JUPITER PRIME
Consulting • Training • Advisory
جوبيتر برايم للاستشارات والتدريب

COURSE BROCHURE

15-Minute City Electrical Infrastructure Planning Training Course

18 – 22 April 2027
Doha

15-Minute City Electrical Infrastructure Planning Training Course

Ref: 2702_103152 **Date:** 18 – 22 April 2027 **Location:** Doha **Fees:** 6500 GBP

15-Minute City Electrical Infrastructure Planning is a 1-week training course for urban planners, utility planners and municipal infrastructure staff who must power neighbourhoods where daily needs sit within a short walk or cycle. Participants build a neighbourhood electrical infrastructure phasing plan. Proximity-based districts put new loads on local feeders and substations. Jupiter Prime Training delivers this course for planners shaping that change.

Why 15-Minute City Electrical Infrastructure Matters Now

Three forces now meet at street level. Electrified transport moves vehicle charging from fuel forecourts into kerbsides, car parks and homes. Mixed-use zoning places commercial cooling and cooking loads beside housing, flattening the old split between residential and business districts. Municipal climate targets bring district heating and cooling into masterplans. An authority that coordinates land-use plans with the distribution utility early avoids dug-up streets, stranded substations and charging queues; one that treats electricity as an afterthought finds walkable plans stalled by connection delays. The course rests on accepted practice in load estimation and distribution planning.

Who Gains Most from 15-Minute City Electrical Infrastructure

- Those who draft neighbourhood masterplans and decide where services, housing and mobility hubs sit
- Those who forecast demand and plan reinforcement of local distribution feeders and substations
- Those who specify, procure and maintain street lighting and public realm electrical assets
- Those who plan kerbside and depot charging for residents, fleets and public transport
- Those who appraise district heating, cooling and local generation schemes for new quarters

A municipality and its distribution utility gain most when planners and network engineers attend together.

15-Minute City Electrical Infrastructure Capabilities

Participants learn to translate walkability goals into kilowatts, cable routes and substation plots.

- Map walking catchments against existing feeder and substation capacity — siting of new local centres
- Estimate after-diversity demand for mixed-use blocks and charging hubs — reinforcement requests to the utility
- Weigh district heating and cooling against all-electric options — energy strategy for new quarters
- Specify street lighting levels, controls and pole sharing — public realm and safety budgets
- Design charging layouts by user group and dwell time — kerbside allocation and parking policy
- Build a phased infrastructure sequence tied to development triggers — capital investment approvals

Key 15-Minute City Electrical Infrastructure Terms

- Fifteen-minute city — an urban model where homes reach daily services within a quarter-hour walk or cycle ride.
- After-diversity maximum demand — the realistic peak load of many customers combined, lower than the sum of individual peaks.
- Hosting capacity — the amount of new load or generation a local feeder accepts without breaching voltage or thermal limits.
- Secondary substation — the local transformer site that steps medium voltage down to the low voltage serving streets and buildings.
- District energy network — pipes delivering heating or cooling from a central plant to many buildings in a neighbourhood.
- Managed charging — control of vehicle charging power and timing to keep local network peaks within capacity.

15-Minute City Electrical Infrastructure Day by Day

Day 1: Proximity Planning and Electrical Demand

- Fifteen-Minute City Principles — Which Services Each Neighbourhood Must Host
- Walkability Mapping With Isochrones — Locating Local Centres and Mobility Hubs
- Mixed-Use Load Profiles — Shifting Peaks Between Homes, Shops and Clinics
- Existing Network Records Review — Spare Capacity at Feeders and Substations
- Stakeholder Map of Planners and Utility — Early Coordination of Connection Requests

Day 2: Local Distribution Capacity

- After-Diversity Demand Estimation — Sizing Supplies for Dense Mixed-Use Blocks
- Secondary Substation Siting and Plot Sizing — Land Reserved in Masterplans
- Low Voltage Feeder Routing in Shared Utility Corridors — Street Excavation Coordination
- Hosting Capacity Assessment — Rooftop Solar and Battery Acceptance Limits
- Reinforcement Options and Lead Times — Sequencing Utility Works With Construction

Day 3: Charging, Lighting and Public Realm

- Charging Demand by User Group — Kerbside, Residential and Fleet Depot Provision
- Managed and Smart Charging Schemes — Avoiding Evening Peaks on Local Feeders
- Street Lighting Design and Adaptive Controls — Pedestrian Safety and Energy Spend
- Shared Street Furniture and Pole Mounting — Reducing Clutter and Duplicate Cabling
- Micromobility Docking Power Supplies — Cycle and Scooter Hub Placement

Day 4: District Energy and Phasing Decisions

- District Heating and Cooling Options Appraisal — All-Electric Versus Networked Supply
- Local Generation and Storage at Neighbourhood Scale — Resilience of Essential Services
- Development Trigger Points — Linking Infrastructure Phases to Occupancy Growth
- Whole-Life Cost Comparison of Alternatives — Capital Investment Prioritisation
- Risk Register for Connection Delays — Contingency Supplies and Interim Measures

Day 5: Practising the Neighbourhood Phasing Plan

- Case District Walkability and Load Overlay — Applying Isochrones and Load Profiles
- Substation and Feeder Layout for the Case District — Applying Capacity Methods
- Charging and Lighting Allocation for the Case District — Applying Public Realm Methods
- Peer Challenge of Phasing Assumptions — Testing Triggers and Lead Times
- Neighbourhood Electrical Infrastructure Phasing Plan — Final Sequence and Responsibilities

Applying 15-Minute City Electrical Infrastructure After the Course

- Lead a joint session with the distribution utility overlaying walking catchments on feeder capacity for one growth area.
- Draft development trigger points for one new quarter, linking each substation and charging phase to occupancy milestones.

15-Minute City Electrical Infrastructure Questions FAQ

What is 15-minute city electrical infrastructure planning and why does it matter now?

It plans substations, feeders, charging, lighting and district energy for walkable neighbourhoods. It matters now because electrified transport and mixed-use zoning move new loads into streets faster than networks traditionally grow.

Which roles gain most from 15-minute city electrical infrastructure planning?

Urban planners, utility network planners, lighting engineers and municipal mobility staff gain most. Joint attendance with utility counterparts helps most.

How does 15-minute city electrical infrastructure planning differ from a general urban planning course?

It centres on electrical capacity rather than land use alone. Here you size demand, reserve substation plots and phase reinforcement alongside walkability goals.

What do you bring back from 15-minute city electrical infrastructure planning?

You bring back a phasing plan for a case district, showing substation sites, feeder routes, charging and lighting provision and the occupancy triggers for each stage.

15-Minute City Electrical Infrastructure: The Way Forward

The neighbourhood electrical infrastructure phasing plan first informs which substation plots and cable corridors a masterplan must reserve before land is sold. Planners, utility engineers and capital investment boards use it to agree who builds what and when. After the first district is occupied, revisit the charging and lighting assumptions against metered demand and walking patterns.