



A Report on
Technical Workshop of

“Vishwakarma Yojana : Sustainable planning for villages”

Date: 28th October, Monday, 2013
Venue: Auditorium, VPMP Polytechnic, Gandhinagar.

Workshop Themes



Energy
Audit

Sustainable
Solutions:



Waste
Management



Presented By:
Dr. Indrajit Patel & Mrs. Jagruti Shah



Gujarat Technological University
Ahmedabad, Gujarat

**Gujarat Technological University,
Ahmedabad, Gujarat.**

**Technical workshop of Vishwakarma Yojana at VPMP College,
Gandhinagar**

(28th October, 2013)

GTU had organized a one day Technical workshop of Vishwakarma: Phase-II for Ahmedabad region held on 28th October, 2013 from 10:00 am at auditorium of VPMP College, Gandhinagar.

Technical workshop had been chaired by Prof. A. J. Patel, Principal VPMP College. Expert speakers Prof. Yogesh Prajapati, Mr. Sanjay Patel, CMD-SP Renewable Energy Source pvt. Ltd., Mr. Klaus Peter Hankel, Engineer, Germany, Mrs. Jagruti Shah, Project Coordinator Vishwakarma Yojana, Mrs. Usha Banker, Deputy Director-GTU, 7 Nodal officers from LDCE-Ahmedabad, GGP-Ahmedabad, GEC- Modasa, GEC- Palanpur, GP- Palanpur, C. U. Shah-Surendranagar, SKP- Visnagar, GP- Vadnagar, VGEC- Chandkheda & 170 Students of respective colleges attended the workshop.

Prof. Hiren Patel- Nodal officer, VPMP Polytechnic welcomed all invitees & participants in the workshop. The function was inaugurated with prayer & lighting the lamp. He requested Prof. A. J. Patel, Principal, VPMP polytechnic to share his view on this occasion.



Prof. A. J. Patel thanked GTU for giving students such an opportunity to get experience of existing Situation of real world. He shared importance of practical knowledge in the advance technology era. Phasing the challenges, studying the existing problems and evolving the solutions which help the community can make one successful Engineer. He acknowledged the efforts of Hon' ble Vice chancellor Dr. Akshai Aggarwal & its team for the project.



Mrs. Jagruti Shah, Project Coordinator briefed all participants about core themes of workshop. Technical Session has been grouped in four core themes:

- I. Energy Audit
- II. Waste to energy
- III. Biogas potential in India
- IV. Waste Management

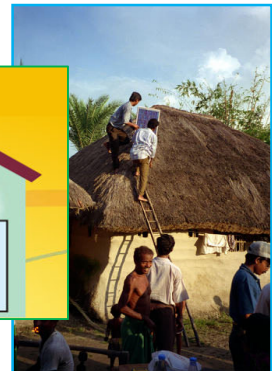
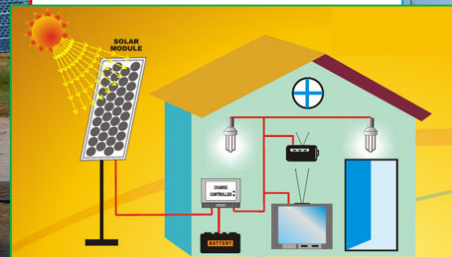
Technical Session – I: Energy Audit

The first Session was conducted by Prof. Yogesh Prajapati from BVM Engineering Collage. He is a certified Engineer from the Bureau of Energy Audit. Mr. Prajapati has performed energy audit for Reserve bank of India, Zudys Cadila Pharmacy, ONGC-Hajira & other well-known firms. In his presentation, he presented Energy Scenario, Energy Basics, Energy Audit, its Need, Types, Phases, Typical Energy Audit Questions, Energy Audit of Some Load Found in Villages,



Energy Saving Examples, Instruments and Metering for Energy Audit, Energy Consumption Scenario in Rural India, Some Applications of Renewable Energy sources for Rural Development. He explained the students the meaning of energy audit. Energy Audit means the verification, monitoring and analysis of use of energy including submission of technical report containing recommendations for improving energy efficiency with cost benefit analysis and an action plan to reduce energy consumption. Energy Audit is a systematic study of energy inputs, conversion and outputs of energy consuming equipment. Goal of Energy Audit is to reduce energy consumption per unit.

