CONCEPT

Solar and Wind Farm Safety: Renewable Energy Plant HSE Management

18 – 22 January 2027
London - Central London four-star



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Introduction:

Solar and wind farm safety breaks down in ways generic procedures miss: a PV string that stays live in daylight after the inverter trips, a technician injured in a nacelle hours from the nearest hospital, a battery container venting gas, a contractor crew climbing without rescue cover. This Core Concept course equips the people who run renewable plants to control these hazards across construction and operation, from array and turbine isolation to remote-site rescue and contractor oversight. Through site inspection walkthroughs, participants build a Renewable Site HSE Plan for their own solar, wind or hybrid plant.

Course Objectives:

- Build a hazard register for a solar PV farm, wind farm or battery storage site that covers electrical, mechanical, environmental and fire risks
- Define competence requirements for turbine and PV crews using the GWO training standards and verify them for employees and contractors
- Apply isolation sequences for PV strings, inverter stations and wind turbine drivetrains and authorise work through renewable site permits
- Control construction-phase activities including piling, cable installation and turbine component lifts with weather stop criteria
- Prepare emergency and rescue arrangements for nacelle, hub and remote array incidents and for battery storage fires
- Track O&M safety performance with leading and lagging indicators and produce a Renewable Site HSE Plan

Target Audience:

- HSE leads responsible for risk assessment, audits and incident reporting at solar, wind and storage plants
- Site and plant managers accountable for safe operation and maintenance of renewable generation assets
- O&M supervisors who plan maintenance, issue permits and lead technician crews on arrays and turbines
- Contractor coordinators responsible for prequalification, induction and oversight of EPC and service contractors
- Construction managers who supervise installation, erection and commissioning of renewable projects

Course Outline:

Day 1: Renewable Site Hazard Profiles and Current-State HSE Review

- Solar Farm Hazard Register: DC Strings, Inverter Stations, Heat Stress and Dust Exposure
- Wind Farm Hazard Register: Tower Climbs, Nacelle Work, Rotating Drivetrain and Blade Icing
- Battery Energy Storage Hazard Profile: Thermal Runaway, Off-Gassing and Container Fire
- Renewable Plant Lifecycle Risk Map from Construction Through O&M to Repowering
- Current-State HSE Gap Review Using a Renewable Site Checklist

Day 2: Training Standards, Competence and Site Safety Management

- GWO Basic Safety Training Modules: First Aid, Manual Handling, Fire Awareness and Working at Heights
- GWO Advanced Rescue Training and High Voltage Standards for Turbine Technicians
- GWO Solar Safety Training Standard and a Competence Matrix for PV Crews
- Renewable Site HSE Management System: Roles, Risk Assessment Method and Document Control
- Contractor Prequalification, Site Induction and Competence Verification on Multi-Contractor Plants

Day 3: Isolation and Safe Systems of Work on PV Arrays and Turbines

- PV String and Combiner Box Isolation: DC Disconnects and Conductors Live Under Irradiance
- Inverter and Transformer Station Isolation Sequence with Stored Energy Discharge
- Wind Turbine Energy Control: Rotor Lock, Yaw Brake, Pitch System and Hydraulic Accumulators
- Renewable Site Permit Types: Tower Climb, Hub Entry, Blade Access and Nacelle Hot Work
- Module Handling, Panel Cleaning and Vegetation Management Task Risk Assessments

Day 4: Construction Phase, Emergencies and Safety Performance Problems

- Construction-Phase Controls: Piling, Trenching, Cable Pulling and Module Installation
- Turbine Erection Lifts: Tower Sections, Nacelle and Blades with Wind Speed Stop Criteria
- Remote Site Emergency Response Plan: Nacelle Evacuation, Casualty Retrieval and Medical Access Times
- BESS Fire Response: Detection, Ventilation, Firefighter Liaison and Re-Entry Decisions
- O&M Safety KPIs: Leading and Lagging Indicators, Near-Miss Reporting and Contractor Scorecards

Day 5: Renewable Site Inspection Walkthroughs and the HSE Plan

- Solar Farm Inspection Walkthrough: Inverter Station, Combiner Boxes and Array Access Routes
- Wind Turbine Inspection Walkthrough: Ladder, Fall Arrest, Service Lift and Nacelle Housekeeping
- Hub and Blade Confined Space Case: Entry Controls, Attendant Duties and Rescue Kit
- Ice Throw and Blade Failure Case: Exclusion Zones, Signage and Access Restrictions
- Renewable Site HSE Plan Build and Peer Review

Skills You Will Gain:

- Renewable Site Hazard Identification
- PV Array Isolation Control
- Wind Turbine Energy Control
- Renewable Permit Authorisation
- Remote Site Rescue Planning
- BESS Fire Risk Control
- Contractor Safety Oversight
- Safety KPI Reporting

Why Attend This Course:

- Return with a Renewable Site HSE Plan for your own solar, wind or hybrid plant, checked in inspection walkthroughs
- Stop treating PV arrays and turbines like ordinary switchrooms by learning where their energy sources stay live
- Test whether your rescue arrangements would reach a casualty in a nacelle, hub or distant array in time
- Compare site safety practice with HSE and O&M staff from utilities, independent power producers and EPC contractors

Conclusion:

Renewable plants look low-risk from the fence line, yet they combine live DC arrays, tall rotating machines, battery fire risk and long rescue distances. This course moves from solar, wind and storage hazard profiles and the GWO training standards, through isolation and permits on arrays and turbines, to construction lifts, remote emergency response and safety KPIs. The final day applies that material in site inspection walkthroughs and case reviews and produces a Renewable Site HSE Plan ready for use at the participant's plant.