



Vigyan Ashram
Startup Saarthi

Business Plan
Solar Energy Services

Supported By



विज्ञान एवं
प्रौद्योगिकी मंत्रालय
MINISTRY OF
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सत्यमेव जयते



Industrial Overview

About Product/Service



- Solar Energy systems convert sun's radiation into electrical energy. It can be stored in a battery (Off- Grid) or can be fed back to the grid (Grid Connected)
- With the ever increasing demand of electricity, the pressure on existing power infra is increasing & it is not sufficient to meet the demands of every citizen
- Solar energy systems provide an efficient way to get 24*7 uninterrupted power supply even in the most remote part of the country.
- The govt has set ambitious targets of solar energy capacity addition & thus provides enough subsidies as well to encourage common people

Challenges & Competitors Analysis

- There is not much competition in the business of providing solar consultancy services as the awareness in people is quite low & people think it to be extremely expensive as compared to power supply from regular grid
- The challenge is to make people understand the long term benefits of installing solar panels.
- It provides the customer with self sufficiency & reduces dependency on the govt regulated grid which are extremely erratic & unreliable.
- Solar Energy is extremely dilute form of energy & requires large space
- Solar Energy depends on the amount of solar irradiation & if the region does not get sufficient sun light then project may not be financially viable
- Solar energy plant installation required highly skilled technicians to decide the location, orientation , tilt of solar modules & output may decrease if these are not optimum
- Panels require timely cleaning & shadow free space for maximum output

Future Potential



- The govt encourages & is laying a lot of emphasis on the adoption of solar power plants
- A lot of R&D is going on for the equipments required for installing a plant
- The prices of solar panel have reduced in the last 1 decade.
- Govt has launched PLI schemes to encourage the production of modules in India & reduce the dependency on China for the import of modules that will further reduce the cost of solar modules.
- The efficiency of panels has led to a reduction in the space required for setting up a solar plant.



Value Chain of Business

Below is the journey map for the entrepreneur for all the process that are involved in the consultancy business. The processes involved may vary depending on the size of business, items dealt with, specific requirements of the stakeholders involved





Target Consumer & Marketing Plan

Target Consumer/Market

- The target audience for this business will be residential buildings, shops, public & private institutes
- In rural areas, farmers can be encouraged to use solar pumps for irrigation which can provide access to huge market
- In the urban areas, apart from these, large institutes & industries, factories, residential complexes etc. with wide roof area can be potential customers

Marketing Plan

Product

- Delivering the service of end to end installation of roof top solar panel to domestic, commercial, industrial clients.
- Procuring the equipments as per site requirement & installing them on the site.
- Getting safety approvals from all the necessary organisation & then finally applying for subsidy.

Price

- Price the products competitively, taking into account the purchasing power & paying capacity of the rural/urban customer base.
- Huge margins may not be possible to due price sensitivity of the public
- Value based pricing may be used considering the returns earned in the long term from the respite of freedom from paying high & ever increasing power bills

Place

- Awareness has to be created in the prospective clients through online marketing.
- Sales can be done through social media, e-mails, phone calls or direct interaction with huge clients
- Social media platform like Instagram, IndaiMart, Urban Clap need to be leveraged in the urban areas for leads
- In rural areas, word of mouth marketing may be leveraged

Promotion

- Big boards outside farm & in different parts of the village mentioning all the benefits of eggs & ethical treatment of hens will also be helpful.
- Face to face visits & interactions and building relations specially for B2B sales
- Word-of-mouth marketing in villages is majorly suggested in initial phase of business.



Equipments to be Installed



Panels & structure are to be installed as per site & client requirement. Different types of Modules are available like monocrystalline, polycrystalline. Height of iron structure can be 3' to 6' depending upon the obstacle present in the vicinity



Inverters are needed to convert the DC output of the panel to the AC which can then be used by the owner or can be fed in the grid. Efficiency of inverter is critical as inefficient ones may damage the load equipments
Inverter can be string or central inverter



Battery & Battery charger are required for off grid systems. The excess energy generated is stored in the battery for use at a later time. Battery charger is required to control the energy being fed to the battery to avoid any over charging of the battery



Financial Calculations

Initial Investment Calculation

Initial Investment	Cost
Office Premise Purchase	500000
Tools for installation work	50000
Batteries, Invertors for office demos	30000
Total	580000

Operational Cost Calculation

Fix Cost	Cost
Labour	20000
Office expenses	5000
EMI	10000
Total	35000

Operational Cost	
Modules @ 20/W	60000
Invertor, 3KW	30000
Switch Board	5000
Energy Meter	6500
Cables @35/mtr	5000
Iron Structure @Rs 70/kg	12000
Total	118500
Subsidy	30000
Net cost	88500

Revenue Calculation

Assuming a payback period of 4.5 years for the client with earlier monthly bill of 2000/month	
Annual Power Bill	=12*2000 = 24000
Power Bill for 4.5 year	= 4.5*24000=108000
Bid to the client by the vendor	= 108000

Revenue earned by the vendor = Rs 1,08,000 from every job done.



Financial Calculations

The business must sell minimum of 2 job per month to remain at no profit no loss situation

Break-Even Calculation

Fixed Cost	35000
Operational Cost for 2 jobs after subsidy	88500
Revenue	108000
Contribution Margin	19500
Break Even Sales	1.79
BreakEven Days	26.92
Profit Per Month	4000
Annual Profit	48000

Cash Flow Analysis

	Initial Investment	Fix Cost	Variable cost	EMI	Revenue	Profit
Year 0	-80000					
Year 1		-300000	-2124000	-120000	2592000	48000
Year 2		-300000	-2124000	-120000	2592000	48000
Year 3		-300000	-2124000	-120000	2592000	48000
Year 4		-300000	-2124000	-120000	2592000	48000
Year 5		-300000	-2124000	-120000	2592000	48000
Year 6		-300000	-2124000	0	2592000	168000
Year 7		-300000	-2124000	0	2592000	168000

Payback period calculation

Initial Investment	80000
Profit Per month	4000
Months required to recover initial investment	20
Return on Investment would be	5 %

Assumptions:

- 1kW requires 100sq. ft shadow free space
2. Average monthly generation= 116 unit/kw
3. Domestic Connection with load requirement of 3KW
4. Loan = 500000 for 5 years at 8%
5. Assuming 2 Jobs per month



Sources of Funding & Government Support Available

Legal requirements

- Initially Company registration is required along with MSME, GST, Udyam Aadhaar number & PAN card for business
- On later stage further electrical safety licensing is required but at start no major licenses are required.

Government Support available (Major Schemes available)

- Pradhan Mantri MUDRA Yojana (PMMY)
- Stand Up India Scheme
- National Bank for Agriculture and Rural Development (NABARD)
- Credit Guarantee Scheme (CGS)
- Coir Udyami Yojana
- Special provisions for loans to women entrepreneurs e.g Udyogini

Funding Sources

- Self-Financed
- Loan available from Family and Friends
- Loan from local banks like Co-operative Banks, SHGs
- Loan under various Govt Schemes

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Support from Vigyan Ashram & Testimonials

How Vigyan Ashram will help you in taking your business to new heights...

- Guidance & Evaluation of business opportunities

- Developing Business Plan

- Technical training on Rural Technology

- Entrepreneurship Development Training program

- Field Support and Hand-holding of one business cycle for the success of our entrepreneurs

- Assisting in Sales & Marketing in both Online and Offline model

- Provide linkage with finance institution

- Licensing and Company Registration

- Market Linkages and connections to Vigyan Ashram Alumni in similar business

Testimonials from similar businesses supported by Vigyan Ashram