



Proposal For Solar Project Funding

Nutan Bal Shikshan Sangh, Kosbad

This document gives the description of the intended requirements of funds for Solar based Electricity generation to mitigate the problem of frequent power outages especially during monsoon and summer seasons and to reduce the Operating Cost of the Nutan Bal Shikshan Sangh at Kosbad Hill, Dahanu.

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2 About Nutan Bal Shikshan Sangh

Nutan Bal Shikshan Sangh (NBSS) was formed in 1926 by Padma Vibhushan Tarabai Modak, with the objective of introducing and implementing Pre-primary schooling in India.

Madam Montessori's idea of informal education i.e. joyful learning reached India in 1914, and in 1915 the very first Montessori school was established in the princely state of Gujarat by Gijubhai Badheka. Tarabai Modak soon joined him and helped set up the first Indianised version of Montessori's informal way of education.

The cost of the preschool education was high as Montessori way was an elaborate equipment based education. Tarabai Modak wanted to bring the cost of pre school education as low as she could so that education would have far and wide reach. With this objective, Tarabai Modak took the bold and path breaking decision to set up NBSS at Kosbad Hill so that the rural and tribal children of that area could be benefited.

During Tarabai's transition from Mumbai to Kosbad she met Anutai Wagh in 1945 who offered her services and both of them worked hard, tirelessly and endlessly in an atmosphere totally alien to them. Educating the tribals was very novel and new concept not only to these two devoted, dedicated and determined educationists, but also to the tribals themselves. Various new experiments were visualized and successfully implemented at Kosbad.

Balwadi (playschool) was set up in a thickly forested tribal area in Bordi. There were no roads, electricity or any kind of communication. But need overrode inconveniences. There were eight tribal hamlets nearby and about a hundred children in need of an education. The school was inaugurated by B G Kher, Chief Minister of the then Bombay Presidency on December 24, 1945.

NBSS still functions at Kosbad Hill, in Dahanu Taluka of Palghar district, in Maharashtra, as a guiding institution in pre-primary & primary education.

Since then, Govt. of India, taking inspiration from Kosbad experiment has established such institutions all over. NBBS now wants to :

-) To make Kosbad the Ruling Place of Pre School Education.
-) To make it Globalised and Modern-without taking away its down to earth approach.
-) To develop it into an International Research centre for Child Education.



3 Activities Conducted at the Nutan Bal Shikshan Kendra

With a focus on providing education to the under privileged rural and tribal children NBSS conducts various programs at their Kosbad Campus which is currently spread over 20 acres.



Some of the programs conducted at NBSS are summarized below :

Balwadi (Play School for tiny tots) – Kosbad is the model Balwadi

Each Balwadi has about 40 children with one trained teacher and one or two assistants depending on the number of children attending. Nutritious mid-day meal is served to all children. Along with this the regular syllabus, vocabulary, easy craft, counting and general knowledge is taught to them.

The Balwadis do not receive any financial aid from government and are run entirely on donations.

Primary School

Vikasvadi Prathamik Shala is a model school run along the principles set by Taratai and Anutai. The school has classes from class 1 to class 7.



There are about 500+ students in the school with 95% of the students being Adivasis from various villages and hamlets surrounding Kosbad Hill.

The school receives grant from the government for salary of the teaching staff only. All the other expenses are borne by the Trust.

D. Ed Programme

Vikaswadi Adhyapak Vidyalaya, VAV is Govt. recognised D.T.Ed college.



Here training is imparted to the aspiring teachers of Kosbad and other neighbouring villages as well as from other nearby districts.



Secondary School

In 2017, NBSS received permission from the Government of India to start the secondary school in **un-aided mode**. The first batch of Standard IX have passed out in 2018 and they have appeared for the Standard X board exam in Feb 2019.



Higher Secondary School

NBSS has also received permission from the Government of India to start the Higher Secondary school in **un-aided mode**, Standard XI and XII, in Arts and Commerce streams. The first batch of Standard XI and XII have been started in July 2018 and they will appear for the Board exams in 2020.

4 Organizational Structure of Nutan Bal Shikshan Kendra

Nutan Bal Shiksha Trust consists of the following members :

-) Mr. Prakash V. Karandikar
-) Mr. Shriram Patwardhan
-) Mr. Chandragupta Pavaskar
-) Mr. Maheshbhai M. Karia
-) Mrs. Aruna Erande

Nutan Bal Shikshan is governed by a Management Committee comprising of :

-) Mr. Chandragupta Pavaskar, President
-) Mrs. Sandhya Karandikar, Vice President



-) Mr. Dinesh Patil, Secretary
-) Mr. Chandresh Joshi, Asst. Secretary
-) Mr. Ashok Patil, Treasurer

Other Members

- Mr. Vidhyadhar Amrute,
- Mr. Vinayak Bari,
- Mr. Suresh Chavan,
- Mr. Prabhakar Save,
- Mrs. Umatai Raut,
- Mr. ,Sudhir Kamat,
- Mr. Vijay Panchal,
- Mr. Prakash Karandikar,
- Mr. Shriram Patwardhan,
- Dr. Snehlata Deshmukh,
- Mr. Maheshbhai Kariya,
- Smt. Aruna Erande Member & Trustee

Office Infrastructure of the NGO/CBO :

The Administrative office the NBSS is situated in the NBSS Campus at Kosbad Hill, Dahanu. In addition to the school buildings, the campus has two fully furnished modern air-conditioned guest houses, Hostel for D.Ed students and staff quarters for the office staff and teachers of the various facilities.