He also briefed some points to save energy like: Switching OFF ideal Lights, Fans, Reduce Water, Steam, Compressed Air Leakages, Use of high Efficiency Pumps, Fans, Motors, Lights, Cleaning of equipment, water treatments etc., Use of Compressors, Fans, Pumps with minimum pressure, Temperature,, flow, Use of small size equipment like Motors, Pumps, Refrigerators, T.V sets, 400 Ltr. Fridge will consume more energy than 165 Ltr. 42 Inch T.V consume 4 times more power than 21 Inch., Cycling/ walking in place of 2/4 wheelers., Mail, Telephone in



place of Travel. He also explained some applications of renewable energy sources for rural area with design. Students from Electrical Engineering branch asked



various questions regarding electrification problems in villages at the end of the session. Prof. Hiren Patel - Nodal officer thanked Prof. Prajapati for enhancing the knowledge of students & Nodal officers.

Technical Session – II: Sustainable Solution: Waste to Energy

Mr. Sanjay Patel, CMD of SP Renewable energy source Ltd has conducted this session. He has experience of more than 15 years in engineering & design activities of renewable energy Sources and waste to energy generation specially for villages.

He presented various sustainable solutions for villages of India. He mainly focused on the design of Biogas Plant for the village condition of Gujarat. Design manufactured by him was optimum solution for the Indian villages. He explained the concept of waste to energy and how it can be benefited to Indian Villages. He explained applications of biogas plant. He motivated students for such an innovations for villages.



He presented videos for setup of biogas plant, maintenance and production & use of Biogas covered. He shared example of Planet green of Vadodara in which use of renewable energy sources has been done successfully by all users.



Nodal officers and students asked various question with respect to biogas plant and waste to energy concept. Prof. Hiren Patel thanked Mr. Sanjay Patel for his valuable guidance of Waste to energy.

Technical Session – III: Biogas Potential in India

This Session was conducted by Mr. Klaus Peter Hankel Engineer from Germany, working since more than 30 years in agriculture, biogas & renewable energy field. He is having expertise in the field of Methanisation, waste management, Feedstock & fertilizer management, Effluent treatment and water saving, Modularized solutions, preferentially based on locally sourced technology.

He presented potential of Biogas in India and how rural area can be benefited. Economy of rural area can be grow more with effective planning of

