

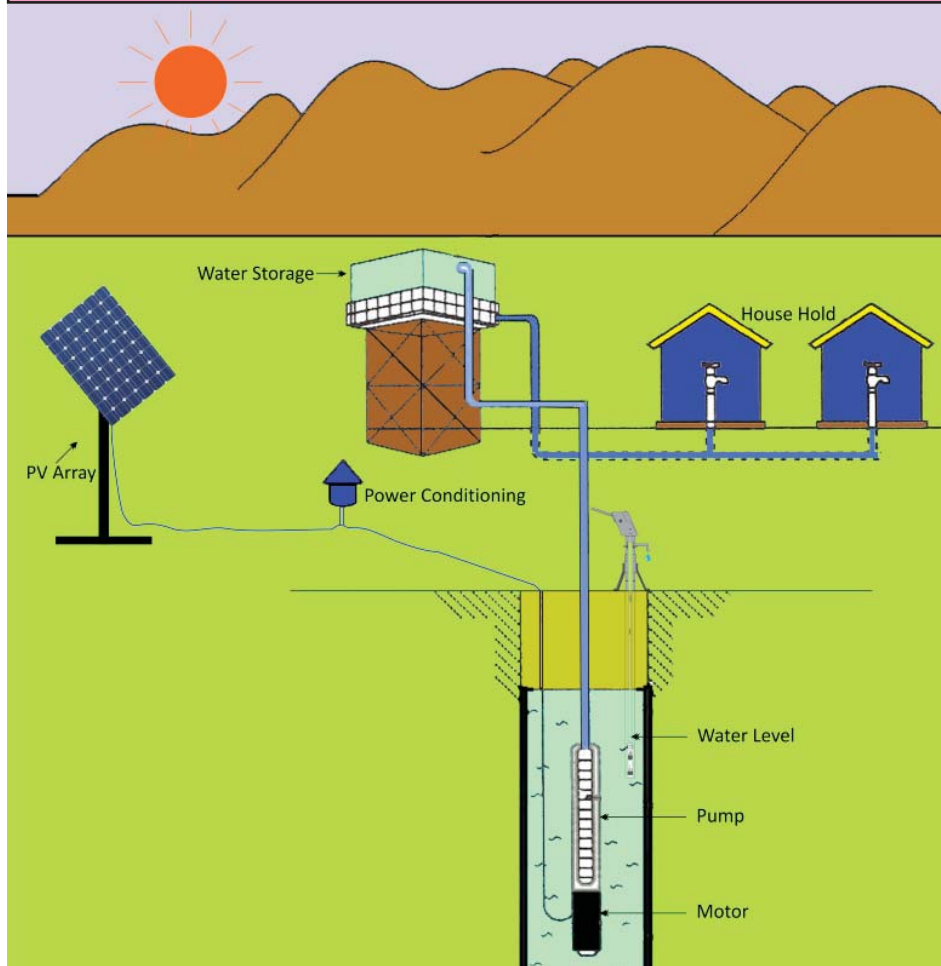


Training Course on

Solar Powered Pumping Systems Sustainable Solution for Public Drinking Water Supply



**Focus on Planning, Design, Smart Remote
Management & Monitoring, On-site Quality
Control and Installation Practices**



Date : 29th Sept 2015 to 01st Oct 2015

Course Developed & Organized by:

Institute of Public Health Engineers, (Bhopal Chapter) - India

In Joint Venture with

**WatsanCAD Solution (Training Management Consultant),
Bhopal, Madhya Pradesh (INDIA)**

Course Conducted By : RCVP Narohona

Academy of Administration, Apex Training Institute

Government of Madhya Pradesh, Bhopal, India

Last Date for Nomination : 10th Sept 2015

Sponsored By :

Introduction

To provide every person with adequate safe water for drinking, cooking and other domestic basic needs on a sustainable basis. This basic requirement should meet minimum water quality standards and be readily and conveniently accessible at all times and in all situations i.e. in desired quantity of potable water at household level.

Power Supply in India is lagging in terms of desired services and penetration due to non-availability, shortage, frequent disruption of power supply, voltage fluctuations etc besides inaccessibility of the areas emphasize the need for alternative solutions like non-conventional technologies.

Based on the techno-economic feasibility and viability in consideration with life cycle cost the most appropriate option can be harnessing of solar energy for use of various purposes.

Application of Solar Power for Water Pumping System (SWPS) in drinking water sector is also taking place, in uncoordinated and unplanned manner. The use of solar energy for water supply systems is not a new concept, but only an appropriate design solutions can result in predictable system performance. The focus is required on appropriate planning, design in consideration with Life Cycle Cost Approach (LCCA) and online real time remote management and monitoring, on-site third party quality control / implementation of solar based pumping systems for drinking water supply is of utmost importance to cater the safe and potable water needs on sustainable basis with emphasis integrated WaSH.

