!! पढमं नाणं तओ दया !!

SHRI JAIN VIDYA PRASARAK MANDAL

COLLEGE OF EDUCATION

ESTD 8/ 9 / 1927 Fattechand Marg, Chafeker Chowk Chinchwad, Pune 411033. Tel.: 020-27352274,

APPROVED BY NCTE, GOVT. OF MAHARASHTRA & AFFILIATED TO SAVITRIBAI PHULE PUNE UNIVERSITY

NCTE CODE- 123228/2015 SPPU ID CODE: PU/PN/B.Ed./240/2006

Website: www.sjvpmcoe.in Dr. Kothawade P.L.

Email: sjvpmbed@gmail.com (B.Sc. , M.A. , M.Ed. , Ph.D.) , Principal

Ref. Date :

7.1.3 INSTITUTION WASTE MANAGEMENT PRACTICES INCLUDE

1. SEGREGATION OF WASTE
2. E-WASTE MANAGEMENT
3. VERMI-COMPOST
4. BIO GAS PLANTS
5. SEWAGE TREATMENT PLANT

DOCUMENTARY EVIDENCE IN SUPPORT OF EACH SELECTED RESPONSE

PEF/24-25/June/083

Date:- 24 / 06 / 2024.

To,
Dr. Kothawade Pravin Laxman
Principal,
Shri Jain Vidya Prasarak Mandal College of Education,
Pawana Nagar,
Chinchwad.

Subject: Letter of Appreciation.

Respected Sir,

We, **Poornam Ecovision Foundation**, deeply appreciate your efforts of donating **25 kg** of E-waste generated in your society. company and college to us. We appreciate these efforts especially because you have set an example of Authorised E-waste recycling and in a way helping India to become clean and green for forthcoming generations.

We at Poornam do the minor repairing and followed by donation of E-goods to needy organisations like schools and orphanages and other institutions. Remaining E-waste beyond repair will be handed over to Government Authorised recycler.

We again thank you for associating with Poornam in Authorised E-waste management. We will be happy to continue this association through awareness sessions, green activities for the City..

Thanks and Regards,

Poornam Ecovision Foundation
CIN NO U74900PN2014 NPL153113
Pune

Mr. Subhash Ambhore
Manager - E-waste Operation
Poornam Ecovision Foundation

Shri Jain Vidya Prasarak Mandal
Uni. ID. No. DU/PN/B.Ed./240/206
Chinchwadgaon, Pune 33
College of Education

PRINCIPAL
Dr.Kothawade P.L.
Shri Jain Vidya Prasarak Mandal
Collage Of Education (B.Ed)
Chinchwadgaon Pune-33

PEF/24-25/June/121

Date:- 27 / 06 / 2024.

To.
Dr. Kothawade Pravin Laxman
Principal.
Shri Jain Vidya Prasarak Mandal College of Education.
Pawana Nagar.
Chinchwad.

Subject: Letter of Appreciation.

Respected Sir.

We, **Poornam Ecovision Foundation**, deeply appreciate your efforts in donating 34 kg of e-waste generated at your place to our company in the **e-Yantran 2023** campaign to the organization. We especially appreciate these efforts as you have set an example of official e-waste recycling and in a way help make India clean and green for generations to come.

We at Poornam do the minor repairing and followed by donation of E-goods to needy organizations like schools and orphanages and other institutions. Remaining E-waste beyond repair will be handed over to Government Authorized recycler.
We again thank you for associating with Poornam in Authorized E-waste management. We will be happy to continue this association through awareness sessions, green activities for the City.

Thanks and Regards.

Poornam Ecovision Foundation ★ Pune ★ CIN NO U74900PN2014 NPL153110

Mr. Subhash Ambhore
Manager - E-waste Operation
Poornam Ecovision Foundation.

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Shri Jain Vidhya Prasarak Mandal
College of Education (B.Ed.)
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Shri Jain Vidya Prasarak Mandal ★ College Of Education ★ Unit. ID.no. DIAPMEd.Ed.240206 Chinchwadgaon, Pune33

eyantran
Largest E-Waste Collection Drive

PEF/2022-23/JAN/ Date: 23 / 01/2023

To,

The Principal
Shri Jain Vidhya Prasarak Mandal B'ED College

SUBJECT : AWARENESS SESSION REGARDING E-YANTRAN IN YOUR ESTEEMED SCHOOL.

