

# BABASAHEB MUKANE (M. TECH -ENERGY STUDIES)

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**A PASSIONATE SENIOR LEVEL ENERGY PROFESSIONAL IN SOLAR PHOTOVOLTAIC|ENERGY EFFICIENCY|ENERGY AUDIT AND MANAGEMENT| PROJECT PLANNING AND MANAGEMENT|SOLAR THERMAL**

**Location Preference:** India /UK/US/Canada/Australia/Singapore/Dubai/Saudi Arabia/Bahrain/Qatar/Abu Dhabi

**Master of Technology in Energy Studies** with over 12+ years of diverse and deep practical experience around the world in the solar photovoltaic, energy efficiency, project planning & management and solar thermal; familiar with project life cycle cost analysis. Exposure in using innovative approaches to sustainable design, techno-economics management, product development, improvements and implementation have resulted in millions of dollars in verified resource savings in energy sector.

Involved in \$15 million energy related projects around the world. Interviewed by TV channel and received the prestigious global listing awards in energy sector.

Certified solar designer, installer and holds several other certifications.

Responsible and significant practical experienced in project value chain of the Solar Power plant Engineering with excellence in grid connected, off-grid and micro grid applications. In-depth experience in solar thermal engineering with excellence in industrial process heating, cooling and cooking application.

Practical experience in Energy Efficiency within the thermal utilities, electrical utilities and energy performance assessment for equipment and utility systems for the residential, Commercial and Industrial sectors.

Hand-on knowledge of internationally recommended software -PVsyst, HelioScope, PVCAD, SketchUp & Skelion, Microsoft Project and AutoCAD

Well-versed with internationally recommended tool's for solar PV plant operation and maintenance such as PV Complete kit (PV 200 / PV 150) and energy efficiency measuring equipment's.

## Leadership Impact:

**Possess domain expertise** in project value chain, engineering, retrofit projects implementation, innovative approaches to user focused sustainable & affordable solutions; experience in creating new market opportunities in the sector of solar PV & solar thermal sector

**Energy conservationist**, ability in developing climate-friendly solutions, improving facility energy performance and reducing GHG emissions through the implementation of energy management program, conducting outreach, administering energy efficiency / clean energy programs

**Comprehensive knowledge of creating** energy awareness; exposure in achieving energy performance ratings to reduce risk & deliver savings while improving climate, accomplishment of influencing industries in switching to energy efficient products

**Hands-on experience in** sectorial, national & international development on energy efficiency technology & management system and information denomination

**Possess a distinguished & insightful diverse experience in initiating activities** to improve monitoring and process control to reduce energy costs; ensuring proper functioning and calibration of instrumentation required to assess level of energy consumption directly or indirectly

**Top-level efficient executive exhibits excellence** in solar & green energy sector and recognized as the 50 Most Influential Energy Leader

**Proven track record of energy industry project management;** exposure in managing the deployment of projects against plans & objectives to ensure commitments are met and ability in managing multiple, complex projects simultaneously

**Strong leadership and communication skills**, self-motivated with demonstrated problem-solving capability; self-starter with excellent presentation skills with constant attention to details and accuracy

**Dexterous in proposing energy related initiatives** that will add and enhancing energy optimization vision; defining energy focused roadmap for delivery and driving ongoing roadmap developments suggesting opportunities for growth

## Core Knowledge

⇒ Strategic Planning  
⇒ Solar Photovoltaic  
⇒ Energy Efficiency  
⇒ Energy Audit and Management  
⇒ Solar Thermal

⇒ Project Planning & Management  
⇒ Research & Development  
⇒ Life cycle cost analysis  
⇒ Client & Vendor Management  
⇒ Business Development

⇒ Technical Pre-Sales Support  
⇒ Administration, Bidding & Liaison  
⇒ IEC Standards  
⇒ Team Building & Leadership

## Skills

⇒ Feasibility Study  
⇒ Proposal  
⇒ Engineering & software's  
⇒ Procurement

⇒ Execution  
⇒ Erection and Commissioning  
⇒ Operation and maintenance  
⇒ Safety Management System