5 Setting up of Secondary and Higher Secondary Education :

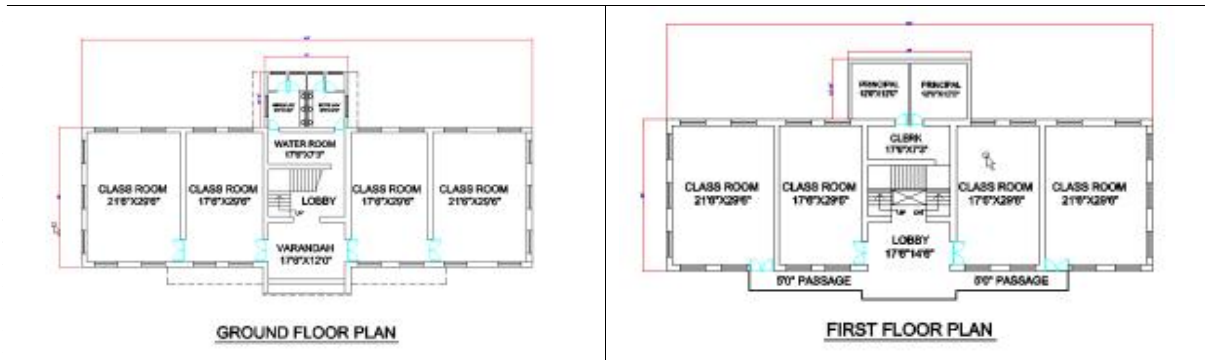
Having obtained Government permissions to start the Secondary and Higher Secondary Education in 2017, the objective of the management has set up a state-of-the-art modern and sustainable infra structure to impart quality education to its students.

Among various activities towards achieving this goal has been:

-) Setting up a fully equipped Computer Centre for the students of Standard IX and X, through donations received from Thyssenkrupp Industrial Solutions (India) Pvt Ltd. in co-ordination with the Rotary Club of Mumbai Mahim
-) Setting up of a fully equipped Science Laboratory for conducting practicals for Std IX and X. The funds for the Lab was provided through Rave Technologies Pvt Ltd.
-) Creating classrooms, drinking water, toilets and sanitation needs of the students.
-) Appointing administrative staff, teachers and principal.

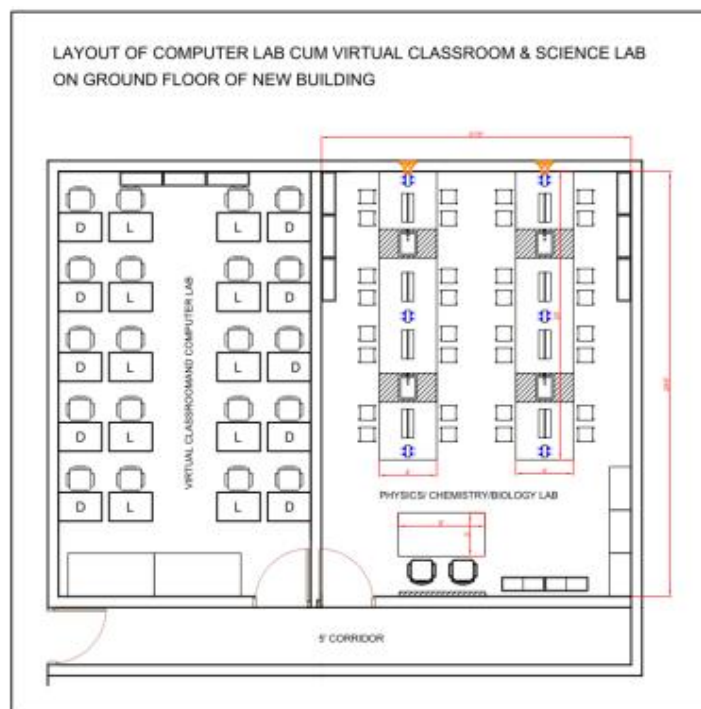
6 Project Implementation Status :

With funding from private individuals and friends and patrons, NBSS has constructed the building for the Secondary and Higher secondary School premises.



Classrooms have been built and classes for Std IX, X and XI have already been commenced.

Funding for the Science Lab and the Computer Lab has been received from CS funds of private companies. These funds have been utilized in building the Science Laboratory and procuring the Laboratory Equipment, Furniture and Cupboards.



