



## PPA Advanced: Managing Market Risks for Wind and Solar

How can I assess and manage the risk of an increasing PPA portfolio?

### Introduction

The era of Power Purchase Agreements (PPAs) for wind and solar has begun. You have collected a fair bit of experience with PPAs but further questions have come up: How can I evaluate market risks? How do future power market developments in Europe affect my risk exposure? Which contract structures are exposed to which risks? Are there significant differences between markets? How can I best manage this with increasing PPA volumes in my portfolio?

### Target group

- Specialists and managers from project developers, operators of renewable energy plants, energy suppliers, direct marketers, traders, or industry
- Employees of the energy industry from the areas of energy trading, sales, purchasing, procurement, portfolio and risk management

### Your benefit

After this training you will know:

- which market risks are predominant in each of the most relevant PPA markets,
- how current market participants view and handle these risks,
- how the market risks are likely to develop in the next ten years, and
- how market risks can be mitigated along the value chain.





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## Your content

### Session 1: deep dive PPA markets and structures in Europe

- Deep dive: Which PPAs are common in which European markets?
- Exercise I: mapping and categorising PPA risks
- Pay-as-Produced, Pay-as-Nominated, baseload, virtual: What are prices, what are risks

### Session 2: PPA risks – understanding corporate buyers

- Different shades of green: What do corporates want and why?
- Example case studies: different types of corporates and their needs
- Accounting pitfalls for corporates: virtual vs. physical PPAs
- Exercise II: summarising PPA risks for corporate buyers

### Session 3: PPA risks – understanding utilities and producers

- current landscape of hedge products in Europe
- Transformation of price risk: cashflow and stack-and-roll hedge
- mapping residual risk from a hedger's perspective
- Examples: how to track and manage residual risks for PPA portfolios (price volatility risk, liquidity risk, curve risk)

### Session 4: understanding the drivers of market risks

- Understanding market price risk: commodities, fiscality, weather, and climate change
- Overview: profile and shape risk in different European markets
- Energy Brainpool's swarm scenario approach

### Session 5: Case studies on risk exposure & risk management 1.0

- Case Study 1: basis risk of a virtual cross-border PPA and hedge effectiveness
- Case Study 2: risk distribution of the volume and profile risk of a baseload solar PPA
- Case Study 3: impact of portfolio strategies on residual risks (for utilities)

### Session 6: risk management 2.0 – portfolio optimisation

- modern portfolio theory and its use for PPAs
- Which risk types benefit to what extent from diversification effects?

Case Study 4: Can RE and conventional power plants be combined to reduce portfolio risk exposure?

## Exemplary use case

You are a professional in the energy industry and have frequently dealt with PPAs and their risks. Due to increasing volumes, risk measurement and management are becoming more and more important for you.

As a plant operator, financier, energy supplier or industrial bulk consumer, you want to gain an in-depth understanding which market risks your PPAs entail and particularly how they can be managed, e. g. by hedging or diversification of geographies and technologies. You would like to go beyond an analysis of historical data and have some insight into fundamental risk modelling, taking into account future power market developments across Europe.



## Trainings for the energy sector

We quantify the energy transition

### Training formats

#### Energy BrainSessions

- live online trainings
- suitable for beginners to experts
- 2 to 3 mornings depending on the course

#### In-house training







- comprehensive basic and advanced seminars for the energy sector
- customised according to your needs
- online or in-person

#### Simulation games

- realistic trading simulations for electricity trading on spot or futures markets
- online or board game version

### Training formats legend

- Knowledge level: basic knowledge, special knowledge or expert knowledge
- Format: lecture or workshop
- online or in-person

Basic knowledge	workshop	online		In-person	
Basic knowledge	lecture	online		In-person	
Special knowledge	workshop	online		In-person	
Special knowledge	lecture	online		In-person	
Expert knowledge	workshop	online		In-person	
Expert knowledge	lecture	online		In-person	

### About us

As independent energy market experts, we focus on the databased, practice-oriented transfer of knowledge on power and energy trading in Europe. From analysis, forecasting and modelling of energy markets and prices, as well as studies and individual consulting services, to training courses, we are here to support you.

How can we support you? Feel free to contact us.

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