JUPITER PRIME
Consulting • Training • Advisory
جوبيتر برايم للاستشارات والتدريب

COURSE BROCHURE

Utility Network Investment Planning Training Course

18 – 22 April 2027
Manama

jupiterprime.uk
info@jupiterprime.uk
Registered in the United Kingdom and Saudi Arabia

Utility Network Investment Planning Training Course

Ref: 3067_116454 **Date:** 18 – 22 April 2027 **Location:** Manama **Fees:** 5500 GBP

Utility Network Investment Planning is a 1-week training course for electricity and water distribution planners and engineers who turn demand outlooks, asset condition and reliability expectations into a distribution network investment plan. Utilities face rising connection requests, ageing feeders and mains, and tighter scrutiny of every capital decision, so a defensible spending sequence matters more each budget cycle. Jupiter Prime Training offers Utility Network Investment Planning.

Why Utility Network Investment Planning Matters Now

Three groups now press on distribution budgets. New customers, from housing districts to data centres, request capacity faster than networks were designed to grow. Cables, transformers, pumps and pipes are approaching the end of their service lives. And customers and oversight bodies expect fewer interruptions and clear reasons for every tariff-funded project. A utility that sequences its spending well connects demand on time and keeps outage numbers falling. One that spends reactively builds stranded capacity while bottlenecks grow elsewhere.

Who Gains Most from Utility Network Investment Planning

- Engineers responsible for medium and low voltage feeder studies and connection assessments
- Engineers who plan water distribution zones, pressure districts and trunk main extensions
- Planners who build the multi-year capital list and defend it to finance colleagues
- Engineers who track interruption performance and set reliability improvement targets
- Planners who coordinate asset replacement with growth-driven network projects

A network planning section gains most when several members attend together, because its staff can agree one ranking method.

Utility Network Investment Planning Capabilities

Participants learn to connect each candidate project to the demand it serves, the risk it removes and the reliability gain it buys.

- Calculate spatial demand growth by zone using connection pipelines and customer categories — the planning manager
- Assess thermal, voltage, pressure and flow headroom across feeders and mains — the network operations unit
- Weigh new build, uprating, network reconfiguration and demand-side options — the engineering design group
- Specify reliability targets per circuit or zone from interruption history — the customer service and performance office
- Build a scored project portfolio balancing cost, risk and reliability benefit — the capital investment committee
- Communicate the investment case and its trade-offs to non-engineers — finance directors and oversight bodies

Key Utility Network Investment Planning Terms

- Network headroom — the spare capacity left before a thermal, voltage or pressure limit is reached.
- Spatial demand outlook — an estimate of future peak demand broken down by geographic zone rather than a single system total.
- Security of supply standard — the rule stating how many equipment outages a section must tolerate without losing customers.
- Interruption index — a measure of how often and for how long the average customer loses electricity or water supply.
- Non-network alternative — a solution such as demand response, storage or tariff incentives that defers building new network assets.
- Investment portfolio score — a combined ranking of each project by cost, risk reduction, reliability benefit and timing need.

Utility Network Investment Planning Day by Day

Day 1: Demand Pressures on Distribution Assets

- Connection Pipeline Review — Separating Committed, Probable and Speculative Demand
- Spatial Demand Outlook by Zone — Where Peak Growth Will Land
- Customer Category Profiles — Residential, Commercial, Industrial and Utility Loads
- Embedded Generation and Electrification Effects — Shifting Peaks and Reverse Flows
- Water Consumption and Leakage Trends — Zone Demand for Pressure Districts

Day 2: Headroom and Constraint Studies

- Feeder and Substation Headroom Assessment — Thermal and Voltage Limits Reached
- Hydraulic Model Runs for Mains — Pressure and Flow Shortfalls by District
- Security of Supply Checks — Outage Cases Each Section Must Survive
- Asset Condition and Remaining Life Data — Replacement Needs Alongside Growth
- Constraint Register Construction — One List of Every Network Shortfall

Day 3: Solution Options and Their Costs

- New Build Versus Uprating Comparison — Lifetime Cost of Each Path
- Network Reconfiguration and Load Transfer — Using Existing Ties First
- Non-Network Alternatives — Demand Response, Storage and Tariff Signals
- Unit Cost Libraries — Consistent Estimates Across Electrical and Water Projects
- Option Timing Analysis — Building Just Before Headroom Runs Out

Day 4: Reliability Targets and Project Ranking

- Interruption History Analysis — Worst Served Circuits and Zones
- Reliability Target Setting — Improvement Goals Per Network Section
- Risk Scoring Matrix — Likelihood and Consequence of Asset Failure
- Multi-Criteria Project Scoring — Cost, Risk Reduction and Reliability Benefit
- Budget Envelope Scenarios — Which Projects Move When Funds Shrink

Day 5: Practising the Distribution Network Investment Plan

- Live Case Demand Outlook — Applying Day One Zone Estimates
- Constraint Register for the Case Network — Testing Day Two Studies
- Preferred Option Selection — Using Day Three Cost Comparisons
- Investment Case Narrative — Explaining Trade-Offs to Finance and Oversight
- Distribution Network Investment Plan — Final Ranked Project List and Timeline

Applying Utility Network Investment Planning After the Course

- Build a constraint register for one supply area, listing every feeder or main within reach of its headroom limit.
- Score the current capital project list with the multi-criteria method and share the reordered ranking with the planning manager.

Utility Network Investment Planning Questions FAQ

What is utility network investment planning, and why does it matter now?

It is the practice of deciding which distribution projects to fund, when and why. It matters now because new connections, ageing assets and reliability expectations all compete for the same limited capital budget.

Which roles gain most from utility network investment planning?

Electricity and water distribution planners and engineers gain most. That includes people running feeder or hydraulic studies or preparing the capital project list.

How does utility network investment planning differ from a power system protection course?

A protection course focuses on relays, settings and fault clearance in live operation. Utility network investment planning looks years ahead, deciding which capacity, replacement and reliability projects to build and in what order.

What do you bring back from utility network investment planning?

You bring back a ranked project list for a case network with costs, reliability benefits and timing. You also bring a scoring method for your own capital list.

Utility Network Investment Planning: The Way Forward

The distribution network investment plan first informs which projects enter next year's capital budget and which wait. Planning managers, finance colleagues and asset owners use it to agree that sequence. After its first use, the perspective worth revisiting is the demand outlook, because every ranking rests on where growth actually arrives.