

Energy Storage Solutions: Batteries, Hydrogen & Grid Integration

COURSE OVERVIEW

This course provides a survey of cutting-edge energy storage technologies, with a focus on batteries, hydrogen, and grid integration solutions that are reshaping the global energy landscape. Participants will gain a strong understanding of how these technologies support renewable energy systems, enhance grid stability, and enable the transition to low carbon economies. Through a blend of theoretical insights, case studies, and practical applications, the course equips participants with the knowledge needed to analyze, evaluate, and implement energy storage strategies that drive resilience, sustainability, and innovation across the energy sector.

WHO SHOULD ATTEND?

The course is designed for energy professionals, policymakers, utility managers, project developers, researchers, and decision makers involved in renewable energy, power systems, and sustainability initiatives. It is also suitable for engineers, consultants, and business leaders seeking to deepen their expertise in energy storage technologies and understand their critical role in achieving net-zero energy goals.

COURSE OUTCOMES

Delegates will gain the skills and knowledge to:

- Gain a comprehensive understanding of key energy storage technologies, including batteries and hydrogen systems.
- Analyze the role of storage in enhancing grid reliability, flexibility, and renewable energy integration.
- Evaluate techno-economic factors, safety considerations, and regulatory frameworks shaping energy storage adoption.
- Develop strategies for deploying storage solutions in diverse applications, from utility-scale projects to decentralized energy systems.
- Strengthen decision-making skills through case studies and scenario-based exercises.

KEY COURSE HIGHLIGHTS

At the end of the course, you will understand:

- The fundamentals and classifications of energy storage technologies including batteries, hydrogen, and other storage solutions.
- The design, operation, and applications of battery energy storage systems (BESS) in renewable energy integration.
- Hydrogen production, storage, and utilization as an energy carrier in modern energy systems.
- Grid integration challenges and solutions for energy storage systems to enhance stability and reliability.
- Control and management strategies for optimizing energy storage performance within grid systems.
- Economic, environmental, and policy considerations influencing energy storage deployment.
- Emerging trends and future innovations in energy storage technologies and their role in sustainable energy transition.

All our courses are dual-certificate courses. At the end of the training, the delegates will receive two certificates.

1. A GTC end-of-course certificate
2. Continuing Professional Development (CPD) Certificate of completion with earned credits awarded