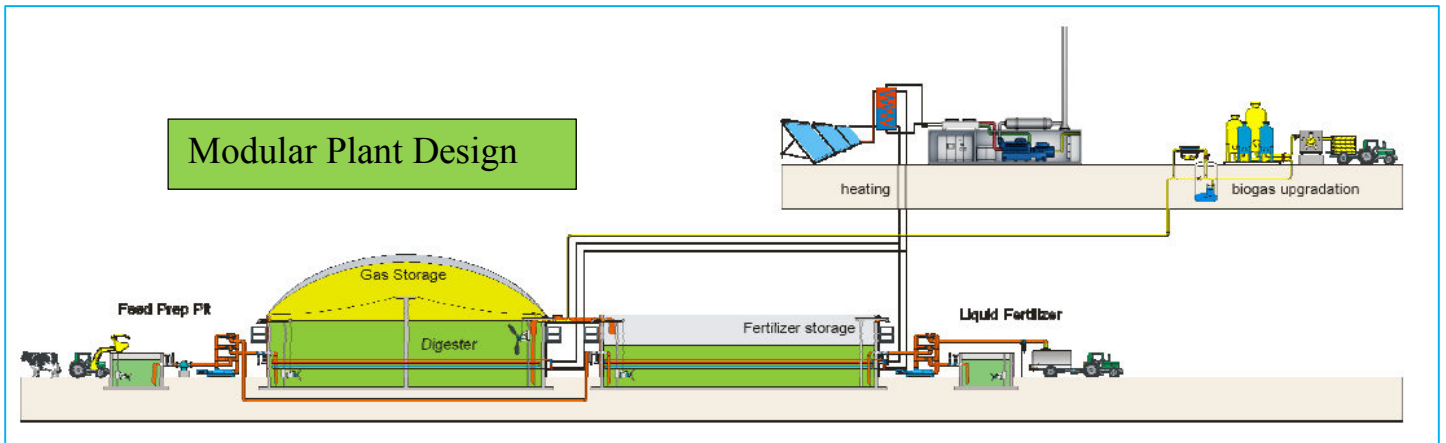


Source from Agricultural, Urban and Industrial origin

Cow Dung, poultry litter (hatcheries, broiler farms, pig manure)
Agricultural residues as rice straw, banana stem, maize stalks
Sugar mill press mud, Distilleries spent wash, Sago plant effluent
Municipal Solid Waste, abattoir, green cuttings & back yard waste, vegetable market waste, kitchen waste
Silage from agricultural crops as Napier grass, Sweet Sorghum, Sugar cane, and Maize, Sugar beet



Bio gas plants. Renewable energy attractiveness indices, Biogas in India, Comparison of Power & CNG, Various sources to produce biogas from agriculture, Urban & Industries, waste from Dairy plant, Sugar industries, banana farming presented by him. He shared his view on potential market for the organic fertilizers for India.



He explained design for 5000m³Biogas/ Day based on cow dung, bird dung, castor cake & Napier grass. He discussed production of Bio- CNG from plants. His presentation has given new concept and design to biogas potential. He discussed various case studies across globe for renewable energy sources.



Nodal officers and students asked various issues with respect to Biogas plant design in villages. Mrs. Jagruti Shah thanked Mr. Peter for his valuable guidance & design support for Bio gas manufacturing.



Technical Session – IV: Waste Management- A case study of Integrated and Sustainable Solid & Liquid Resource Management (TAPI Model)

This session was conducted by Mrs. Jagruti Shah, Project coordinator & urban planner, Vishwakarma Yojana- GTU. She presented theme of waste management for villages. Waste management is one of the challenge for urban as well as rural area. In her presentation, definition of waste, types of waste, waste management techniques, different parameters for design and guidelines to design waste management model have been explained.



Tapi model is one of the most sustainable approach for waste management in which Zero waste management centre was built by local material, local man power and with optimum cost. Door to door collection has been done by local





people only. Three SHG members involved in door to door collection for every 250 to 300 families. Primary segregation or source segregation should take place at households for which two dustbins each have been provided. Secondary Segregation of organic (wet) waste into 20 types and inorganic (Dry) waste into 17 types in ZWM Centre. Aerobic composting (Windrow) & using cattle to reduce the volume of organic waste makes this model more sustainable.



Nodal officers and students asked various issues phasing by them and solutions has been given. Prof. Hiren Patel thanked Mrs. Jagruti Shah for her valuable guidance of Waste management.



Mrs. Jagruti briefed about design phase to Student & Nodal Officers. Student & Nodal officers shared their Problems & issues for designs in villages. She has given various solutions to their issues & difficulties. She shared various guidelines for designing part. Mrs. Usha Banker resolved all admin & financial issues of colleges.

Mrs. Jagruti Shah & Mrs Usha Banker had an interaction session with MBA students of NICM-Ahmedabad. Mrs. Jagruti Shah has briefed them about Vishwakarma Yojana and their scope of work in the project. She has given overall guidelines for survey work with respect to live stock management.

Prof. Hiren Patel thanked all Students, Nodal Officers, Staff of VPMP & team of GTU for making orientation program success for Vishwakarma Yojana.

On behalf of Vishwakarma Yojana, GTU, Ahemdabad

Dr. Indrajit Patel

Usha Banker

Jagruti Shah

