

Curriculum Vitae of Dr. Sudhir Kumar

Chief Executive, Solar Energy Consultant and Trainer, Pune, India https://greensolarguru.com/

Solar Power Technical, Financial and Policy Expert (345 MW grid solar and 1000 kW rooftop to credit), Experience of 30+ years in Solar power technical design, inspection, profitability evaluation, training and policy research

Delivered thousands of lectures as Renewable Energy Expert in

international and national conferences, trainings and TV/ radio programs

Experience

- Design, Profitability analysis, Training
- 06+ years (Annexure A)
- Policy, Regulation, Governance
- 18 years (Annexure B)
- Research, Development , Publication 06 years (Annexure C)

Oratory Skill

Provide phone consultancy as RE expert to global clients

Phone Consult

Areas of Expertise

- As Owner's Engineer to Solar Power Plant Owners
- Solar radiation assessment and site feasibility study
- Grid feasibility analysis and cost implications
- Selection of appropriate technology and technical specifications
- Shading analysis and estimates of energy generation
- Design configurations and technical viability study
- Profitability analysis e.g. IRR, DSCR, Payback etc. and Tariff determination
- Approvals, project scheduling and risk analysis
- Solar energy market assessment and investment decision report
- EPC contractor/vendor selection and construction supervision

As Lender's Engineer to Banks and Financial Institutions

- Pre financial closure due diligence
- Review and accept disbursement schedule
- Post financial closure inspections
- Issue drawdown certificates
- Post commissioning performance assessment

As Low Carbon Transition Advisor to Govt. and Donor Agencies

- Strategizing low carbon transition and socio-economic development
- Managing government/ donor's grants for socially oriented projects
- Remote village electrification survey, planning and implementation
- Green energy governance, management and reporting mechanism
- Green Energy planning, budgeting, policies, laws and regulations
- RPO, SPO and RE Certificate estimation
- Green energy taxes and financial incentives quantification
- Capacity building, training and institutional development

Education

Ph.D. (Solar Cells), IIT Bombay, Mumbai, India (1988) Master in Science (Physical Chemistry), Bihar University, Muzaffarpur, India (1980)

Major publications

Technical papers published in national and international scientific and refereed journals - 25 (Annexure D)

Advisory Role	 Committee Member on: Committee on "Preparation of master plan for development of waste energy in India" constituted by MNRE, Govt. of India, April 2003. Committee on "Maharashtra state bio-diversity strategy and action plan" constituted by YASHADA, Govt. of Maharashtra, October 2001. Advisory Committee on "Waste-to-Energy" constituted by the Government of Kerala, January 2001
Trainings Received	 Training on Waste to Energy, Black and Veach, Kansas City and University of Florida, Gainesville, USA. (11th May- 19th June, 1998) International Training on "Accounting and Financial Management in Government Sector" at National Institute of Financial Management", Faridabad. (11th November- 20th December 2002) USAID Energy Training Program on "Competitive Bidding for Private Sector Power Projects" at Administrative Staff College of India, Hyderabad. (25th-31st Jan, 1997) International Clean Energy Decision Support Center Training on RETScreen® Software at TERI, New Delhi. (19th May, 2005) MNRE Training Program on "Cost-benefit Appraisal of Renewable Energy Technologies for Power generation" at TERI, New Delhi. (16th-20th May, 2005)
Personal Details	Date of Birth: 15 October 1955, Country of Birth: India
	Contact Address: Flat No.: 8, Plot No.: 15, Mazda Deluxe Homes, Porwal Park, Tank Road, Shantinagar, Off: Alandi Road, Yerwada, Pune - 411006, India. Cell No. +91-9665020206, +91-8956806072, E-mail: drsk22@gmail.com
	Father's Name: Mr. Mansaram Prasad Nationality: Indian Marital Status: Married Interests: Research, Writing, Yoga
Languages	Proficient in Hindi, English and Marathi (reading, writing and speaking)