Objective of Training

The proposed training is intend to develop capacity of the institutions / organizations / individuals through knowledge sharing on the application of solar energy for pumping and water treatment system appropriate for drinking water sector i.e. rural & urban water supply in India. To ensure national goal for provisioning of safe and potable water in remotely located habitations and school with special focus of the training is to develop relevant technical skills and know how of the technology to meet the challenges in planning, design, implementation, monitoring, quality control, operation & maintenance for use of solar powered drinking water pumping systems.

Who Should Participate in the Training

Engineers / Managers from rural and urban water supply / Forest / Agriculture / MNRE departments, NGO, Consulting Engineers, state ministry personnels, academic institutions and other organization related to solar water pumping system. Special focus on provisioning of safe and potable drinking water with solar water pumping system.

Resource Persons

Experts and Senior officials being a sector specialist from Ministry of Drinking Water and Sanitation, Ministry of New & Renewable Energy, water supply departments / NGO's / CGWB / Industry etc.

The Training Covers

- Introduction to the National Drinking Water Policies - (NRDWP & MNRE)
- Present Scenario Issues / Challenges in the Drinking Water Sector
- Baseline survey & study of Existing Water Supply Status
- Analysis of existing water supply status / data and identification of gaps
- Need for alternatives source of energy & identification of appropriate option
- Application of Solar Energy in Drinking Water Sector & integrated WaSH
- Development of norms / guidelines / service level benchmarks for planning & design of Solar Water Drinking Pumping System w.r.t life span
- Studies/Identification of source/s & source finding using hydro-geomorphological maps with the help of Remote Sensing /Geographical Information System
- An appropriate engineering Planning & Design of Solar Water Drinking Pumping System

- Selection of Appropriate Pumps & Tracking System considering Life Cycle Cost Approach appropriate for drinking water system
- Development of Cost Estimates
- Development of Tender Specifications for various components involved in drinking water pumping system as per specification and guidelines.
- Development of checklist for on-site Quality control & Monitoring
- Need of Real Time Remote Management, Monitoring & Control System as a tool in SDWPS for sustainable O&M
- On-site demonstration of SDWPS functioning
- Safety / Precautions in Installations
- Solar based Water Purification System - An appropriate technology for RWSS
- General Requirement for Sustainable Operation & Maintenance
- Solar Powered Pumping System - a viable option for PPP's in small rural piped water supply schemes

The course is designed to ensure drinking water guidelines in conjunction with MNRE technical specifications

Methodology

Methodology includes class room lectures with audio visuals, interactive sessions through group discussions, case studies etc. Emphasis would be laid on sharing of experiences of participants. Active participation is desired from participants. Medium of training is English.

Outcome of the Training Programme

Participants after this training can

- Take-up baseline survey studies, collection of data for SDWPS
- Plan and design Solar Based Drinking Water Pumping Systems with site specific conditions & requirements as per technical guidelines.
- Can prepare technical specifications for tender
- Ensure on-site quality control during installation

About the Organizers

A. Institute of Public Health Engineers (IPHE) - India

Institution of Public Health Engineers (IPHE) India and it's Bhopal Regional Centre (www.ipheindia.org) IPHE is a premier forum statutory registered body of public health and environmental engineers of the country formed in 1972. The institution undertakes a diversified spectrum of activities such as organizing seminars, symposia, workshops and training courses; undertaking research and development projects, consultancy services and publication of quarterly technical journals. IPHE was involved in conducting the Workshop on Solar Powered Water Pumping Systems sponsored by The International Committee of the Red Cross, (ICRC) New Delhi dated 19-20th June 2014.

AND

B. WatsanCAD Solution, Bhopal - (Training Management Consultant)

WatsanCAD Solution premier consultancy organization for, planning and management in the WaSH, Integrated Water resource management, Green Energy Solutions sectors & trainings. WatsanCAD Solution function in following key areas, being having specialization in

- Development of Feasibility & DPR's Report (WaSH, Watershed & Solar Powered Based Drinking Water Supply)
- Appraisal & Evaluation (Engineering Projects - WaSH)
- Capacity Building Training's - WaSH, Drinking Water Security, Planning of Solar Drinking Water Pumping System
- Planning, Designing, Computer Aided Modeling of Water Supply, Sewerage & Solar Powered Water Supply Projects
- Preparation of Tender Specifications - WaSH and Solar Powered Water Supply Schemes
- Quality Control & Monitoring - WaSH and Solar Powered Water Supply Schemes
- MIS Development
- IWRM - RS / GIS
- WQM&S - RS / GIS
- Water Security & Sustainability

WatsanCAD Solution is registered organization with IPHE India.