⇒ Energy Efficiency -Thermal and Electrical Utilities

### Key Highlights across the tenure:

- Played a vital role in spearheading various projects namely:
  - Globally handled 12 + MWp Solar Photovoltaic Projects: Roof Top, Ground Mount, Carport, Tracker, Smart Tree for Grid Connected, off grid and microgrid application with help of net billing, net metering, Zero Export and self-consumption concept.
  - Solar Thermal 5000 + m<sup>2</sup>, used for IPH, cooling and cooking application with help of FPC, ETC and CST's Technology
- Successfully handled the overall project proposal of approximately \$15.0 Million
  - Solar Photovoltaic \$ 9.8 Million
  - Energy Audit & Management proposal submitted \$ 3.0 Million annually energy saving
  - Solar Thermal \$ 1.5 Million
  - Water Desalination \$ 0.02 Million
- Deftly identified Solar Potential and energy efficiency in Baramati Agro Ltd.
  - Overall potential 9 MW under net metering policy and 5.0 MW project is approved by Management with price benefit of \$ 0.75 million annually.
  - Adroitly conducted Energy Audit for Baramati Agro Ltd group industry which include Co-Generation Plant, Sugar Mill's, Distillery, Feed Mill's, Poultry and chicken processing plant, resulting in energy saving \$ 3.0 Million annually as per energy conservation proposal submitted
- Adroitly conducted Energy Audit of Medica Clinic, Kingdom of Saudi Arabia resulting in energy saving \$ 0.013 Million annually
- Instrumentally conducted feasibility study, techno-commercial analysis, testing and performance for 1000 KG Plastic waste to oil generation for Elcom international Pvt. Ltd. and honestly submitted report to management, resulting in \$ 0.15 million capex investment saving for the setup of new plant and machinery.
- Lead efforts to identify project cost savings opportunities and manage adroitly in Megawatt Solutions Pvt Ltd resulting in saving project price \$ 0.1 million profit to company
- Skillfully developed & internationally patented **Enersun Curved Linear Fresnel Concentrator**.

### PROFESSIONAL EXPERIENCE - INDIA AND KINGDOM OF SAUDI ARABIA

**Since June 2019 | Afaq Energy Company, Subsidiary of United Real Estate Developers Co, Kingdom of Saudi Arabia | Chief Technical Officer -Solar PV, Energy Efficiency, Solar Thermal & Water Desalination**

Brand: "Sky Energy; Solar PV -Roof top 500 kWp, Microgrid roof top 1.5 MWp with 3.0 MWh Storage, Carport 3.3 MWp | Energy Efficiency -Hospital | Water Desalination -50m<sup>3</sup> Per day | Solar thermal-200 m<sup>2</sup>

**July 2018 – May 2019 | Baramati Agro Ltd, Pune | Project Leader–Energy Efficiency and Solar Power Projects**

Feasibility study, techno commercial analysis & bidding of Solar PV -Roof top 5.0 MWp | Energy Efficiency -48 MW Cogeneration Plant, 2 Nos Sugar mills 7500 TCD & 5000 TCD, 160 KPD Distillery, 5 Nos Feed Mill's, 7 nos Poultry, chicken processing plant

**Feb 2017 – Jun 2018 | Megawatt Solutions Pvt. Ltd., New Delhi | General Manager – Engineering & Projects**

Solar Thermal 3230 m<sup>2</sup> for IPH | Solar PV: 1.0 MWp tracker, Smart Tree single axis tracking – 5 nos @ 6.5 kWp each

**Jan 2011 – Feb 2017 | Enersun Power Tech Pvt Ltd subsidiary of Laxmi Organic Industries Ltd, Mumbai | Chief Manager-R&D, Engineering & Projects**

300 m<sup>2</sup> – 8 Lakhs kCal/day | Solar PV: 500 kWp/Energy Efficiency -chemical industry and residential quarter of staff

**Jan 2010 – Jan 2011 | Gadhia Solar Systems Pvt. Ltd, Mumbai | Technical Manager – Engineering & Projects**

Solar Thermal -180 m<sup>2</sup> for IPH | Solar PV: 50 kWp solar straight light

**Jan 2009 – Nov 2009 | Thermax Ltd (Renewable Energy Growth Unit), Pune | Trainee Engineer– Engineering**

Solar Thermal – R&D, Testing and Engineering for 1300 m<sup>2</sup> for IPH

### Key Result Areas:

#### **Solar Photovoltaic -Inc. kWp - MWp & Solar Thermal Engineering: Handling project value chain**

- Conducting site assessment -analysis, radiation data research, Energy generation estimation for overall feasibility study
- Life cycle cost analysis - Inflow, outflow, profit, cumulative cash flow, NPV, debt finance & leveled cost of energy
- Preliminary Design -Uses, Capacity estimation, Analysis of Local Utility Codes, policy and Requirement, simulation, Analysis of Roof Space/ground and existing structure, CAD drawing / Basic PFD/ P&ID and bill material
- Detail Design-Module / plant layout, single line diagram /PFD/ P&ID, structure drawings, wind load & detailed simulation
- Procurement – System components, structure components and balance of plant
- Project Execution - Site preparation, installation, construction management, inspection, quality check, safety, budget monitoring and schedule management
- Inspection – PV 200/150 complete kit
- Erection & Commissioning -Co-ordination for clearance, documentation, certificates and handover
- O & M – Site visit and periodic status monitoring, spare replacement and management, data recording and analysis

