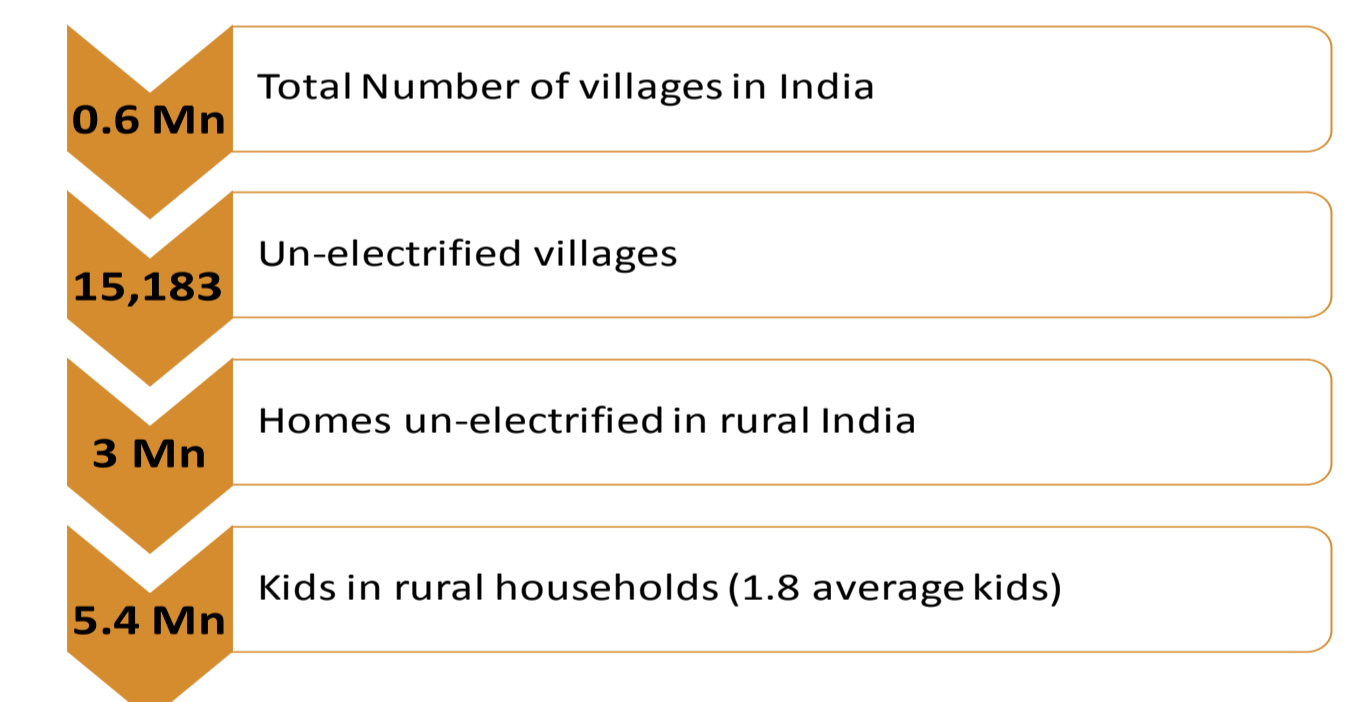
With our model we will spread the awareness especially in the areas where this is no or scarce electricity. With our product we are trying to solve 2 problems:
1. Providing light with minimal cost
2. Increase literacy rate

NEED ANALYSIS

- 1) To achieve the forecasted Solar capacity of 100GW by 2022, India still lags by 76.88GW as per MNRE in July 2018. This led to the basic need identification – The awareness of alternate electricity sources amongst masses where it is most needed.
- 2) Initial High capital cost of installation which is not affordable by many

TARGET CUSTOMERS

Government has been taking lot of initiatives to increase solar power in our country. The aim is to have about 100GW solar power energy generation where today it is only 4.22GW. One of the major reasons it is taking time is due to unawareness among the people especially in rural areas. So our target in rural population, majorly the kids of rural population. This will give boost to our industry thus targeting manufacturers as well.



BENEFITS

Cost Competitive	Flexibility	Time consumed is less	Environment friendly
• Compared to the huge infrastructure cost involved this is an inexpensive	• Usually when solar installations to be done it has to have aesthetic checks in-place like if the roof has enough space and is sturdy enough	• As compared to installations of electricity or solar plants it is a huge process involving various activities whereas this is a simple process	• As it a renewable source of energy it does no harm to our environment making our society green

Group Members

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