Pandit Deendayal Energy University

School of Energy Technology

Department of Electrical Engineering

Siemens Centre of Excellence

About COE:

The Siemens Centre of Excellence at PDEU has been established through a collaborative agreement between the Industries Commissionerate – Government of Gujarat, Siemens Industry Software (India) Pvt. Ltd., and Pandit Deendayal Energy University. The centre aims to develop a highly skilled workforce for modern industrial and automotive sectors by providing training in advanced industrial technologies and digital engineering tools.

The facility provides exposure to industrial automation, digital manufacturing, engineering design, and simulation tools widely used in modern industries. Through this collaboration, students gain access to industry-standard technologies, software platforms, and training programs, enabling them to develop skills aligned with Industry 4.0 and smart manufacturing practices.

Objectives:

- To develop industry-ready skilled manpower for the automotive and manufacturing sectors.
- To provide hands-on training in industrial automation, digital engineering, and manufacturing technologies.
- To strengthen industry–academia collaboration with Siemens and industrial partners.
- To promote research and innovation in smart manufacturing and Industry 4.0 technologies.
- To enhance employability and technical competency of engineering students.

Details of Major Facilities:

Sr. No.	Name of Equipment/ Facility	Equipment/Facility
		

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Centre for Energy Storage

About COE:

The Centre for Energy Storage at PDEU focuses on advanced energy storage technologies and smart grid applications to support the integration of renewable energy systems. As part of this initiative, PDEU has successfully deployed a Smart Hybrid Microgrid System comprising a 32 kW grid-connected rooftop solar PV system, 5 kW vertical wind turbine generators, and a 10 kW / 100 kWh Vanadium Redox Flow Battery (VRFB) energy storage system.

The hybrid microgrid integrates solar and wind renewable energy sources with energy storage to ensure reliable and efficient power supply. The generated renewable energy can be utilized for supplying local loads, charging the VRFB energy storage system, or injecting power into the grid. An intelligent control algorithm has been developed to optimize the charging and discharging of the VRFB system, thereby maximizing renewable energy utilization.

In situations where renewable generation and grid supply are unavailable, the energy storage system can seamlessly deliver stored energy to the local load without interruption. Additionally, the facility includes charging infrastructure for electric two-wheelers and four-wheelers, powered by the energy storage system.

Objectives:

- To conduct research and development in advanced energy storage technologies.
- To study integration of renewable energy sources with microgrids and smart grid systems.
- To develop intelligent energy management algorithms for energy storage systems.
- To support electric vehicle charging infrastructure powered by renewable energy.
- To provide hands-on training for students in hybrid renewable energy systems and microgrid technologies.

Details of Major Facilities:

Sr. No.	Name of Equipment/ Facility	Equipment/Facility