Energy Consultancy & Capacity Building				
& Capacity Building				
	29 March 2014 till date: Chief Executive, Green Energy Solutions, Pune			
	 Conducted series of Rooftop Solar training programs sponsored by GIZ, Germany in collaboration with RENAC, Germany and Steinbeis, India Advisor to rooftop company Elgris Solar Systems, Solapur. Instrumental in getting more than 1000 kW solar rooftop systems through them Freelance consultant as renewable energy and solar power expert 			
	10 November 2010 to 28 March 2014: Joint Director & Head,			
	 Center for Solar Energy, World Institute of Sustainable Energy, Pune, www.wisein.org Solar resource assessment and site feasibility study Solar PV & solar thermal power projects design and development Facilitation of 50 MW solar thermal and 95 MW solar PV power projects Lender's Engineer for 200 MW solar thermal power projects funded by the Power Finance Corporation Advisory support to Andhra Pradesh and Karnataka states in India on 'Devising the Methodology for Levying Green Energy Cess on Commercial and Industrial Electricity Consumers' Prepared solar road map and action plan for Karnataka state of India Partial support to projects on 'Preparation of Renewable Energy Road Map for Bihar, Tamil Nadu and Kerala' and MNRE/UNDP project on "Evolving Normative Guidelines for Revised Incentives for Off-grid 			
	Systems". List of consultancy projects undertaken: Annexure E			
	 19 February 2009 to 09 November 2010: Independent Consultant Adjunct Professor- School of Energy Studies, Pune University, http://physics.unipune.ernet.in/~energy/: Undertaken lectures for M. Tech. (Energy) course at Pune University as external faculty on Wave, Tidal, Geothermal and Waste energy in addition to Fuel Cells, Energy Scenario, Energy Planning & Policies, Regulations and Laws. 			
	Corporate Advisor: Various Companies • Advised 3 companies on a) Solar energy business development; b) developing and commercializing a new concept of waste-to-energy from industrial liquid waste; and c) biogas bottling plant to produce 8000 kg Bio-CNG per day for use as transportation fuel in vehicles			
	 Associate consultant, World Institute of Sustainable Energy (WISE), Pune, www.wisein.org, As associate consultant, managed following projects: Capacity Building of government energy agencies of six states namely Andhra Pradesh, Rajasthan, Himachal Pradesh, Chhattisgarh, West Bengal and Pondicherry" MNRE-USAID sponsored project Capacity Building of Karnataka State Government Energy Agency Advising States of Andhra Pradesh and Karnataka on "preparation of methodology for levying green energy cess on commercial and industrial electricity consumers" 			

Green Energy	Annexure B			
Governance	(Experience: RE Policy, Regulation, Governance)			
	 O1 December 2002 to 18 February 2009: General Manager (Admin, Finance, Pub & R&D), Maharashtra Energy Development Agency (MEDA), www.mahaurja.com, Pune As state level head, was responsible for: Managing Government Grants for implementation of rural energy programs/schemes on solar, wind, biomass, hydro etc. Budgeting, planning, coordinating and project sanctioning Heading various sections solar, R&D, biogas, biomass, waste-to-energy, finances and overall administration Handling regulatory matters such as Renewable Purchase Obligation Implementation of R&D projects Execution of capacity-building/mass-awareness program 			
	 Some of the notable achievements: Implemented remote village electrification scheme through solar home light in 240 un-electrified villages Managed distribution of 100,000 solar lanterns to suicide affected farmers in six districts of Vidarbha region in Maharashtra State Responsible to get the "Comprehensive Renewable Energy Policy of Maharashtra" dated 8 December 2005 issued through cabinet meeting Responsible to get the renewable financing policy "Urjankur Nidhi" dated 21 January 2006 issued through cabinet meeting Was instrumental in getting MERC RPO order (2006) and RPS order (2006) issued by filing petition, arguing the case Issued historic order to RPO obligants for compliance of MERC RPS order 16 Aug. 2006 that resulted into issue of MERC order Case No. 6 of 2006, August 7, 2009 (Annexure F) 			
	 17 December 1990 to 30 November 2002: Project Manager, Maharashtra Energy Development Agency (MEDA), www.mahaurja.com, Pune As Sectional Head responsible for: Implementation of solar, wind and biomass program under the Govt. of India scheme of IREP (Integrated Rural Energy Program) Heading survey team for assessment of RE potential in the state Project evaluation, pre-feasibility study, detailed techno-economics of projects and concept to commissioning expert support to pilot projects. 			