Dear Madam/Sir,

Social organizations in Pimpri-Chinchwad are organizing largest E-waste collection drive at city level named as "E-yantran" which will run on 26th January 2023. For campaigning purpose we are conducting awareness sessions at schools to sensitize students from 5th to 10th STD about E-waste management and to appeal them to donate E-waste in this drive. We require 30 minutes time for conducting this session.

We are going to conduct awareness sessions at your renowned school on the date and time given below allotted by you. We required kind support to conduct session for this noble cause. Your school's participation will be helping for this environment conservation activity.

Date: 23 / 01 /2023 Time: 02:10 PM

Standard: B.ED

Hope for continued association with you in future.

Yours faithfully,

Project Co-ordinator
E-yantran Project
Samyam Jain
9827457344

Eyantran
Largest E-Waste Collection Drive

eYantran2023

Pimpri Chinchwad's Latest eWaste Awareness & Collection Drive

26th January 2023 9am to 1pm

On the occasion of Republic Day participate in the largest drive by donating e-Waste.

E-Waste contains lead, nickel, chromium, cadmium, mercury, cobalt etc. apart from any other dangerous chemicals and metals. Plastic & E-Waste pollutes the environment and is harmful for people's health if disposed of unscientifically. Hence, donate E-waste to your nearest center for scientific disposal.

ACCEPTED E-WASTE

Used / Repaired / Un-Repaired Electric and Electronic Devices Like

Fridge	Music System	LED Bulbs	Television
Radio	Chargers	LED Tubelight	Mixer-Grinder
Tape Recorder	Cables, Batteries	Laptop	Oven, Heater
Home Theatre	Printer	Computers	Iron Press
DVD & Cds	Audio Cassestte	Mobile Phone	Fan
Extension Bord	Desk Lamp	Tablets	

FLUORESCENT TUBELIGHT, INCANDESCENT BULBS & CFLs WILL NOT BE COLLECTED

Contact : 7720054179

For More Details Visit Our Website QR Code

सहयोगी संस्था

MAHARASHTRA ENTERPRISES

Gat No.198, Near Aman Profile, Dehu - Alandi Road, Borhadewadi,
Moshi, Pune - 412105
GSTIN / UIN : 27BYLPS8092J1ZH I State Name : Maharashtra, Code : 27
Mob : [redacted] 8788911910
E- mail : maharashtraenterprises2013@gmail.com

This is to certify that Shri Jain vidya Prasarak Mandal College of Education has given 08 ton dry Waste material like Practical Books, answer books, Newspaper and cardboards for recycling at May 2023.

Shri Jain Vidya Prasarak Mandal
Uni. ID. No.
DU/PN/B.Ed./240/206
Chinchwadgaon,
Pune 33
College of Education

PRINCIPAL
Dr.Kothawade P.L.
Shri Jain Vidya Prasarak Mandal
Collage Of Education (B.Ed)
Chinchwadgaon Pune-33

Maharashtra Enterprises
Pune
411062
Chikhali

MAHARASHTRA ENTERPRISES

Gat No.198, Near Aman Profile, Dehu - Alandi Road, Borhadewadi,
Moshi, Pune - 412105
GSTIN / UIN : 27BYLPS8092J1ZH I State Name : Maharashtra, Code : 27
Mob : [redacted] 8788911910
E- mail : maharashtraenterprises2013@gmail.com

This is to certify that Shri Jain vidya Prasarak Mandal College of Education has given 10 ton dry Waste material like Practical Books, answer books, Newspaper and cardboards for recycling at may 2021.

Shri Jain Vidya Prasarak Mandal
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Pune
411062
Chikhali

MAHARASHTRA ENTERPRISES
Gat No.198, Near Aman Profile, Dehu - Alandi Road, Borhadewadi, Moshi, Pune - 412105
GSTIN / UIN : 27BYLPS8092J1ZH I State Name : Maharashtra, Code : 27
Mob : [redacted] 8788911910
E- mail : maharashtraenterprises2013@gmail.com

This is to certify that Shri Jain vidya Prasarak Mandal College of Education has given 12 ton dry Waste material like Practical Books, answer books, Newspaper and cardboards for recycling at May 2022.

