

G H Patel College of Engineering & Technology
(A Constituent College of CVM University) Vallabh Vidyanagar

Event Report

Expert Talk on “Energy Scenario of Gujarat & Capacitive Power Generation” at Electrical Engineering Department, GCET, V V Nagar

- ➡ **Date:** 04th August 2025
- ➡ **Time:** 4:00 PM to 5:00 PM
- ➡ **Institute:** G H Patel College of Engineering and Technology, Vallabh Vidyanagar, Gujarat.
- ➡ **Mode of Conduct & Venue:** Offline, GCET Room No A314
- ➡ **Faculty Coordinator:** Jasmin James, Assistant Professor, Electrical Department, GCET.
- ➡ **Expert Details:** Mr. Kuldeep Ruparelia, BEE Certified Energy Auditor
- ➡ **Event Details:**

Mrs. Jasmin James, Assistant professor of Electrical Engineering Department, G H Patel College of Engineering & Technology (GCET) organized an expert talk on “Energy Scenario of Gujarat & Capacitive Power Generation” on 4th August 2025 for the third year elective students in the subject Energy systems including ME, MC, CH, CL and CP students of GCET.

Mr. Kuldeep Ruparelia of Electrical Research and Development Association (ERDA), Vadodara, shared his technical expertise by explaining different types of electric power generation modes, such as hydro, thermal, solar etc. He has also covered the fundamentals of energy conservation and energy audit. The capacitive power generation and its applications are also discussed which is turned out to be an effective addition to the subject syllabus. The expert talk ended with a very interactive question-answer session about various energy generation and conservation aspects.

► **Photographs:**







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Vijay Makwana Dr. Abhishri Jani Israd Ansari bhadradya Rohit Nishan Singh

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Reactance relays

Operating Principle

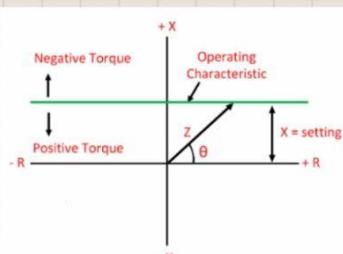
- Operates based only on the **reactance (X)** component of impedance, Ignores the resistance (R).
- Relay operates if: $X \leq X_{\text{setting}}$

Features

- Not affected by fault resistance** (e.g., arc resistance).
- Non-directional** → may operate for reverse faults too.
- More suitable for **ground faults on short lines**.

Applications

- Used mainly for **short lines**, where fault resistance can be significant.
- Often used in combination with **Mho relay** to add directionality.


 The graph shows the operating characteristic of a reactance type distance relay. The vertical axis represents torque, with positive torque pointing upwards and negative torque downwards. The horizontal axis represents impedance, with reactance (X) on the positive side and resistance (R) on the negative side. The operating characteristic is a straight line starting from the origin (Z) and sloping upwards. The angle between the line and the positive X-axis is labeled θ . The distance from the origin to the line is labeled $X = \text{setting}$. The region above the line is labeled "Operating Characteristic", and the region below the line is labeled "Negative Torque". The region to the left of the line is labeled "Positive Torque".

Operating Characteristic of Reactance Type Distance Relay

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Questions???

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DO SOMETHING
TODAY THAT
YOUR FUTURE
SELF WILL
THANK YOU FOR.


 A photograph of a single-pole light switch mounted on a blue wall. The switch is a standard toggle type with a black handle.

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