

MR. RAHUL RAJU DUSA

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EMPLOYMENT RECORD

Organization	Period of service and length	Designation
Technical University of Denmark, Copenhagen	16 March 2020 – Present (1 month)	Senior Expert – Energy Efficiency, UNEP-DTU Partnership
The Energy and Resources Institute (TERI), New Delhi	05 August 2016 – 24 February 2020 (3 Years 6 Months 20 Days)	Bureau of Energy Efficiency (BEE) Certified Energy Auditor (EA-22005) and Associate Fellow, Industrial Energy Efficiency Group
UNFCCC Climate Technology Centre & Network (CTCN), UN City, Copenhagen	September 2018 – March 2019 (6 months)	Climate Change Mitigation Expert / Seconded
The Energy and Resources Institute (TERI), Bangalore, India	15 June 2012 – 04 August 2016 (4 Years 1 Months 21 Days)	Bureau of Energy Efficiency (BEE) Certified Energy Auditor (EA-22005) and Research Associate, Industrial Energy Efficiency Group

CAREER ABSTRACT

Rahul has over 7 years of experience in planning, managing, implementing, monitoring and verification of climate change mitigation projects under energy efficiency and renewable energy.

March 2020 – Present: Rahul is currently delivering services as a Senior Expert – Energy Efficiency, focusing primarily on the building sector. He is presently supporting the municipalities of developing countries in strengthening their capacities, institutional frameworks and monitoring systems promoting energy efficiency.

June 2012 – February 2020: Rahul was working as a Bureau of Energy Efficiency (BEE) Certified Energy Auditor with TERI, India. He has wide experience in accounting and mitigating GHG emissions in the energy intensive industries and building sectors by conducting Comprehensive Energy Audits. He has also supported donor agencies and financial institutions such as World Bank, Shakti Sustainable Energy Foundation and Small Industries Development Bank of India (SIDBI) in identifying, promoting and evaluating suitable energy efficient technologies for the local municipalities, Micro, Small and Medium Enterprises (MSME) sectors in India, Guyana, UAE and Uzbekistan.

Rahul excels in developing outreach plans to communicate key messages and results of the projects to have a transformative impact. He was involved in several policy formulation and policy driven projects to support local and national government bodies in order to achieve their climate change mitigation goals and enhance cost effective outcomes. He also has showcased his capability in taking up Solar

Photo Voltaic (PV) projects in Andhra Pradesh and Karnataka, India. His major achievements during this period are:

- Contributed in 9 national and state level policy based assignments in energy efficiency, solar energy, water, industrial productivity and urban transportation till date. These led to positive impact on both state and national level regulatory frameworks.
- Successfully delivered 56 Comprehensive Energy Audits and Energy Management projects for several industries and buildings in India, Sharjah, Ras-Al-Khaimah, Fujairah, Uzbekistan and Guyana, identifying 98768 equivalent tonnes of annual carbon emission reduction potential till date.
- Supported Bureau of Energy Efficiency, Ministry of Power in conducting 26 Baseline, Monitoring, Verification and Mandatory Energy Audits of Designated Consumers under Perform Achieve Trade (PAT) Mechanism in India to enhance cost effectiveness of improvements in energy efficiency in energy-intensive large industries and facilities.
- Completed resource assessment and execution with continuous monitoring and data analysis of solar photovoltaic rooftop systems in 47 government educational institution buildings of Karnataka under net/gross metering system which is funded by Hindustan Aeronautics Limited CSR initiative. 3.1 Lakh kWh of electricity has been generated till date.

September 2018 – March 2019: Rahul worked as a Climate Change Mitigation Expert under a Secondment Program with the CTCN at the UN City, Copenhagen. He was particularly lending his experience in the energy efficiency and renewable energy sector. His role included supporting the mitigation portfolio of the Asia Pacific region by engaging in Response Plans and Technical Assistances. Working at CTCN, he has gained decent understanding on different missions, institutional structure, areas of work on cross cutting issues, basic funding and operational policies of institutions like GEF, GCF, etc. His recent achievements include:

- Reviewed Response Plans and implemented two Technical Assistance (TA) projects on National Certification Scheme for Energy Auditors in Bangladesh and Pakistan as capacity building programs under energy efficiency. .
- Assessed and identified suitable energy efficiency technologies to be promoted, relevant for 11 countries in the Asia Pacific region for Impact Investor funding.
- Capitalizing funding opportunities by preparing Concept Notes for the developing countries in the Asia Pacific region, focusing on the need for energy efficiency technologies and capacity building interventions for the industries and buildings.