Shri Jain Vidya Prasarak Mandal's Collage of Education
Uni. ID. No. DU/PN/B.Ed./240/206 Chinchwadgaon, Pune 33

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Maharashtra Enterprises Pune 411062 Chikhali

ENERTEK SOLUTIONS
India Private Limited

615 B, Nana Peth,Pune - 411002
+91-9766043482
anand@enertecsolutions.com

CERTIFICATE OF COMPLETION

This is to certify that

Shree Jain Vidya Prasarak Mandal, College of Education, Chinchwad has successfully completed detailed energy Audit in month of June 2024. The study was conducted by Enertek Solutions India Private Limited. Institution has agreed to implement the energy saving measures for reduction in energy consumption.

Thanking You,

Anand Dande (CEA – 29574)
Director
Enertek Solutions India Private Limited
Pune – 411 002

Shri Jain Vidya Prasarak Manal * College of Education
Uni. ID. No.
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Chinchwadgaon, Pune 33

PRINCIPAL
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Shri Jain Vidya Prasarak Mandal
College Of Education (B.Ed)
Chinchwadgaon Pune-33

Report on
Energy Audit
for
Shree Jain Vidya Prasarak Mandal, College of Education

by:

Enertek Solutions India Pvt. Ltd.,
615 – B, Nana Peth, Nr. Parasi Agyari,
Pune – 411 002

June 2024

Acknowledgement

Team Enertek wishes to thank trust members and staff members of Shree Jain Vidya Prasarak Mandal, College of Education, Chinchwad and the ever-helping team members of administrative team. Team Enertek wishes to express their gratitude for all the help extended to our team members.

Team Enertek

Anand Dande – CEA 29754
BEE Certified Energy Auditor

Chapter 8

Waste Disposal & Vermi composting:

8.1. Vermiculture Composting Culture –

Vermicomposting is basically a managed process of worms digesting organic matter to transform the material into a beneficial soil amendment. The institute has been started Vermi culture composting culture in house on 30 Sq. meter land. The main purpose of this is to reduce disposable waste in the Institute campus and after complete process of Vermi composting it is used as manure for plantation and greenery in the campus. It is also used for the demonstration and awareness in farmers to implement organic farming and its importance.

The main benefits of the process are to reduce the waste in the environment and utilized for some useful purpose and it is cost savings process.

The earthworms being voracious eaters consume the biodegradable matter and give out a part of the matter as excreta or Vermi-castings. The Vermi-casting containing nutrients is a rich manure for the plants. Vermicompost, apart from supplying nutrients and growth enhancing hormones to plants, improves the soil structure leading to increase in water and nutrient holding capacities of soil. Fruits, flowers and vegetables and other plant products grown using vermicompost are reported to have better keeping quality. A growing number of individuals and institutions are taking interest in the production.

Process:
The process of composting crop residues / Agri wastes using earthworms comprise spreading the agricultural wastes and cow dung in gradually built-up shallow layers. The pits are kept shallow to avoid heat built-up that could kill earthworms. To enable earthworms to transform the material relatively faster a temperature of around 300C is maintained. The final product generated by this process is called vermicompost which essentially consist of the casts made by earthworms eating the raw organic materials. The process consists of constructing brick lined beds generally of 0.9 to 1.5 m width and 0.25 to 0.3 m height are constructed inside a shed open from all sides. For commercial production, the beds can be prepared with 15 m length, 1.5 m width and 0.6 m height spread equally below and above the ground. While the length of the beds can be made as per convenience, the width and height cannot be

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increased as an increased width affects the ease of operation and an increased height on conversion rate due to heat built up. Cow dung and farm waste can be placed in layers to make a heap of about 0.6 to 0.9 m height. Earthworms are introduced in between the layers @ 350 worms per m3 of bed volume that weighs nearly 1 Kg. The beds are maintained at about 40-50% moisture content and a temperature of 20–300 C by sprinkling water over the beds. When the commercial scale production is aimed at, in addition to the cost of production, considerable amount must be invested initially on capital items. The capital cost may work out to about Rs. 5000 to 6000 for every tonne of vermicompost production capacity. The high unit capital cost is since large units require considerable expenditure on preparation of Vermi beds, shed to provide shelter to these beds and machinery. However, these expenditures are incurred only once. Under the operational cost, transportation of raw materials as also the finished product are the key activities. When the source organic wastes and dung are away from the production facility and the finished product requires transportation to far off places before being marketed, the operational cost would increase. However, in most of the cases, the activity is viable and bankable. Following are the items required to be considered while setting up a unit for production of Vermi-compost.