Renewable Energy Research & Develp.	Annexure C (Experience: RE Research, Development, Publication)		
	11 September 1989 to 16 December 1990: Sr. Scientific Officer, Biomass Research Centre, Shivaji University, www.unishivaji.ac.in, Kolhapur, Maharashtra Research and development activities related to biomass generation and utilization using fast growing, coppicing and high calorie fuel woods		
	11 February 1985 to 08 September 1989: Research Scientist, Nimbkar Agricultural Research Institute, http://nariphaltan.org/ , Phaltan, Maharashtra Worked on development of efficient and low-cost kerosene lamps, wood stove and biomass gasifier system for rural application to achieve local energy security		

Major	Annexure D		
publications	(Published Articles)		
	 M. Sharon, N.P. Sathe, Sudhir Kumar and S.R. Jawalekar, "Rechargeable Solar Battery - Pb₃O₄ Semiconductors" in "Renewable Energy Sources". International Progress Part-A. Edited T.N. Vegiroglu, Elsevier Science Publishers - Amsterdam, 1984. P. 321-330. M. Sharon, N.P, Sathe, Sudhir Kumar and S.R. Jawalekar, "Saur Viddyut 		
	Kosh - IV : Study of a Rechargeable Solar Battery with n - Pb ₃ O ₄ Electrodes", Solar Cells, 12 (1984) P.353-361.		
	3. M. Sharon, Sudhir Kumar, S.R. Jawalekar, "Characterisation of Pb ₃ O ₄ films by Electrochemical Techniques". Bull, Mater, Science. 8 (1986) - P. 415-418.		
	4. M. Sharon, Sudhir Kumar, S.R. Jawalekar, "Photoelectrochemical (P E C) Solar Cells with PbO _{2-X} Semiconducting Electrodes". Proc. Symp. Photovoltaic Mater and Devices, New Delhi, May 10-11 (1984). Ed. B.K. Das and S.N. Singh, Wiley Eastern Ltd., New Delhi P.405 - 418.		
	5. M. Sharon, Sudhir Kumar, S.R. Jawalekar, "Preparation of a thin film of Pb_3O_4 by thermal treatment of PbO_2 films". Thin slid films 195 (1991) - P.273-277.		
	6. M. Sharon, Sudhir Kumar and S.R. Jawalekar. "Photoelectrochemical studies on thin film Pb ₃ O ₄ photoelectrodes." Ind. J. Chem 28 (1989) P. 752-756.		
	7. A.K. Rajwanshi and Sudhir Kumar. "A lantern operable on liquidous fuel such as kerosene", Indian Patent filed on 30.10.1988, File No.839/Dec/88.		
	8. A.K. Rajwanshi and Sudhir Kumar. "Development of Improved Lanterns for rural areas". Published by Nimbkar Agricultural Research Institute, Phaltan 415 523, India. P.1-4, August 19189, Publication No. NARI-LAN-1 (1989).		
	9. Sudhir Kumar and S.H. Pawar. "Energy aspects of Biomass" Biomass Energy Seminar, 25th March, 1989. Kolhapur, India, Ed. S.H. Pawar, Shivaji University Press, P. 1-19.		
	10. Sudhir Kumar, J.V. Torane, U.S. Yadav, S. Kulkarni and S.H. Pawar "Some Studies on Polyculture Energy Plantation at Kolhapur" Presented at		