IPHE & WatsanCAD Solution in joint venture has successfully conducted such type of training courses earlier (29th Sept 2014 to 01st Oct 2014 & 5th Jan 2015 to 9th Jan 2015). Participation from Nepal & various states of the country

Programme Dates and Venue

Date : **29th Sept 2015 to 01st Oct 2015**

Timings: On the first day, registration will commence at 0930 Hrs. On all other days the programme timings will be from 9:30 to 17:00 hrs with breaks in between for tea & lunch / packed lunch.

Venue : **RCVP Noronaha Academy of Administration & Management, Bhopal which is apex national training institute run by Govt. of MP.**

PS: 01. Training will be concluded on 01st Oct 2015 at 17:00 hrs. Participants are requested to ensure their return journey accordingly.

Course Manager

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Course Co-ordinator

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Director
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Course Fee

Residential course fee is :

SN	Category	Amount Per Participant
01	Government / NGO / Academic institutions sponsored	Rs. 20520/- i/c S.T. @14.00%
02	Industry / consulting firm sponsored	Rs. 28500/- i/c S.T. @14.00%
03	In-case of per participant other than India	@ \$500 i/c S.T. @14.00%

Note : Early bird registration till 31st July 2015 : 5% discount shall be allowed only for category 1 only subject to minimum sponsorship of 3 participants.

Residential course fee includes course material, course kit, and twin-sharing / single AC accommodation as per availability, Breakfast, Lunch, Dinner, Tea / Coffee and snacks during the actual days of training programme. Taxes if subject any change shall be charged as applicable from time to time.

Fees includes accommodation to participants a day prior evening to the commencement of the course and day after the conclusion of the programme till 12:00 hrs.

Note :

- For the convenience of the outstation participants Course co-ordinator will facilitate pickup and drop from Airport / Railway Station / Bus stations, if travel plans are received at least 3 days in advance along with mobile number & e-mail. The charges shall be paid by the participants directly to the cab.
- In-case if overseas participants wish to avail airport pickup and drop facility through organizers, \$30 (inclusive of service tax) shall be payable extra in addition to course fees and same shall be remitted along the course fees.
- **Please see : Overseas participants shall be sole responsible for all necessary required formalities, clearances and approvals as per requirements of Government of India rules for attending this training course. Organizers does not own any the responsibility for the same.**
- Overstay will not be allowed.
- Families are not allowed to stay in the Hostel.

Registration

Please download the application form from www.watsancadsolution.in/traings.htm and send the filled form to the e-mail address given below : **trg.wcs@gmail.com**

Please send details by post to below mentioned address.

To, **WATSANCAD SOLUTION, 68, Amrapali Enclave Chunnabhatti, Kolar Road, Bhopal - 462016**



Note : On receipt of the nominations acceptance will be notified by e-mail & mobile not later than 14th Sept 2015 and there after participants are requested to send their residential course fees in accordance with following categories

Government / NGO/ Academic Institutions sponsored per participant Rs. 20,520/- i/c service tax @14.00% or

Industry / Consulting firms sponsored per participant Rs. 28,500/- i/c service tax @14.00%

in favour of **“WATSANCAD SOLUTION, BHOPAL”** through Electronic Fund Transfer (EFT) to A/c No. **51032940551** with **State Bank of Bikaner and Jaipur**, Kolar Road, Bhopal by RTG's / NEFT / **IFSC Code No: SBBJ0010850** – MICR No: **462003003** Service Tax @ 14.00% (as applicable) is to be paid extra over and above the training fee as training is also brought under the purview of Service Tax in Finance Bill 2010. Alternatively payment can be in the form of demand draft payable in favour of WATSANCAD SOLUTION, BHOPAL

PAN Card No. AAGPH6340A; Service Tax Registration No AAGPH6340ASD001.

PARTICIPANTS OTHER THAN INDIA

In-case of per participant other than India @ \$500 i/c service tax @14.00%

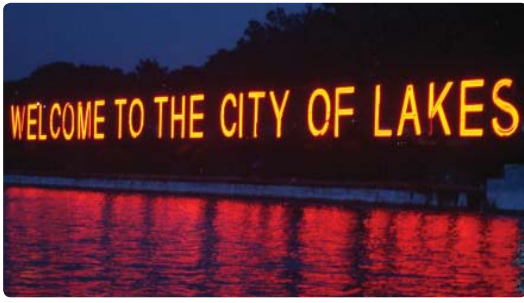
*For Participants other than India should transfer the amount in favour of **WATSANCAD SOLUTION – A/c No. 51032940551 with State Bank of Bikaner and Jaipur, Kolar Road, Bhopal, Swift Code : SBBJINBB04100000 and IFSC Code No. SBBJ0010850***

Note : Please ensure the registration at earliest, seats are limited to 30. Acceptance will be issued on first-cum-first serve basis.

