Weather Derivatives and Energy Risk Management Course

21 – 25 March 2027
Johannesburg

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Ref: 955_172872 **Date:** 21 – 25 March 2027 **Location:** Johannesburg **Fees:** 4500 Euro

Overview

Weather Derivatives and Energy Risk Management Course is a 1-week course for energy risk managers, commodity traders, treasury teams, portfolio analysts, utility commercial teams, and risk control professionals who leave with a Weather Hedge Design and Control Portfolio. Participants connect weather exposure mapping, HDD and CDD indices, contract payoffs, pricing inputs, basis risk, governance, and hedge performance to energy-market decisions. Agile Leaders Training Center delivers this course on weather derivatives and energy risk.

Who Should Attend

- Teams responsible for weather-sensitive energy demand, revenue, and volume exposure.
- Functions responsible for commodity hedging, treasury risk, and derivative controls.
- Groups responsible for market data, weather indices, valuation inputs, and model review.
- Commercial teams responsible for utility portfolios, procurement, sales, and load risk.
- Governance teams responsible for mandates, limits, approvals, reporting, and settlement oversight.

The course assumes participants can interpret energy-market exposure and derivative payoffs at work, and leaves out introductory finance and speculative trading advice.

Departments and Industries

The course supports weather-risk decisions across energy markets and weather-sensitive businesses.

- Utilities, power generation, gas, and renewable energy
- Commodity trading, treasury, and enterprise risk
- Banking, insurance, brokerage, and advisory services
- Agriculture, logistics, hospitality, and retail operations
- Finance control, model validation, and internal audit

Learning Objectives

By the end of this course, participants will be able to:

- Analyze weather-sensitive volume, revenue, price, and margin exposure.
- Compare HDD, CDD, CAT, precipitation, and wind index specifications.
- Build futures, option, swap, and collar payoff models.
- Evaluate pricing inputs, basis risk, and hedge-fit evidence.
- Apply governance, execution, settlement, and control checks.
- Prioritize portfolio hedges using performance and scenario evidence.

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Course Agenda

Day 1: Weather Exposure Foundations

- Weather-Sensitive Revenue and Volume Exposure Map
- Energy Demand and Margin Driver Matrix
- Historical Weather and Business Data Alignment Method
- Weather Sensitivity Regression Diagnostic
- Risk Appetite and Hedge Objective Register

Day 2: Indices and Contracts

- HDD and CDD Index Calculation Worksheet
- CAT, Precipitation, and Wind Index Comparison Matrix
- Weather Station and Observation Period Specification
- Futures, Swap, Option, and Collar Payoff Model
- Monthly and Seasonal Contract Structure Map

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Day 3: Pricing and Basis Risk

- Historical Distribution and Scenario Pricing Inputs
- Expected Payout and Premium Evaluation Method
- Location, Timing, and Product Basis Risk Decomposition
- Counterparty, Liquidity, and Settlement Risk Checklist
- Model Assumption and Validation Evidence Pack

Day 4: Portfolio and Controls

- Weather and Commodity Hedge Integration Matrix
- Natural Offset and Risk Transfer Comparison
- Hedge Mandate, Limit, and Approval Control Sheet
- Trade Execution and Cash Settlement Workflow
- Hedge Effectiveness and Management Reporting Dashboard

Day 5: Weather Hedge Practice

- Suggested Exercise: Energy Exposure Mapping
- Suggested Exercise: HDD and CDD Contract Selection
- Suggested Exercise: Payoff and Basis Risk Analysis
- Suggested Exercise: Portfolio Control and Performance Review
- Capstone Exercise: Weather Hedge Design and Control Portfolio

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Practical Exercises

The course uses suggested activities to integrate exposure evidence, contract mechanics, risk analysis, and governance.

- Suggested activity: map temperature-driven demand and revenue exposure for a utility and a weather-sensitive retailer.
- Suggested activity: calculate HDD and CDD indices and compare alternative contract payoffs.
- Suggested activity: diagnose location and timing basis risk using historical scenarios.
- Suggested activity: build a controlled hedge recommendation with limits, approvals, settlement, and performance measures.

FAQs

Who suits weather derivatives and energy risk training, and what does it assume?

Energy risk, trading, treasury, analytics, commercial, and control teams suit the course. It assumes participants can interpret exposure and derivative payoffs, while introductory finance and speculative trading advice remain outside scope.

How do weather derivatives differ from commodity price hedging?

Weather derivatives transfer risk linked to measurable weather indices, while commodity price hedges address changes in energy prices. Energy portfolios may use both when weather affects consumption volumes, revenues, procurement needs, or generation output.

How are HDD and CDD used in energy weather risk?

HDD and CDD aggregate how temperatures fall below or rise above a base level over a contract period. Energy teams use the resulting index to define exposure, calculate contract settlement, and compare hedge performance against weather-sensitive demand or revenue.

What creates basis risk in weather derivatives?

Basis risk arises when the contract's location, observation period, index, or payout does not closely track the organization's actual financial exposure. Teams assess the mismatch before execution and monitor it through scenarios and performance review.

How is a weather derivative hedge evaluated?

A weather derivative hedge is evaluated by comparing exposure reduction, payout behavior, premium or expected cost, basis risk, liquidity, settlement evidence, control compliance, and portfolio results across relevant scenarios.

Conclusion

Participants take back a Weather Hedge Design and Control Portfolio linking exposure evidence, index specifications, contract payoffs, pricing inputs, basis risk, controls, and performance measures. The portfolio strengthens coordination among commercial, treasury, risk, analytics, and finance-control teams. It turns weather sensitivity into a traceable hedge decision and review process.