- 6th Annual Convention of Bioenergy Society of India, Madurai, India 29-31, 1990.
- 11. U.S. Yadav, Sudhir Kumar and S.H. Pawar. "Studies on Electrophytogram of Germinating Caesalpinia Separia Seeds", presented at 6th Annual Convention of Bioenergy Society of India, Madurai, 29-31 January 1990.
- 12. S. Kulkarni, Sudhir Kumar and S.H. Pawar "Studies on Low Power Electric Sources Harnessed with Kalanchoe Pennatum Leaves", presented at 6th Annual Convention of Bioenergy Society of India, Madurai, 29-31 January 1990.
- 13. S. Kulkarni, Sudhir Kumar and S.H. Pawar. "Low Power Batteries formed with Leucaena Leucocenphala Leaves" in Integrated Renewable Energy for Rural Development, ed. N. Saha, S.K. Saha, and M.K. Mukherjee, Solar Energy Society of India, Tata Mc. Graw Hill, New Delhi (1990) P. 448-451.
- 14. Sudhir Kumar, S. Kulkarni, U.S. Yadav and S.H. Pawar. "Fuelwood Survey of Kolhapur District" in Integrated Renewable Energy for Rural Development, ed. H. Saha, S. K. Saha and M.K. Mukherjee, Solar Energy Society of India, Tata Mc. Graw Hill, New Delhi (1990) P. 382 385.
- 15. Sudhir Kumar, J.V. Torane and K.S. Dhaygude "Implementation of Integrated Rural Energy Planning Programme in Gadhinglaj Block". Proceedings of National Solar Energy Convention 16th December 1991, Pune, India.
- 16. Sudhir Kumar, S.J. Nandre and H.S. Nimbalkar. "Implementation of Nightsoil based large size Biogas Programme in Maharashtra" in New Dimensions in Renewable Energy, Ed. N.K. Bansal, Solar Energy Scty. of India, Tata Mc. Graw Hill, Publishing Company Ltd., New Delhi (1992). P. 393-396.
- 17. Sudhir Kumar, "Biogas from Pressmud A case study" Bioenergy News ed. K.K. Singh, Published by National Bioenergy Board, Ministry of Nonconventional Energy Sources, New Delhi Vol.1, No.2, P.15-17, 1996.
- 18. Sudhir Kumar, "Renewable Energy Devices: After Sales Needed" IREDA NEWS, Vol 8, No.1, P.65-67, Ed. V. Bakhtavatsalam, Published by IREDA, New Delhi 1997).
- 19. Sudhir Kumar, "Role of Nodal Agency in Bioenergy Projects" proceedings of Workshop on "Bioenergy for Industries", IIT, Mumbai 5-6 May 1997.
- 20. Sudhir Kumar, "Renewable Systems Energy Applicability and Relevance" Energy Scenario (Energy Magazine), Vol 2, No. 1, P. 29-32. Ed. R.N. Engineer, Mumbai (1998).
- 21. Sudhir Kumar, "Technology Options for Municipal Solid Waste to Energy Project", TERI Information Monitor on Environmental Science, Vol 5, No.1, June 2000, p. 1 11
- 22. Sudhir Kumar, "The Power of Waste", In The New Energy Economy, Ed. by G. M. Pillai, Published by World Institute of Sustainable Energy, Pune, India (2005).
- 23. Sudhir Kumar, "Renewable Energy Part 1: Investment Opportunities Galore", Corporate India, p. 69-72, November 30, 2009.
- 24. Sudhir Kumar, "Renewable Energy Part 2: Investment Opportunities Galore", Corporate India, p. 33-36, December 15, 2009.
- 25. Sudhir Kumar, "Reasons for Failure of Solar PV Companies Globally: Lessons for Investors", Energy Future, Vol. 3, Issue 3, p. 52-56, April–June 2015, Pub. TERI, India

Annexure E

(Consultancy Works Completed)