ACADEMIA

- 2012 Master of Technology (M.Tech) in Renewable Energy Engineering and Management from TERI School of Advanced Studies, New Delhi, India; Specialization includes Energy Efficiency and Management, Solar Photo Voltaic and Green Buildings.
- 2010 Bachelor of Technology (B.Tech) in Chemical Engineering from Osmania University, Hyderabad, India.

CERTIFICATION & TRAINING

- 2019 Certificate of Completion in “Introduction to the Global Environmental Facility (GEF)” by Global Environmental Facility (GEF) and World Bank Group Open Learning Campus.
- 2015 Certified Energy Auditor, Bureau of Energy Efficiency, Ministry of Power, Government of India.

- 2014 Statemet of Accomplishment with Distinction in “Fundamentals of Global Energy Business”, University of Colorado System, Colorado, United States of America
- 2011 ACARA Challenge – “Food Energy and Water Security”, Institute on the Environment, University of Minnesota, United States of America.
- 2010 Certificate of Accomplishment in Summer School Programme on “Meeting the Challenges of Advanced Energy Systems for the Future” under the scholarship of German Academic Exchange Service (DAAD), Technical University, Berlin, Germany.

KNOWLEDGE & SKILL SET

- Adept in use of Microsoft Office Word, Excel, Power Point.
- Basic working knowledge on RETScreen – Clean Energy Management Software system, PVSyst – Solar PV simulation software, TRANSYS and EnergyPlus
- Self-motivated individual with ability to adapt to challenging situations and covey ideas and outcomes with exceptional presentation skills
- Efficient management of project and travel expenses

PUBLICATIONS

- Effective use of Existing Efficient Variable Frequency Drives (VFD) technology for HVAC systems – Consultative Research Case Studies, 7th International Conference on Advances in Energy Research (ICAER), IIT Bombay, 2019
(Paper is accepted and will be published in Springer Energy Proceedings post conference presentation during 10-12 December 2019)
- Understanding Recent Market Trend of the Energy Efficiency Scheme – Thermal Power Plants, International Scientific and Technical Conference “Energy Efficiency – the Basis of the Energy Development of Uzbekistan”, Tashkent, Uzbekistan, 2018.
[\(Paper link\)](#)
- Energy Efficiency Contrivances Under Aspects of Climate Change Mitigation in Thermal Power Plants, International Journal of Energy and Power Engineering, 2018.
[\(Paper link\)](#)
- Study on the sustainability of Biomass based power generation in Karnataka, Karnataka Electricity Regulatory Commission, Bangalore, 2013.
[\(Report link\)](#)
- Perform Achieve Trade (PAT) Mechanism, Its Achievability and Impact on Industrial Energy Efficiency, All India Seminar on “Strategies for Energy Security”, The Institution of Engineers (India), 2013.
[\(Paper link\)](#)
- Widening the coverage of PAT Scheme Sectorial Manual – Zinc Industry, Shakti Sustainable Energy Foundation, 2012.
[\(Report link\)](#)

ORGANIZATIONAL EXPOSURE AND WORK EXPERIENCE

Technical University of Denmark
Senior Expert – Energy Efficiency

March 2020 to Till Date

Job Responsibilities:

