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COURSE BROCHURE

Climate Resilience Planning for Power Networks Training Course

7 – 11 December 2026
Madrid

Climate Resilience Planning for Power Networks Training Course

Ref: 2614_99418 **Date:** 7 – 11 December 2026 **Location:** Madrid **Fees:** 6200 GBP

Climate Resilience Planning for Power Networks is a 1-week training course for energy and sustainability engineers, focused on substations, lines and generation sites facing harsher weather, built around a network climate resilience plan each participant drafts for their own assets. Utilities now face both physical weather damage and pressure to cut emissions at the same time. Jupiter Prime Training treats Climate Resilience Planning for Power Networks as one engineering task.

Why Climate Resilience Planning for Power Networks Matters Now

Three forces shape this subject. Hotter summers derate transformers and overhead conductors when cooling demand peaks. Flood, wind and wildfire events are reaching assets designed for older weather patterns. A network operator that plans well keeps outages short and spends reinforcement money where hazards are real; one that plans badly faces cascading failures, stranded assets and emergency repairs. The course rests on hazard, exposure and vulnerability assessment, greenhouse gas inventory practice and risk-ranked investment planning.

Who Gains Most from Climate Resilience Planning for Power Networks

- Engineers who rate and specify transformers, cables and conductors for future ambient conditions
- Sustainability staff who compile emissions inventories for generation and network assets
- Asset planners who rank reinforcement and hardening projects across substations and feeders
- Operations engineers who prepare storm, heat and flood response arrangements
- Design engineers who set siting, elevation and drainage criteria for new installations

Utilities and industrial power users gain most when planning, operations and sustainability staff attend together, so hazard findings, emissions figures and investment choices are argued in one room.

Climate Resilience Planning for Power Networks Capabilities

Participants turn weather projections and emissions figures into choices about specific circuits.

- Assess heat, flood, wind and wildfire exposure of network assets — investment ranking across substations
- Calculate thermal derating of transformers and conductors under hotter ambients — loading limits for planners
- Build a greenhouse gas inventory for generation and network losses — sustainability reporting
- Weigh hardening, undergrounding and redundancy options — capital approval committees

- Design emission reduction measures such as loss cuts and gas leak control — decarbonisation targets
- Communicate residual climate risk to executives in plain terms — board oversight

Key Climate Resilience Planning for Power Networks Terms

- Climate hazard — a weather-driven event, such as extreme heat or flooding, that can damage or derate electrical equipment.
- Exposure — the presence of network assets in places where a climate hazard can reach them.
- Vulnerability — how strongly an asset's performance falls when a hazard of a given intensity strikes it.
- Thermal derating — reducing the allowed loading of equipment because higher ambient temperature limits its ability to shed heat.
- Grid hardening — physical upgrades, such as raised plinths or stronger poles, that make assets withstand severe weather.
- Scope 1 and 2 emissions — direct emissions from owned sources and indirect emissions from purchased energy, including network losses.

Climate Resilience Planning for Power Networks Day by Day

Day 1: Climate Pressures on Electricity Systems

- Climate Projection Datasets — Selecting Scenarios for Network Planning Horizons
- Historical Weather Outage Records — Linking Faults to Hazard Types
- Heat, Flood, Wind and Wildfire Profiles — Hazards Relevant to Each Asset
- Emissions Sources in Generation and Networks — Where Carbon Arises
- Stakeholder Expectations Mapping — Investors, Insurers and Customers on Resilience

Day 2: Hazard, Exposure and Vulnerability Assessment

- Asset Exposure Mapping With Flood and Heat Layers — Sites at Risk
- Vulnerability Curves for Transformers and Lines — Failure Likelihood by Intensity
- Thermal Rating Under Rising Ambients — Revised Loading Limits
- Substation Flood Elevation Checks — Equipment Relocation Decisions
- Climate Risk Scoring Matrix — Ranking Circuits for Attention

Day 3: Emissions Inventory and Reduction Options

- Greenhouse Gas Inventory for Power Assets — Scope Boundaries and Factors
- Technical Loss Reduction Measures — Lower Emissions From Network Losses
- Insulating Gas Leak Detection and Replacement — Switchgear Emissions Control
- Fuel Switching and Efficiency Upgrades at Plants — Generation Emissions Cuts
- Marginal Abatement Cost Curves — Ordering Reduction Measures by Cost

Day 4: Adaptation Investment Choices

- Hardening Versus Undergrounding Comparison — Option Choice by Hazard
- Network Redundancy and Islanding Arrangements — Restoration Speed After Storms
- Vegetation and Wildfire Mitigation Schedules — Line Corridor Safety
- Cost-Benefit of Avoided Outages — Justifying Resilience Spend
- Adaptation Pathways With Trigger Points — Timing Staged Investments

Day 5: Practising the Network Climate Resilience Plan

- Case Network Exposure Exercise — Applying Risk Scoring to Feeders
- Derating Calculation Practice — Testing Loading Limits for a Substation
- Emissions Reduction Option Ranking — Using the Abatement Curve
- Board Briefing on Residual Climate Risk — Communicating Trade-Offs
- Network Climate Resilience Plan — Final Asset-Specific Version

Applying Climate Resilience Planning for Power Networks After the Course

- Score the ten most exposed substations with the climate risk scoring matrix and present the ranking to the asset planning group
- Recalculate summer thermal ratings for critical transformers and feed the revised limits into next season's loading instructions

Climate Resilience Planning for Power Networks Questions FAQ

What is Climate Resilience Planning for Power Networks and why does it matter now?

Climate Resilience Planning for Power Networks is the engineering work of preparing electrical assets for harsher weather while cutting their emissions. It matters now because heat, floods and storms are already causing outages on networks designed for milder conditions.

Which roles gain most from Climate Resilience Planning for Power Networks training?

Energy and sustainability engineers gain most. You benefit if you rate equipment, rank reinforcement projects, compile emissions inventories or prepare storm and heat response arrangements for utilities or large industrial sites.

How does Climate Resilience Planning for Power Networks differ from a carbon accounting course?

Climate Resilience Planning for Power Networks covers physical weather risk as well as emissions. A carbon accounting course concentrates on inventories and reporting; this one adds exposure mapping, thermal derating and hardening choices for specific electrical assets.

What do you bring back from Climate Resilience Planning for Power Networks training?

You bring back an asset-specific plan that ranks climate exposure and sets out hardening and emission reduction measures.

Climate Resilience Planning for Power Networks: The Way Forward

The network climate resilience plan first informs which substations and feeders receive hardening funds in the next capital round. Asset planners use it to rank projects, while sustainability staff use its emissions section for reporting. After its first use, revisit the climate scenarios chosen, since projections and observed weather both shift over time.