(Consultancy Works Completed)			
SI. No.	Name of Project or Assignment	Name of Client	
As Tear	n Leader: Solar Projects		
1.	Preparation of feasibility studies/ DPR for development of solar thermal power project at Morwada, Banaskantha, Gujarat – 50 MW	NTPC Ltd, India	
2.	Preparation of DPR, financial model, EoI / tender document and analysis thereof for setting up of grid-connected demonstration solar power project at Sautada, Tal. Patoda, Dist. Beed in Maharashtra – 5 MW	Maharashtra Energy Development Agency (MEDA), Pune, Maharashtra, India	
3.	Preparation of DPR for solar PV grid interactive power plant at village Rampurva, West Champaran, Bihar – 5 MW	Beltron Telecommunication Ltd (BELTRON) Patna, Bihar, India	
4.	Consultancy services for preparation of DPRs for grid connected solar PV power plants around the existing hydro power stations of HHEP Burla, RHEP Rengali, and UIHEP Mukhiguda in Odisha – 24 MW	Odisha Hydro Power Corporation Ltd (OHPC), Odisha State, India	
5.	Lender's engineer for KEVPL's solar thermal power project in Rajasthan - 100 MW	Power Finance Corporation Ltd, India	
6.	Lender's engineer for DSPL's solar thermal power project in Rajasthan - 100 MW	Power Finance Corporation Ltd, India	
7.	Preparation of DPR to establish solar PV power project in UAE at Umm-al-Quwain - 50 MW	Deccan Water Treatment Pvt. Ltd.	
8.	Lender's engineer for Responsive's solar PV power project in Gujarat - 25 MW	Power Finance Corporation Ltd, India	
9.	DPR on Solar PV Power Project at Banthu, Block Bhagwanpur, District Vaishali, Bihar - 2.5 MW	SABR Controls Pvt. Ltd. Mumbai	
10.	Technical validation of a bid document for a solar PV project in Erode, Tamil Nadu - 1 MW	Metropolitan Equipments & Consultants Pvt. Ltd	
11.	Preparation of a solar road map for Karnataka, India	Karnataka Renewable Energy Development Ltd (KREDL), Karnataka State, India	
12.	Consultancy for 'effective implementation of GOs/ building by-laws in States/ municipal corporations for mandatory installation of solar water heating systems in functional buildings for southern & western Regions of the country (India)'	MNRE/UNDP/GEF/Global solar water heating project	
13.	Due diligence of crystalline PV and thin-film PV technologies in India	WISE initiative	
14.	Consultancy for "market development of concentrator solar technologies (CSTs) for community cooking/ cooling/ laundry applications in hospital and hospitality sectors"	MNRE/UNDP/GEF/ Concentrated Solar Heating Project	
15.	Preparation of a bid document, undertaking bid evaluation, identifying equipment supplier, preparing purchase order and monitoring/ supervision of establishing solar resource measuring stations in Maharashtra	Maharashtra Energy Development Agency (MEDA), Pune, Maharashtra State, India	

Δs Tean	n Leader: Renewable Energy Research and Cap	acity Building		
16.				
10.	State Nodal Agencies and Preparation of Road Map for Capacity Building	MNRE and USAID, India		
17.	Project on "Capacity Building and Strengthening of KREDL	Karnataka Renewable Energy Development Limited		
18.	Proposal for Operationalising Green Energy Cess in Karnataka	Karnataka Renewable Energy Development Limited		
19.	TH Nathacaka	Non-Conventional Energy		
15.	Creation of Clean Energy Fund by Levying Green Energy Cess in Andhra Pradesh	Development Corporation of Andhra Pradesh Ltd (NEDCAP) Hyderabad		
As Tean	n Member: Renewable Energy Research			
20.	Renewable Energy Potential Assessment and	Department for International		
	Renewable Energy Action Plan for Bihar	Development (DFID), Govt of UK		
21.	Action Plan for Comprehensive Renewable Energy Development in Tamil Nadu	Shakti Sustainable Energy Foundation, New Delhi and CII (Southern Region)		
22.	The Energy Report-Kerala 100% Renewable Energy by 2050	World Wildlife Fund -India		
23.	Comparative Evaluation of Incentives to RE based Grid and off-grid Systems and Evolving Normative Guidelines for Revised Incentives for Off-grid Systems	MNRE, GoI (Under UNDP Sponsored "Access to Clean Energy" Project)		
	(Major Trainings and Confe	rences)		
1.	Training on Grid Connected Rooftop PV Systems			
	Technical & Economic Fundamentals at New Delhi, Ahmedabad, Jammu, Shimla, Silvassa, Dehradun, Mandi (2018-19) (84 Lectures)	GIZ and RENAC (Germany) and Steinbeis (India)		
2.	Train-the-Trainer Seminar on Rooftop Solar For Grid Engineers at New Delhi (2018) (5 Lectures)	GIZ and RENAC (Germany) and Steinbeis (India)		
3.	Training on Rooftop Solar Technology, Financial Analysis and Govt. Policies (2015) (3 Lectures)	World Institute of Sustainable Energy, Pune		
4.	Training on Solar Water Pumping Systems Technology, Policies and Financial Viability (2014) (16 Lectures)	School of Energy Studies, University of Pune		
5.	Training on Solar PV Power Plant Designing and Financial Analysis (2013) (5 Lectures)	World Institute of Sustainable Energy, Pune		
6.	Training to Govt Officers on "Market Development of Concentrator Solar Technologies (CSTs) for Community Cooking/ Cooling/ Laundry Applications in Hospital and Hospitality Sectors" (2012-14) (40 Lectures)	MNRE/UNDP/GEF		
7.	Training to Govt Officers of Six States on "Strengthening of State Nodal Agencies and Preparation of Road Map for Capacity Building" (2009-10) (35 Lectures)	MNRE and USAID		
8.	Training to Govt Officers on "Effective Implementation of GOs/ Building By-Laws in Municipal Corporations for Mandatory Installation of Solar Water Heating Systems in Southern & Western Regions of India" (2012) (40 Lectures)	MNRE/UNDP/GEF		
9.	Lectures in Conferences, Expos and Seminars (1990-2019) (Approx. 350 Lectures)	MNRE, MEDA, FICCI, CII, GIZ, etc.		



