
Smart Grid Investment Decisions: Metering, Automation and Flexibility Training Course

27 September – 1 October 2027
Casablanca





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Programme Summary

Smart grid investment decisions, covering metering, automation and demand flexibility, are the subject of this one-week training course for utility executives, regulators and finance leaders without an engineering background, ending in an investment case for one smart grid programme. Smart grid proposals arrive full of technical terms, and approving them well depends on understanding what each investment changes and what it saves. The programme moves from principles, through diagnosis of network needs, to design of a funded business case, then to application on one proposal. Mars Training Centre UK delivers this programme for non-technical decision makers.

The Business Case

When smart grid spending is approved on vendor promises, utilities buy meters and automation whose benefits are never measured, customers see higher bills without better service and regulators cannot judge whether costs are fair. Leaders who can read a proposal, test its benefits against costs and question its assumptions can fund the right projects, defend the decision to boards and regulators and stop weak proposals early.

- Spending Quality: Improves as each proposal is tested against avoided costs and measured benefits.
- Reliability Gains: Rise as automation targets the feeders with the worst outage records.
- Customer Value: Grows as flexibility programmes reduce peak demand and bills.

Principles and Evidence Base

- Cost-benefit analysis: It structures the comparison of costs and benefits built in Session 1.
- Avoided cost and benefit categories: They frame the valuation of metering and automation in Session 2.
- Uncertainty and sensitivity testing: They guide the stress tests applied in Session 3.
- Phased deployment and learning: They inform the staging and review points set in Session 4.

Intended Participants

- Utility executives who approve capital programmes for networks and customer systems.
- Regulators who review smart grid cost recovery and performance claims.
- Finance leaders who appraise investment cases and monitor delivered benefits.
- Policy and strategy advisers who plan network modernisation without an engineering background.

The programme serves electricity distributors, government energy bodies, development banks and consultancies advising utilities, and suits mixed groups where finance, policy and operations colleagues must reach one shared decision together.



Learning Outcomes

1. Participants will be able to explain what advanced metering, distribution automation and demand flexibility each change in the network.
2. Participants will be able to identify the network problems that each smart grid investment can solve.
3. Participants will be able to value benefits such as avoided outages, reduced losses and deferred reinforcement.
4. Participants will be able to test an investment case with scenarios and sensitivity checks.
5. Participants will be able to compare competing proposals against one set of criteria.
6. Participants will be able to justify a phased investment decision to a board or regulator.

Programme Structure

Day 1: Smart Grid Investment Decisions Principles

What does a smart grid change, and what must a decision maker understand?

- Smart Grid Building Blocks in Plain Language
- Advanced Metering Functions and Data Flows
- Distribution Automation Concepts
- Demand Flexibility Mechanisms
- Cost-Benefit Analysis Framework

Day 2: Diagnosing Network Needs and Benefit Sources

Which network problems justify spending, and what do they cost today?

- Outage and Loss Record Review
- Peak Demand and Capacity Constraint Map
- Avoided Cost Identification
- Customer Benefit Categories
- Baseline Measurement Plan

Day 3: Designing the Business Case and Stress Tests

How robust is the case if costs rise or benefits arrive late?

- Capital and Operating Cost Build-Up
- Benefit Valuation Worksheet
- Scenario and Sensitivity Testing
- Vendor Claim Challenge Checklist
- Proposal Comparison Scorecard



Day 4: Phasing, Regulation and Governance

How is the programme staged, funded and held to account?

- Phased Deployment Options
- Cost Recovery and Tariff Treatment
- Data Privacy and Cyber Risk Questions
- Benefit Tracking Dashboard
- Investment Committee Paper Format

Day 5: Applying Smart Grid Investment Decisions to One Proposal

Is the investment case ready for a board or regulator?

- Applying the Session 2 Needs Diagnosis to the Chosen Proposal
- Testing the Session 3 Case Under Adverse Scenarios
- Checking the Session 4 Phasing Against Funding Limits
- Setting Review Points and Reporting Measures
- Completing the Smart Grid Investment Case

Methodology

The programme uses a decision workshop built on anonymised utility proposals, meter data summaries, outage records and cost schedules. Participants work in small teams as executive, regulator and finance lead, and carry one proposal from need to recommendation, challenging each assumption as a group and recording what evidence would change the decision.

- Suggested activity: Valuing avoided outages for one feeder and explaining the result.
- Suggested activity: Stress testing a metering case with late benefits and higher costs.
- Suggested activity: Defending a phased plan to a panel acting as a regulator.

Capstone Output

Each participant completes a smart grid investment case for one programme. It holds a needs diagnosis, a benefit valuation, a stress-tested cost-benefit comparison, a phasing plan and review measures. The case is used to brief a board, support a regulatory filing and track benefits after approval, so that the decision remains open to review as costs and results become known.



Frequently Asked Questions

Are smart grid investment decisions suitable for people without engineering training?

Yes. Smart grid investment decisions are taught in plain language for executives, regulators and finance leaders who approve spending, not for those who design equipment.

Which principles do smart grid investment decisions rest on in this training?

Smart grid investment decisions rest on cost-benefit analysis, avoided cost valuation, uncertainty and sensitivity testing, and phased deployment.

How is the investment case from smart grid investment decisions used at work?

You use the investment case to brief a board, support a regulator filing and track whether promised benefits are delivered.

How do smart grid investment decisions differ from a power systems basics programme?

Smart grid investment decisions centre on valuing and approving metering, automation and flexibility projects, while a basics programme centres on how power systems work.