Components of a Commercial Unit –

Commercial units must be developed based on availability of cow dung locally. If some big dairy is functioning then such unit will be an associated activity. Commercial units must not be designed based on imported cow dung.

1. Sheds

For a Vermi-composting unit, whether small or big, this is an essential item and is required for securing the Vermi beds. They could be of attached roof supported by bamboo rafters or steel trusses. Locally available roofing materials or HDPE sheet may also be used in roofing to keep the capital investment at reasonably lower level. If the size is so chosen as to prevent wetting of beds due to rain on a windy day, they could be open sheds. While designing the sheds adequate room/pathways must be left around the beds for easy movement of the laborers attending to the filling and harvesting the beds.

2. Vermi-beds

Normally the beds have 0.3 to 0.6 m height depending on the provision for drainage of excess water. Care should be taken to make the bed with uniform height over the entire width to avoid low production owing to low bed volumes.

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The bed width should not be more that 1.5 m to allow easy access to the center of the bed.

3. **Fencing and Roads/Paths**

The site area needs development for construction of structures and development of roads and pathways for easy movement of hand-drawn trolleys/wheel barrows for conveying the raw material and the finished products to and from the Vermi sheds. The entire area must be fenced to prevent trespass by animals and other unwanted elements. These could be estimated based on the length of the periphery of the farm and the length and type of roads/paths required. The costs on fencing and formation of roads should be kept low as these investments are essential for a production unit, yet would not lead to increase in production.

4. Water Supply System

As the beds must be kept moist always with about 50% moisture content, there is a need to plan for a water source, lifting mechanism and a system of conveying and applying the water to the Vermi-beds. Drippers with round the clock flow arrangement would be quite handy for continuous supply and saving on water. Such a water supply system requires considerable initial investment. However, it reduces the operational cost on hand watering and proves economical in the long run. The cost of these items would depend on the capacity of the unit and the type of water supply chosen.

5. Transportation

For any Vermi-composting unit transport arrangement is a must. When the source of raw material is away from the production unit, an off-site transport becomes major item of investment. A large sized unit with about 1000 tonnes per annum capacity may require a three-tonne capacity mini-truck. With small units particularly with the availability of raw material near the site, expending on transport facility may become infructuous. On-site transport facilities like manually drawn trolleys to convey raw material and finished products between the storage point and the Vermi-compost sheds could also be included in the project cost.

Recommendations –

Enertek recommends to install Waste Composting and Vermi-composting project of appropriate size.

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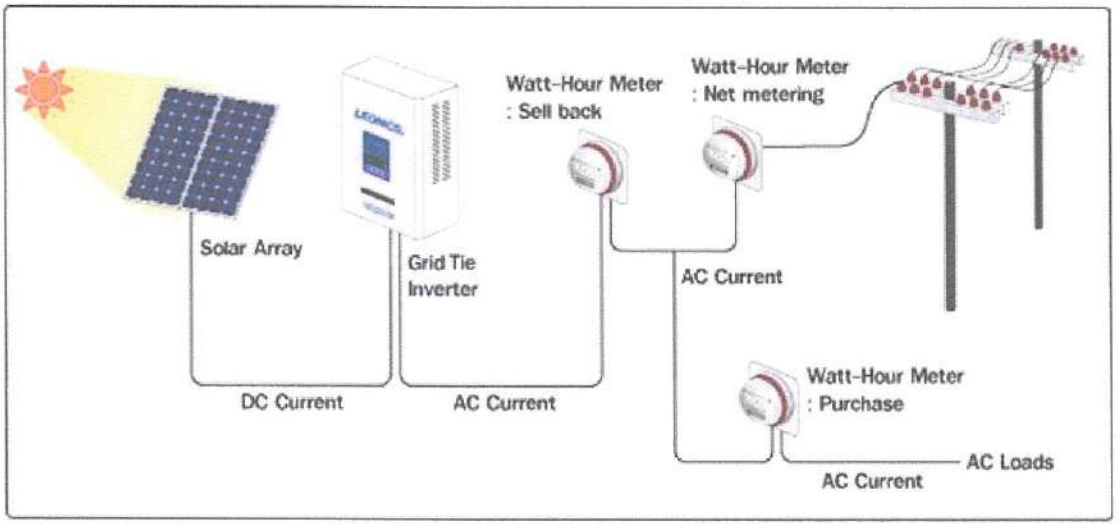
Chapter 10