Experienced Teachers from Mumbai have volunteered to take classes for Standard X and help the existing teachers to plan the lectures and are assisting them with the methodology to teach the new syllabus.

7 Challenges in implementing the Project :

One of the major challenges in running Secondary and Higher Secondary Schools to these rural and tribal children is getting qualified teachers to impart education to the students in rapidly changing environment and using modern methods of teaching.

The second critical challenge is the erratic supply of electricity with prolonged periods of electrical outages. The problem gets aggravated during monsoons when electricity is not available for long periods of time. It is not economical for the trust to run Diesel Generators for backup supply.

Another challenge faced by these tribal students is that they cannot afford to pay fees on a regular basis, nor buy yearly textbooks and notebooks. Besides, these schools being in the un-aided category, meals are also not available to these students. Due to lack of proper breakfast and lunch, students tend to lose concentration after a couple of hours.

All these factors are a challenge in creating a sustainable long term education program.



8 Creating a Sustainable Eco-System :

We now propose to set up **an Interactive Virtual Classroom** (Vidya) in these premises. In this concept, the teachers will be actually delivering lectures from remote locations like Mumbai, Pune, Thane etc. and the lectures will be broadcast live to students sitting in these specially fitted classrooms.

The teachers can see the students and can interact with one or many students and engage with them as they would in a regular classroom. The student can stop the teacher and ask any difficulties at any point during the lecture.

There are many E-Learning programs in the market. But all of them are one way and there is no one to one interaction between the student and the teacher.

The important advantages with this approach of a Virtual Classroom are :

- We get experienced teachers to conduct lectures to students, since they can virtually be sitting in the comfort of their homes
- Local Teachers can be trained and tested and their difficulties can be remotely addressed
- Students get to interact with teachers and get their doubts cleared
- Students can be involved in group activities under guidance of remote teachers
- Lectures can be recorded and used later for reference cum revision

Some of the critical aspects of implementing the Virtual Classroom in a remote location like Kosbad have already been taken care of through private and internal funding :

- Procurement of Audio Visual Equipment
- Dedicated Fibre Optic cable has been installed thereby stable Internet connection is available at 25/ 50MBPS bandwidth

We have conducted a series of tests on a one-on-one basis using Microsoft Skype between Mumbai and Kosbad and the Audio/ Video reception has been found to be good.

Now we are left with the problem of providing reliable, clean and outage free electricity to the Kosbad Complex.

We have therefore proposed setting up a Solar Photovoltaic system to overcome this challenge and thus enable the successful implementation of the Interactive Virtual Classroom project.

9 Present Electrical Requirement :

Electrical Requirements of Computer Centre and Mini Science Lab									
Sr No	Item Description	Qty	Unit Watts	Total KW	Op Hours per day	KWH per day	Battery Voltage (V)	Calc. Battery AH	Selected Battery AH
COMPUTER LAB									
1	HP Laptops	10	100	1	4	4			
2	HP Desktop PCs	10	225	2.25	4	9			
3	Epson Overhead Projector	1	450	0.45	4	1.8			
4	Tubelights	2	20	0.04	4	0.16			
5	Fans	2	120	0.24	4	0.96			
6	1.5TR Airconditioner	1	1200	1.2	4	4.8			
MINI-SCIENCE CENTRE									
7	HP Laptop	1	100	0.1	4	0.4			
8	Epson Overhead Projector	1	450	0.45	4	1.8			
9	Tubelights	4	20	0.08	4	0.32			
10	Fans	2	120	0.24	4	0.96			
GRAND TOTAL FOR BOTH				6.05		24.2	48	504	840
Inverter Seletion		1 No. X 6 KVA @48V (Studer Make)							
Battery Bank		16 Nos x 200AH 12V Batteries							
Solar Photovoltaic (PV) Panels		20Nos x 320W PV Panels							

10 Proposed Solar Photovoltaic System :

Based on the above requirements we propose the following system :

1. Solar Photo Voltaic System with Off-Grid Solar System to provide backup Supply in case of Grid Failure.

The Solar PV system would consist of :

-) 6.4 KW Solar PV with Off-Grid system with Battery Bank to act as backup supply in case of Grid Failure at night. Also this system would provide the reference signal for the Grid-Connect Inverter which we may install in the next phase.
-) The life of the entire system would be 25 years backed by an equal amount of global insurance.
-) The PV panels would be installed on the terrace of the new Building where the Secondary and higher secondary classrooms, the Science Lab and the Virtual Classroom would be located.





11 Current Funding Required :

To implement the Solar PV System we need additional funding for the items described below :

Sr No	System Description	Unit Price (Rs)	Qty	Total Amount (Rs)
3.	Design, Engineering, Manufacture, Supply and Installation of 6.4 KWp Off Grid Solar PV 3-Phase Power System – STUDER MAKE	7,00,000	1 No.	7,00,000
4.	Installation of the 6.4KW Off grid System	30,000	LS	30,000
5.	SMF Batteries for backup ; 12V x 200AH	14,000	16 Nos	2,24,000
	TOTAL			9,54,000

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