KEYNOTE EXPERT TALKS

Prof. Sastry V Vedula
Ph.D., FNAE, Sr. Member IEEE (Life)
Director, E-Mobility Centre of Excellence & Distinguished
Professor, GVPCE (A)



Title: 200 kWp Wind-Solar Hybrid System with Energy Storage on Rooftops of GVPCs.

Solar and wind energy systems are complimentary in nature and hence such renewable energy sources (RES) along with a battery storage makes it resilient energy source for an off -grid operation.

Accordingly in this invited presentation, I shall share the experience of the faculty of three Gayatri Vidya Parishad institutions of which 2 are located in Madhurawada locality and the other one is located at Rushikonda. The lead industry for coordinating and installing on the roof tops is Emmvee Photovoltaic Power Pvt. Ltd, Bangalore along with 3 other industries such as: a) Unitron Energy systems Ltd, Pune , Consul -Nowata (India-Fuji Electric) and Amara raja Batteries Lt., Hyderabad.

After the installation and commissioning of these subsystems, we traced several issues related Wind Turbine Generation systems for over a prolonged period, which are all solved amicably with the research faculty from Civil, Mechanical & EEE at GVPCE(A) as well as with the engineers from Unitron Energy Ltd., Pune. For solving these issues, we did experimental work and some analytical work.

Over time we built a digital- twin at a later stage of the sub -systems, making use of Saber RD software Here a good number of post-graduate students such as Tanesh, Vidyadhari, Sai Datta, Eswar and Nancy participated in the digital- twin development.

Because of the success of this effort MNRE, New Delhi was pleased to release its share of the cost of this project. The conceptual block diagram of the 200kWp hybrid system is shown in the Figure below.



200 kWp WIND - SOLAR HYBRID POWER PLANT BLOCK DIAGRAM

2) Sri. G M Sharat Chandra

Chief Manager- Renewables National Load Dispatch Centre, Power System Operation Cooperation (PoSoCo), New Delhi



Title: Navigating the Energy Trillema-Large Scale Integration of Renewables and Decarbonisation of Power Grids

With global energy demand expected to double by 2050, investment in energy and demand is expected face a host of challenges covering Energy Security, Energy Sustainability and Energy Affordability, collectively referred as Energy Trilemma.

Large scale integration of Renewables is the only potential solution to address a host of these issues posed within the confines of Energy Sector. Presentation will focus on the following topics:

- 1. RE Integration in India in numbers
- 2. Changing Economic Dynamics of RE Integration
- 3. Grid Scale Energy Storage Options
- 4. Policy and regulatory Interventions to Facilitate RE Integration