MAHARASHTRA ENERGY DEVELOPMENT AGENCY

(A Government of Maharashtra Undertaking)



Most Urgent

BP-2008/CR-02/RPS-02/4363

2/8/2008

The Managing Director
Maharashtra State Electricity Distribution Company Limited
5th Floor, Prakashgad
Bandra (East),
Mumbai 400051

Sub: Enforcement for the year 2007-08 towards shortfall in procurement of renewable energy.

Ref: 1

1) MERC RPS order dtd. 16-08-2006

 "Operational Framework for Renewable Purchase Specification (RPS) in Maharashtra"- March 2008

Sir,

- This has reference to Clause nos. 2.10.5 to 2.10.9 of the RPS order dt.16-8-2008 issued by Hon. Commission and Clause no. 4.4 of the Operational Framework for Renewable Purchase Specification (RPS) in Maharashtra – March 2008.
- 3. In line with the operational framework, the MEDA issued instructions to all the stakeholders to submit data in prescribed formats. After receiving the data as above and compilation of RPS data for FY 2007- 08 is tabulated below based on the data provided by MSLDC and respective distribution licensees in Maharashtra.

Licensees	Energy Input*	RPS Obligation (4%)	RE Procured# (MUs)	Shorfall (MUs)	Actual % Achieved
MSEDCL	76451.828873	3058.073155	2658.526562	399.5465929	3.48
TPC	2688.678187	107.5471275	125.0041	-17.4569725	4.65
REL	9207.276798	368.2910719	1.02	367.2710719	0.01
BEST	4608.469043	184.3387617	3.494325	180.8444367	0.08
MPECS	601.020850	24.040834	0	24.040834	0.00
Total	93557.273751	3742.29095	2788.044987	954.245963	

^{*} Energy Input Data obtained from MSLDC

[#] RE Procurement Data received from respective licenses.

Licensees	Shorfall (MUs)	Penalty (Rs in Crores)
MSEDCL	399.5465929	199.773296
REL	367.2710719	183.635536
BEST	180.8444367	90.4222184
MPECS	24.040834	12.020417
Total	954.245963	485.851468

You are, therefore, requested to deposit the penalty amount of Rs 199.7732960 crores (Rupees One hundred ninety nine crores seventy seven lakhs thirty two thousand nine hundred sixty only) within stipulated time of 15 days from issue of this demand note in the form of demand draft drawn in the favor of Maharashtra Energy Development Agency, payable at Pune.

Thanking you

Yours truly,

(Dr. Sudhir Kumar) General Manager (R&D)

C.C

The Secretary
Maharashtra Electricity Regulatory Commission,
World Trade Centre, Centre No.1,
13th Floor, Cuffe Parade, Mumbai-400005

The Principal Secretary (Energy), Govt. of Maharashtra, Industry, Energy & Labor Dept, Mantralaya, Mumbai-32

The Managing Director, TATA Power Company Limited Bombay House, 24, Hormi Mody Street Fort, Mumbai 400001