Nomination deadline will be accepted 10th Sept 2015

In Association With

About Bhopal



Bhopal is situated in state of Madhya Pradesh, the largest state at the heart of the Indian sub-continent. State Capital Bhopal has a rich and diverse historical background which is a treasure of love for art and culture.

The capital city is situated just north of the beautiful Vindhya Mountain range and forms a boundary with its range of small hills.

Known as the City of Lakes, it is a pleasant blend of serenity and activity. Located on a gradient, the city has an amphitheater-like quality, with a fair sprinkling of landscaped gardens and lakes. Bhopal has an extensive, well developed transportation network, which makes it accessible from different parts of the country.

Climate

Bhopal will be having the average temperature levels (between 08°C / 46.4°F and 24°C / 75.2°F on average) is during month January will be cold weather.

Connectivity - Railways

Bhopal is junction rail head. Bhopal is well connected by train route to major cities of country from all directions i.e. Mumbai, Chennai, Bangalore, Hyderabad, Kolkatta, Ahemdabad, New Delhi etc.

Airport

The Raja Bhoj International Airport is located near the satellite suburb Bairagarh. Domestic direct flight services are being operated from New Delhi and Mumbai and vis a vis by Jet Airways, JetKonnnect and Air India.

Places to visit nearby Bhopal

1. **Bhojtal** - formerly known as Upper Lake, is a large lake which lies on the western side of the city. It is a major source of drinking water for the residents of the city. Along with the nearby Chhota Talaab, meaning small lake in Hindi, Bhojtal constitutes the so called Bhoj Wetland.
2. **Bhimbetka Caves** are about 35 kilometers from Bhopal city. They have evidence of dwellings of pre-historic man during the Paleolithic era.
3. **Taj-ul-Masjid** which literally means "**The Crown of Mosques**", is the largest mosque in Bhopal. The mosque is also used as a madrasah (Islamic school) during the day time. "Taj-ul-Masjid".
4. **Lakshmi Narayan Temple** is situated to the south of the Lower Lake, is a temple devoted to Vishnu and his consort Laxmi. It is also called Birla Mandir.
5. **Sanchi Budha Satupa** is about 50 kilometers from city center and it displays Bhopal's place in history from the times of Emperor Ashoka.
6. **Bhojpur** The magnificent temple of Lord Shiva at Bhojpur, which has earned the nomenclature of the Somnath of the East is known as the Bhojeshwar temple.

May Like to Visit for other places of Interest in Madhya Pradesh

1. **Khajuraho** : The Khajuraho Group of Monuments in Khajuraho, a town in the Indian state of MP, located in Chhatarpur District. Distance from Bhopal is 374 km. It is connected by Air via Delhi & also connected by trains the world famous Khajuraho has its own railway station. Panna Tiger Reserve is located 23kms from Khajuraho.
2. **Mandav** : Mandu is a celebration in stone, of life and joy, A tribute to the love shared between the poet-prince Baz Bahadur and his beautiful consort, Rani Roopmati. The nearest airport from Mandu is the 'Ahilyabai Holkar Airport' of Indore, located 99km away. The nearest railhead is located at Ratlam, 124 km from Mandu. There are also direct and regular buses available from places like Indore (via Dhar) and Bhopal. The distance from Bhopal is 280 Km
3. **Ujjain** : Ujjain is an ancient & holy city situated on the eastern bank of River Kshipra. It is also home to the Mahakaleshwar Jyotirlinga, one of the twelve Jyotirlinga shrines to the God Shiva. The nearest airport from Ujjain is the 'Ahilyabai Holkar Airport' of Indore, located 55 km away Ujjain Junction Railway Station is an important railway station in Western railway zone. Direct train and road services are available to Bhopal, Indore.
4. **Bandhavgarh National Park** located in Umariya district. Though Bandhavgarh do not have the airport facility for main stream Flights but Jabalpur city which is the nearest city to Bandhavgarh has good air connectivity with major cities of India. Reaching Bandhavgarh National Park from Delhi and Mumbai, Kolkata, Jaipur, Agra etc which connects to Jabalpur & Katni railway stations has so many train options.
5. **Kanha National Park** : Kanha National Park is one of the biggest park in MP, India. It is a Tiger Reserve also in the Mandla and Balaghat districts of MP, India. It is just 165 kms from park to Jabalpur city.

For more Details visit : <http://www.mptourism.com>