#### **Energy Efficiency: Audit and Management**

- Conducting energy audits to evaluate energy use and to identify conservation and cost reduction measures for the residential, commercial and industrial sector, facility energy management system, implementing energy retrofit projects and improving facility energy performance.
- Performing in depth energy efficiency analysis for thermal utilities, electrical utilities and energy performance assessment for equipment and utility systems
- Identify and recommend energy savings strategies to achieve more energy efficient operation
- Perform energy modeling, measurement, verification, commissioning, or retro-commissioning

- Preparing written energy audit reports; presenting findings and proposing energy management program to business executives; preparing specifications for installation of energy conservation measures and life cycle analysis
- Continuously works on energy awareness, capacity building and developing clean energy projects that are secure and affordable for the clients.

#### **Project Management:**

- Responsible for planning, prepare budgets, monitor progress, keep stakeholders informed the entire way and overseeing projects to ensure they are completed in a timely fashion and within budget
- To set projects goals and vision with help to motivation of the entire team
- Predict resources needed to reach objectives and manage resources in an effective and efficient manner
- Manage contracts with vendors and suppliers by assigning tasks and communicating expected deliverables
- Provide project updates on a consistent basis to various stakeholders about strategy, adjustments, and progress
- Communicating with utilities & authority having jurisdictions regarding interconnection, permitting, & other regulatory compliance issues
- Use and continually develop leadership skills
- Develop spreadsheets, diagrams and process maps to document needs

#### **EDUCATION**

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- Master of Technology in Energy Studies from School of Energy Studies, Pune University, Pune with 65% in **Dec 2009**
  - Master of Science in Physics -Energy Studies from Shivaji University, Kolhapur (MH) with 64% in Apr **2007**
  - Bachelor in Physics from Shivaji College Barsi, Shivaji University, Kolhapur (MH) with 75% in Apr **2005**

#### **CERTIFICATIONS**

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- Diploma in AutoCAD Engineering From IDEMI, , MSME-Government of India, Mumbai
  - Microsoft Project Management from Synergy
  - Solar Design & Install- Ministry MSME-Government of India, IIT Mumbai and Steinbeis Solar Research Centre
  - Solar Installer - Saudi Electricity Company owned by Saudi Arabia Government
  - *Solar PV Software - PVSyst, HelioScope, PV\*SOL, SketchUp & Skelion and Auto Cad from Reojob Training & AEDEI*
  - OSHA 10-Hour Hazard Recognition for the General Industry Course from American Safety Council

#### **TECHNICAL SOFTWARE PURVIEW**

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- PVSyst- Preliminary and detail design, optimized tools, yield, initial and precise configuration, financial analysis, configuration used for kWp to MWp utility scale project, Simulation of trackers and bifacial modules, creating a 3 D scene, P50/90,8760 report generation & analysis, self-consumption and storage model
  - HelioScope -Mechanical and electrical design, keep out, shading and overlays for Fixed tilt, flush mount, ground mount and carport simulations, configuration used for kWp to MWp utility scale project
  - SketchUp and Skelion - Creating a 3 D scene, shadow analysis, optimization with skelion for the flush mount, ground mount and carport simulations, configuration used for kWp to MWp utility scale project
  - Auto Cad -Plant layout, FPD/ P&ID / SLD, importing and scaling google earth image, azimuth angle and shadow analysis tool and knowledge advance command for drafting
  - Proficiency in Microsoft Excel, Power Point, Project, Word and Outlook and proven ability to learn new software program

#### **PROFESSIONAL ENGAGEMENTS**

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- Interview on
    - Sam TV channel at Mega Prime Time program dated on 12 July 2018 at 09.30 to 10.00 pm
    - Zee 24 News TV channel at Nisargasaathi program dated on 27 June 2015 at 12.30 to 1.00 pm
  - Excellence awards for "50 Most Influential Solar Energy Leaders" and "50 Most Influential Green Leaders (Global lasting) at Taj Lands' End, Mumbai on
    - 26 Nov 2015 endorsed by Thought Leaders International, World Sustainability, CISCO, Stars Group and CHRO Asia
    - 18 Feb 2016 endorsed by Global Green Future Summit & Leadership Awards, World CSR Day
  - Contributed articles on Novel & Indigenously Developed Solar Concentrator Technology on Curved LFR in SUNFOCUS magazine published by Ministry of New and Renewable Energy Government of India
  - To attended and made presentation in several national and international conferences, seminars and workshops

#### **PERSONAL DETAILS**

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**Date of Birth:** 01<sup>th</sup> June 1981 | **Languages Known:** English, Hindi, & Marathi | **Location:** Pune, (MH) India