- Undertake comprehensive analysis and systematization of the main policy issues associated with energy efficiency in buildings in countries and cities of different climatic zones, including addressing building codes, standards and labelling;
- Undertake "walk through"- type of audits in pilot buildings and identify short and long-term technical and financial potential of energy efficiency implementation measures, specifically in the areas of lighting, heating, cooling, ventilation and the wider building envelope.
- Conduct dynamic energy simulations and analyse barriers to project development, and identify potential options to unlock action;
- Oversee and quality assure third party energy measurements and energy audits in different types of buildings in different climatic zone cities and countries;
- Prepare project pre-feasibility studies, including simple financial analysis;
- Support local authorities in pre-assessments of potential and opportunities for energy efficiency in buildings applications in different regions and countries;
- Synthesize, analyse, and document experiences and evidence and contribute to country- or city-level learning, by providing expert technical assistance, advice on relevant measures, training and other direct support to city authorities;
- Develop best practice guidance to be used for replication for wider use;
- Contribute to strengthening the section and UDP's work with qualitative and quantitative research methods, processes, tools and software;
- Supervise assistants and students and closely work with the District Energy team;
- Initiate, contribute to or lead resource mobilization activities, including project concept development and preparation of project proposals;
- Cultivate and maintain effective international networks and partnerships with country partners, partner agencies, finance institutions and private sector;
- Represent UNEP DTU Partnership and the section at expert meetings, regional consultations, workshops, and seminars.

Relevant Projects Undertaken:

Name of the Activity: Strengthen capacities, institutions, regulatory frameworks for public policies and monitoring systems that promote energy efficiency in municipalities of developing countries.

Client: Municipalities of Argentina and Uruguay

Positions held: Team member

Activities performed:

- ✓ Designing and executing data collection techniques and surveys for mapping energy efficiency characteristics of public buildings.
- ✓ Developing building energy efficiency self assessment tool for the municipalities to strengthen their capacities under Euroclima+ and enable them to take informed measures for GHG mitigation.
- ✓ Applicability and techno-economic feasibility studies for Energy Management Systems in municipal facilities (municipal water systems, public buildings, etc.)
- ✓ Guiding the municipalities in strategic implementation of energy efficiency actions, focusing on benefits of project bundling.

THE ENERGY AND RESOURCES INSTITUTE (TERI)

Associate Fellow
Research Associate

August 2016 to Till Date
June 2012 to July 2016

Job Responsibilities:

- **Project Origination and Business Development**
 - ✓ Identifying, securing and managing projects, its associated deliverables for energy efficiency and renewable energy projects in the national and international portfolio of the organization.
 - ✓ Develop outreach plans to communicate key messages to the right audience to enable the results of the project have a transformative impact through technical publications and organizing stakeholder consultation workshops.
 - ✓ Support Client management and coordination.
- **Project Implementation**
 - ✓ Proposal design and project negotiation
 - ✓ Execute approved projects through relevant stakeholder consultation.
 - ✓ Adopt low carbon strategies by methodology development, strategic planning and resource management.
 - ✓ Identify skills and budget needed for the project.
 - ✓ Present identified observations and recommendations to the clients.
- **Support Government bodies**
 - ✓ Support state and national government agencies in Due Diligence activities of various stakeholders in energy sector on policy and regulatory compliances, monitoring and verification studies, and validating industrial contributions towards GHG emission reductions.
 - ✓ Initiate and engage national and state government bodies for several core ground activities useful for framing impactful climate change policy and regulatory frameworks.
- **Capacity Building**
 - ✓ Hold internal training on energy efficiency for competence development of client's staff.
 - ✓ Mentoring and coaching young researchers and students of TERI University.

Relevant Projects Undertaken:

- **Name of the Activity:** Energy efficiency and GHG emission reduction studies in energy intensive industries, commercial buildings, airports, defence sector and hotels.
Client: Multiple clients. Few major ones are listed as follows –
 - ✓ RAK Ceramics, Ras Al Khaimah
 - ✓ Desalination and water supply plants, SEWA, Sharjah
 - ✓ Refineries (Essar Oil Limited – Vadinar Refinery, Gujarat; Bharat Petroleum Corporation Limited – Kochi, Kerala)
 - ✓ Lafarge and Holcim group cement plants, all India
 - ✓ Defence Research and Development Organization – Bangalore, Karnataka
 - ✓ Airports (Chhatrapati Shivaji Maharaj International Airport / GVK Airport – Mumbai, Maharashtra and Rajiv Gandhi International Airport/GMR Airport – Hyderabad, Telangana)
 - ✓ Hotels and commercial buildings (Grand Hyatt Hotel – Goa, Maharashtra; Express Avenue – Chennai, Tamil Nadu)
 - ✓ Pharmaceutical sector (Biocon Limited – Bangalore, Karnataka; Cipla – Goa, Maharashtra)**Positions held:** Team leader / Team member
Activities performed:
 - ✓ Participated as a team lead and team member, in comprehensive energy audits for 56 clients under both public and private entities, covering different energy intensive sectors.

