Renewable Energy Research Center

This is established in the year 2014 as part of MOU between BEC Bagalkot and PRDC Bengaluru. This laboratory aims to provide UG, PG and Research students a feel of RESs and Lighting systems. They will be able to conduct energy management studies. Financial assistance is received form VGST-KFIST level-II & BEC TEQIP-II.

List of Major Equipment

Sl.	Details of Equipment's	Year of Purchase	Amount
1.	**Wind Turbine Generator** 3phase PMSG, Rated Output-1500W, 12 to 48 /60 - 140 LV/HV, rated wind speed-10.5 / 24 m/s, cut-in & cut-out wind speed 2.7 & 12 m/s respectively, Class "H", > 87%, 16 poles, 1 slot pitch, 375 RPM,3 blades-3.2 m rotor diameter, Carbon Fiber composite, ~ 0.37.	2013	1,63,525.00
2.	**Equipment for Light Laboratory** Anemometer Lux meter Light loads	2014	2,98,845.00
3.	Solar photo voltaic training kit (VGST)	2014	1,35,000.00

Number of UG Projects and Details:

Academic Year 2018-19

- Development and testing of DC voltage step down mechanism for standalone battery

Academic Year 2019-20

- RFID based battery swapping system

Academic Year 2020-21

- Experimental investigations of wake effect of VAWT
- Development of generic automatic charging interface for electric vehicles
- Development of automated dust mitigation system for solar photovoltaic panel

Academic Year 2021-22

- Analysis of lead acid battery for determination of state of charge based on machines learning.
- Implementation of equivalent circuit model for lithium-ion battery based on battery parameters

Number of PG Projects and Details:

Academic Year 2013-14

- Design and development of dc distribution
- Smart charging of battery using micro wind turbine

Academic Year 2014-15

- Design and development of solar powered thermoelectric refrigerator

Academic Year 2015-16

- Solar grid hybrid power pack

Academic Year 2016-17

- Security of electric vehicles in campus use
- Implementation of electrical vehicles for in campus use
- Study of battery charging system for electric vehicle within closed campus

Academic Year 2017-18

- Study on battery management

Number of Ph.D's and Details: 02

1. Suhaib Mohammed Shaikh
   Design and Fabrication of Grid Connected Wind Turbine Blades for Low Wind Speed Regimes
   (Year of Admission: 2016-17, USN: 2BA17PEA10)
2. Vikas Jainkeri
   Design and Implementation of Model Based Control for Battery Energy Management
   (Year of Admission: 2019-20, USN: 2BA19PEE01)
3. Mahantesh Chikkadesai
   Design of smart controller for Home Microgrid powered by SPV, Wind powered Hybrid Resources
   (Year of Admission: 2019-20, USN: 2BA19PEE02)

Number of Products Developed and Details:

Renewable Energy Research Center – micro wind and Solar PV applications - funded by VGST and TEQIP-II (2014)

Renewable Energy Research Center - Energy Conservation using lighting - funded by VGST and TEQIP-II (2014)

Number of Publications and Details:

Patents:

[1] An Electronics Sensing Device for Dynamically Adapting A DC Source Voltage AC-Cording to One or More Loads and Method Thereof
Application No. TEMP/E-1/45753/2021-CHE
Ref.No.:202141040828
Status: RQ Filed

[2] Method of Controlled Battery Charging for Micro Wind Generators
[Pending Patent 121/CHE/2014]

Book Chapters

[1]. Goudappanavar, S.Y., Jangamshetti, S.H., Majjagi, S., Ronad, B.F. (2026). Development and Analysis of Wake Effect of Vertical-Axis Wind Turbine Generator on HAWTG Based on Experimental Method. In: Bansal, J.C., Saha, S., Coello, C.A.C., Rathore, H. (eds) Advances in Data-Driven Computing and Intelligent Systems. ADCIS 2024. Lecture Notes in Networks and Systems, vol 1445. Springer, Singapore. https://doi.org/10.1007/978-981-96-7140-3_12

Technical Activities:

Awareness of monitoring of distribution system for Students from Vagdevi PU School, Bagalkot on 22.09.2021

BVVS

Basaveshwar Engineering College (Autonomous)

[AICTE Recognized, TEQIP-I, II & III, Permanently Affiliated to VTU Belagavi, NBA & NAAC Accredited]

Bagalkot-587103, Karnataka state, India

Department of Electrical & Electronics Engineering

[Govt. Aided, Accredited by NBA 2003, 2006, 2018, Recognized R&D centre of VTU]

Visitors from reputed Engineering College Professors (IISc, NITK, IITs, IIIT)

Visitors from Industries

Industry Institute Interaction (BEC-HESCOM)

Students and faculty of Amruth Institute of Technology, Bengaluru