Solar PV:

The college Should opt for rooftop solar photovoltaics plant. This is a clean and green source of energy that can be directly utilized as a substitute to the Grid Power. In this section we shall be seeing the benefits and proposal for Solar PV system – On Grid Type

In this system, there is no battery backup required, the energy generated is directly utilized by the load and the excess units are fed back into the grid with a net meter. At the end of the month the difference of the two will be your actual billed units. This system is more cost effective than a Battery type/ Islanding type/ Solar PV off grid system.



Benefits of solar: -

- Electricity produced by solar cells is clean and silent. Because they do not use fuel other than sunshine, PV systems do not release any harmful air or water pollution into the environment, deplete natural resources, or endanger animal or human health.
- Photovoltaic systems are quiet and visually unobtrusive.
- Small-scale solar plants can take advantage of unused space on rooftops of existing buildings.
- Solar energy is a locally available renewable resource. It does not need to be imported from other regions of the country or across the world. This reduces environmental impacts associated with transportation and reduces our dependence on imported oil. And, unlike fuels that are mined and harvested, when we use solar energy to produce electricity we do not deplete or alter the resource.

Total solar PV capacity that can be connected on roof is 3 kW depending on actual space available on the roof of science building which is facing south direction.

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Considering 3 kW System-

- Units generated per day = 14 kWh
- Annual Generation Possible = 4,928 kWh
- Area required = 30 sqm
- Saving = 49,275 INR per year
- Investment = 1,95,000 INR plus taxes
- Depreciation applicable
- Possible Payback – 4 yrs.

Note: - Figures mentioned here are based on thumb rule, Quotation will be given that will cover the necessary details on request.
According to peak, Shine hours and global irradiance available at location = 4.5 kWh/kWp Generation Considered
Solar Payback & estimated generation

Year	Energy kWh/Anum	Energy (kWh) rate	Cost saving (Rs.)
1	4,928	₹ 10.00	₹ 49,275
2	4,878	₹ 10.20	₹ 49,758
3	4,829	₹ 10.40	₹ 50,246
4	4,781	₹ 10.61	₹ 50,738
5	4,733	₹ 10.82	₹ 51,235
6	4,686	₹ 11.04	₹ 51,737
7	4,639	₹ 11.26	₹ 52,244
8	4,593	₹ 11.49	₹ 52,756
9	4,547	₹ 11.72	₹ 53,273
10	4,501	₹ 11.95	₹ 53,795
11	4,456	₹ 12.19	₹ 54,323
12	4,412	₹ 12.43	₹ 54,855
13	4,368	₹ 12.68	₹ 55,393
14	4,324	₹ 12.94	₹ 55,935
15	4,281	₹ 13.19	₹ 56,484
16	4,238	₹ 13.46	₹ 57,037
17	4,196	₹ 13.73	₹ 57,596
18	4,154	₹ 14.00	₹ 58,160
19	4,112	₹ 14.28	₹ 58,730
20	4,071	₹ 14.57	₹ 59,306
21	4,030	₹ 14.86	₹ 59,887
22	3,990	₹ 15.16	₹ 60,474
23	3,950	₹ 15.46	₹ 61,067
24	3,911	₹ 15.77	₹ 61,665
25	3,871	₹ 16.08	₹ 62,270
Total	1,09,479		₹ 13,88,240

- *Note Considering 1% Degradation of Solar Panels and System per annum*

  2% increase considered in electricity cost per annum

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