- ✓ Different sectors include, Refineries, Cement, ChloroAlkali, Ceramic, Glass, Paper and Pulp, Aluminium, Iron and Steel, Airports and aircraft sections, Defence, Pharmaceutical industries, commercial buildings and Hotels
 - ✓ Reviewed existing standards, technical data of third party equipment suppliers and conducted performance evaluation of all major process and space conditioning demands and associated auxiliary equipment.
 - ✓ Provided consultancy services for Greenfield and Brownfield projects particularly in building sector. Conducted extensive ventilation, heating and cooling load analysis for commercial buildings.
 - ✓ Identified, recommended and supported implementation of energy saving and GHG emission reduction measures by providing in depth technical and financial feasibility reports to the clients.
 - ✓ Technical support on energy efficient equipment selection to the clients on project basis
- **Name of the Activity:** Load reduction studies for the power sector industries.
Client: Multiple clients. Few major ones are listed as follows –
 - ✓ Sharjah Electricity and Water Authority (SEWA), Sharjah
 - ✓ GMR Energy Limited (GEL) – Kakinada, Andhra Pradesh
 - ✓ GMR Vemagiri Power Corporation Limited (GVPGL) – Vemagiri, Andhra Pradesh
 - ✓ GMR Basin Bridge - Chennai, Tamil Nadu
 - ✓ Lanco Tanjore Power Company Pvt. Ltd, - Tanjore, Tamil Nadu
 - ✓ TCPL – Gummidipodi, Chennai,
 - ✓ Bangalore Electricity Supply Company (BESCOM) – Bangalore, Karnataka etc.**Positions held:** Team leader / Team member
Activities performed:
 - ✓ Optimization operations at the generation side and demand side load assessment for power plants and power distribution companies
 - ✓ Mapping and reduction of GHG emissions by monitoring energy load patterns, identifying energy efficiency measures and providing technical - economical recommendations for energy load reduction.
 - ✓ Prepared Detailed Project Reports (DPR) for grid connected Solar PV plants to offset power plant's auxiliary power consumption.
 - **Name of the Activity:** Perform Achieve Trade (PAT) Mechanism.
Client: Multiple clients. Few major ones are listed as follows –
 - ✓ Bureau of Energy Efficiency (BEE), Government of India
 - ✓ Energy Efficiency Services Limited (EESL), Government of India
 - ✓ Several Designated Consumers (DCs)**Positions held:** Team leader / Team member
Activities performed:
 - ✓ Analysed the energy consumption trends and energy saving potentials of 60 Designated Consumers (DCs). Studied the achievability of energy consumption targets for the 8 sectors (aluminium, cement, chloro-alkali, fertilizer, iron and steel, paper and pulp, textile and refinery).
 - ✓ Conducted 26 Baseline studies, Mandatory Energy Audit studies, Monitoring and Verification Studies for various DCs.
 - ✓ Represented BEE for Baseline Verification Studies of DCs to define baseline production and specific energy consumption figures by listing down measurable and traceable documents and reviewing their historical energy and production parameters.
 - ✓ Represented BEE for Mandatory Energy Audit studies, to collect major energy consuming equipment inventory and their operating parameters. Carried out detailed investigation/measurements of major equipment and key areas using sophisticated portable instruments in the prescribed methodology.

- ✓ Identified potential energy saving and CO₂ emission reduction potential and recommend suitable measures for the DCs to achieve their set PAT targets
 - ✓ Represented BEE for Monitoring and Verification Studies of various DCs to verify and validate their specific energy consumption targets compliance. Facilitated in verifying prescribed forms to the DC as per PAT Rules 2012, for submission to BEE and SDA.
- **Name of the Activity:** Widening the coverage of PAT scheme.
Client: Shakti Sustainable Energy Foundation (SSEF)/ Climate Works Foundation
Positions held: Team member
Activities performed:
 - ✓ Collected information on large and medium scale energy intensive industrial sectors primarily in terms of their numbers, consolidated energy consumption, production data, product profile etc. (copper and zinc sector industries)
 - ✓ Prepared broad overview of the sub-sectors by extensive interaction with SSEF officials, industrial plants, associations and members.
 - ✓ Detailed analysis on energy efficiency opportunities was done for setting the specific energy consumption reduction targets.
 - ✓ Assessed the threshold limit in energy consumption (mtoe) in individual sector for their possible inclusion in the subsequent cycle of PAT scheme.
 - ✓ Organized concluding workshop and presented the findings for stakeholder consensus.
 - **Name of the Activity:** Energy Efficiency Regulatory Framework Development and Implementation.
Client: Ethiopian Electricity Agency (EEA)
Positions held: Team member
Activities performed:
 - ✓ Contributed in institutional capacity building programs for EEA by supporting them in establishing adequate legal framework for energy efficiency regulation, standards and labelling.
 - ✓ Supported TERI team in Ethiopia by conducting desk research, review of reports and data collected, preparing training materials for capacity development programs.
 - **Name of the Activity:** Measurement and Verification studies of MSME sector industries.
Client: Small Industries Development Bank of India (SIDBI)
Positions held: Team leader
Activities performed:
 - ✓ Supported SIDBI in Technology and Quality Upgradation (TEQUP) Scheme, which enhances competitiveness for manufacturing industries through energy efficiency and product quality in the MSME sector.
 - ✓ Assessed compliance status of TEQUP Scheme for MSME industries in Hubli and Belagavi districts of Karnataka.
 - ✓ Conducted measurements to verified estimated energy savings, productivity and equivalent CO₂ emissions reduction.
 - ✓ Analysed and reported the efficacy of incentives availed by the industries for the energy conservation projects undertaken under SIDBI loan
 - **Name of the Activity:** Sustainable Educational Institutions.
Client: Hindustan Aeronautics Limited (HAL), Bangalore
Positions held: Team member
Activities performed:
 - ✓ Project conducted to support HAL offset their carbon footprint.

- ✓ Located government educational institutions and assessment of their energy demand by preliminary energy audits
 - ✓ Estimated roof top solar installation and generation capacities using simulation software
 - ✓ Monitoring installation activities of 47 schools with more than 400 kWp roof top solar systems in these institutions
 - ✓ Monitoring of energy generation and benefits attained by the institution from roof top solar systems due to net metering.
- **Name of the Activity:** Sustainability of biomass based power generation in Karnataka
Clients: Karnataka Electricity Regulatory Commission (KERC)
Positions held: Team member
Activities performed:
 - ✓ Identified pressing issues to be addressed by the regulatory commission for the sustainability of biomass based power generation plants.
 - ✓ Studied the cost structure of existing plants and assessing its technical performance in terms of PLF along with their financial status
 - ✓ Assessed existing arrangement of fuel procurement, fuel risk in terms of quantum and cost.
 - ✓ Suggested measures for mitigating fuel risks both in terms of quantum and cost.
 - ✓ Worked towards evaluation of appropriate tariff to make biomass power generation financially sustainable.
 - **Name of the Activity:** Training professionals and students.
Clients: Various clients
Positions held: Trainer/Mentor
Activities performed:
 - ✓ Train industry professionals in energy auditing and energy management with experiences on best practices case studies.
 - ✓ Provide postgraduate training in the area of renewable energy for working professionals and fresh graduates
 - ✓ Mentoring group of students in the Design for Sustainability (DfS) course (an elective for MA Sustainable Development Practice course)

CLIMATE TECHNOLOGY CENTRE & NETWORK (CTCN)

Climate Change Mitigation Expert / Seconded

Sept' 2018 to March 2019

Job Responsibilities:

- Provide expertise support on climate change mitigation (primarily energy efficiency and renewable energy sector) related Technical Assistance in the Asia and Pacific region with funding channelled through various donor agencies and financial institutions.
- Review and analyse country requests to national planning processes (NDC / NAP / TNA / TAP) and refine / draft Technical Assistance Response Plans.
- Provide technical support in reviewing draft deliverables and assist in Monitoring and Evaluation of CTCN Technical Assistance projects in the existing portfolio.
- Support stakeholder engagements in CTCN activities in Asia and Pacific region.
- Identify new opportunities to develop the energy efficiency portfolio.
- Providing guidance as energy efficiency expert on deliverables and activities included in the portfolio. Supporting regional team, NDEs and network members in communication, networking and partnership building.

Relevant Projects Undertaken:

- **Name of the Activity:** Technical Assistances for National Certification Scheme for Energy Auditors.

Client: Ministry of Climate Change, Government of Pakistan
Department of Environment, Government of Bangladesh

Positions held: Team member

Activities performed:

- ✓ Reviewed the Response Plans and related documents.
- ✓ Advised the proponent on the methodology of industry survey and energy classification of energy intensive industrial and building sectors and guided to achieve stakeholder consensus on the approach towards Technical Assistance (TA).
- ✓ Continuous coordination and technical trouble shooting related to the TA
- ✓ Facilitated consultations to obtain stakeholder perspectives from the Project Proponent, Implementers and presently supporting in the implementation of the TA.
- ✓ Assessing fund allocation routed from funding agencies with the direction of the manager.
- ✓ Reviewed and consolidated global / regional technology, production capacity, specific energy consumption benchmark figures for different energy intensive industries for the Technical Assistance Stakeholder's reference.
- ✓ Support design of Energy Auditor course curriculum, exam syllabus and training materials.

Name of the Activity: Development of Concept Notes on Energy Efficiency technology and capacity building interventions for developing countries in the Asia Pacific region.

Client: Multiple countries – Asia Pacific region

Positions held: Team member

Activities performed:

- ✓ Deep analysis on NDCs, TNAs and other focused country specific policies for the countries in the Asia Pacific region.
- ✓ Identifying new opportunities to develop the energy auditor portfolio through analysis of relevant planning documents and drafting associated concept notes and communication material.
- ✓ Prepared concept notes for few countries in the Asia Pacific region, indicating identified gaps, intervention opportunities, CO₂ emission reduction potential and recommended approach for the energy efficiency sector.
- ✓ Developed data base for suitable snapshots on the countries (Asia Pacific region) by reviewing their NDCs and TNAs to enable relevant replication of TAs for other countries in future.
- ✓ Prepared program templates on different funding agencies (multilateral/bilateral) and financial institutions such as ADB, AUSAID, GIZ, UNDP and World Bank to understand their programs and portfolio, in order to identify opportunities to collaborate and strategize CTCN's approach on Technical Assistances.

INTERESTS & HOBBIES

- Travelling: 10 cities backpacking and more than 100 cities on work.
 - Running: Completed 5 Half Marathons.
 - Endurance cycling: Manali-Leh-Khardungla Cycling Expedition (560 km, 5359 m highest altitude); Great Malnad Challenge (900 km, 1930 m highest altitude); Bangalore to Mysore (150 km)
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LANGUAGES

Language	Reading	Speaking	Writing	Understand
English	Proficient	Proficient	Proficient	Proficient
Hindi	Proficient	Proficient	Proficient	Proficient
Telugu	Proficient	Proficient	Proficient	Proficient

REFERENCES

Name	Designation	Contact details
Dr. G.R.Narsimha Rao	Director and Senior Fellow, Industrial Energy Efficiency	The Energy and Resources Institute - Southern Regional Centre, 4th Main, Domlur II Stage, Bengaluru, Karnataka, India - 560071. grnrao@teri.res.in; +91 9448083750
Ms. Jaime Webbe	Regional Manager, Asia-Pacific Region,	Climate Technology Centre & Network (CTCN), UN City, Marmovej 51, 2100, Copenhagen, Denmark jaime.webbe@un.org; +45 45335389
Dr. V.V.N Kishore	Retired Professor and HoD at TERI University	Independent Consultant. vvn_kishore@yahoo.com; +91 9811392240
Dr. Ramkishore Singh	Principal Scientist and Head, Solar Energy Division	Sardar Patel Renewable Energy Research Institute (SPRERI), Post Box No:2, Nr. BVM Engineering College, Vallabh Vidyanagar, Gujarat, India – 388120. singh.ramkishore@gmail.com; +91 9999416359

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Signature