TOPIC-SPECIFIC LEARNING JOURNEY

COURSE PACKAGE:

"WEATHER, CLIMATE & CARBON"



ENTRIMA's Learning Platform lists a wide range of courses, all related to markets & trading. Some of these courses have been bundled to form a course package, as they all concerns the same field of expertise.

The Course Package "**Weather, Climate & Carbon**" consists of the following courses:

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1. Weather risk	3
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4. Pricing of weather derivatives	6
5. Climate change & energy policy	7
6. Renewable energy *(Bite-size insights)*	8
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11. Energy attribute certificates	13
12. Green certificates – *GOs, RECs & iRECs* *(Bite-size insights)*	14
13. Navigating ESG in the traded markets	15

Each of these courses ends with an exam. Upon passing the exam the learner will be certified instantly. The contents, duration and level of each course is set out in the pages hereafter.

Duration

Total duration*) of thirteen (**13**) courses together: **1,600** minutes (i.e. **27** hours)

- **Study hours:** 27
- **CPD points:** 27

*) *Excluding examination*

COURSE:
WEATHER RISK

This course covers weather risk. It sets out what weather elements companies can be exposed to. Attention is given to the characteristics of these weather elements and the circumstances they can bring along, as well as their impact on the financial performance of an organisation. Weather data are covered as well. By means of examples it is explained what makes data relevant and what these are used for.

This course covers the following video lessons:

1. Weather risk & weather risk management
2. Climate versus weather
3. Precipitation-related exposures
4. Precipitation-related exposures – *Hydro power plants*
5. Storms, typhoons & hurricanes
6. Weather data analysis
7. Indicators – Weather indices
8. Indicators – Weather index – Degree day
9. Indicators – Weather index – CHI
10. Risk mitigation – Introduction
11. Risk mitigation – Structuring – Weather-indexed pricing
12. Risk mitigation – Structuring – PPA
13. Risk mitigation – Structuring – Structured deal
14. Risk mitigation – Structuring – Catastrophe-related products
15. Risk mitigation – Structuring – Cat bonds
16. Risk mitigation – Structuring – Cat bonds – Triggers
17. Weather risk control

A. Examination
B. Certification

❖ Level:	Basic	No prerequisites
❖ Intensity:	30 minutes	Excluding examination
❖ Language:	Voice & text	English
❖ Including:	Examination	Certification upon passing

COURSE:
WEATHER DATA

This course covers weather risk. It sets out what weather elements companies can be exposed to. Attention is given to the characteristics of these weather elements and the circumstances they can bring along, as well as their impact on the financial performance of an organisation. Weather data are covered as well. By means of examples it is explained what makes data relevant and what these are used for.

This course covers the following video lessons:

1. Introduction
2. Data for valuation & risk management
3. Data analysis
4. Seasonality
5. Temperature data – Introduction
6. Temperature data – Frost
7. Wind data – Introduction
8. Wind data – Factors influencing wind power flow
9. Wind data – Characteristics of wind
10. Wind data – Mass continuity
11. Wind data – Wind speed – Altitude & diurnal cycle
12. Wind data – What factors does wind depend on?
13. Wind data – Average wind speed
14. Wind data – Distribution of wind speed

A. Examination
B. Certification

❖	Level:	Basic	No prerequisites
❖	Intensity:	20 minutes	Excluding examination
❖	Language:	Voice & text	English
❖	Including:	Examination	Certification upon passing

COURSE:
WEATHER DERIVATIVES

This course explains what weather derivatives are. It provides an overview of the fundamentals of these instruments and how they can be applied by companies to manage their weather exposures. Furthermore, quite some essentials are set out that make one understand how to control temperature, wind or precipitation risk. In addition, the settlement of these tools is given attention to and the reference indices that are used for this purpose.

This course covers the following video lessons:

1. Hedging tools
2. History
3. Insurance versus hedging
4. Cash settlement
5. Market participants
6. Temperature derivatives
7. Temperature derivatives – HDD
8. Temperature derivatives – CDD
9. Temperature derivatives – CAT
10. Temperature derivatives – Strip
11. Temperature derivatives – Application
12. Temperature derivatives – Frost contracts
13. Precipitation derivatives – Snow contracts
14. Precipitation derivatives – Rain contracts
15. Wind derivatives
16. Wind derivatives – Futures
17. Wind derivatives – Options
18. Wind derivatives – Swaps
19. Wind derivatives - Hurricane instruments
20. Wind derivatives - Hurricane instr. – CHI
21. Wind derivatives - Hurricane instr. – Landfall
22. Weather markets - Market liquidity
23. Basis risk
24. Example: Applying HDD derivatives

A. Examination
B. Certification

❖ Level:	Intermediate	Prerequisites: “Weather Risk” + “Weather Data”
❖ Intensity:	45 minutes	Excluding examination
❖ Language:	Voice & text	English
❖ Including:	Examination	Certification upon passing

COURSE:
PRICING OF WEATHER DERIVATIVES

This course explains what weather derivatives are. It provides an overview of the fundamentals of these instruments and how they can be applied by companies to manage their weather exposures. Furthermore, quite some essentials are set out that make one understand how to control temperature, wind or precipitation risk. In addition, the settlement of these tools is given attention to and the reference indices that are used for this purpose.

This course covers the following video lessons:

1. Actuarial method
2. Business pricing model
3. Future data required
4. Modelling
5. Modelling – Calibration
6. Modelling – Selecting the optimal model
7. Monte Carlo simulations
8. Numerical methods
9. Analytical solutions
10. Comparison between methods
11. Wind derivatives – Underlying value
12. Wind derivatives – Types of derivatives
13. Wind derivatives – Basics of turbines
14. Wind derivatives – Features of turbines

A. Examination
B. Certification

❖	Level:	Advanced	Prerequisites: “Weather Derivatives”
❖	Intensity:	20 minutes	Excluding examination
❖	Language:	Voice & text	English
❖	Including:	Examination	Certification upon passing

COURSE:
CLIMATE CHANGE & ENERGY POLICY

This course covers the energy policies that apply worldwide. First, the greenhouse effect is explained and what greenhouse gases are relevant for this process. Thereafter, attention is given to the Kyoto Protocol and its consequences. It is also set out how the policies are developed over time. In this respect, the function of the conferences of the parties (COP) is explained and the role of UNFCCC. Furthermore, the course allows to master ways to lower emission of greenhouse gases and what tools have been developed for this purpose.

This course covers the following video lessons:

1. Sustainability
2. Climate change & global warming
3. Climate versus weather
4. Risk related to climate change & extreme weather
5. Greenhouse effect
6. Greenhouse gases
7. World Economic Forum
8. IPCC
9. UNFCCC
10. Conference of the parties (COP)
11. Kyoto Protocol – Introduction
12. Kyoto Protocol – Annex I & II Parties
13. Sink activities – LULUCF
14. Carbon sequestration
15. Carbon capture & storage
16. Targets
17. The Paris Agreement
18. The Paris Agreement versus the Kyoto Protocol

A. Examination
B. Certification

❖ Level:	Basic	No prerequisites
❖ Intensity:	30 minutes	Excluding examination
❖ Language:	Voice & text	English
❖ Including:	Examination	Certification upon passing

COURSE:
RENEWABLE ENERGY

This sequence of bite-size video lessons covers video lessons in the form of question and answer (Q&A).
The series is about alle relevant aspects of renewable energy, meaning, generating electricity with wind turbines, solar panels, hydro plants, geo-thermal facilities, etcetera.

This course covers the following video lessons:

1.	Introduction to renewable energy	*32 videos*
2.	Solar energy	*32 videos*
3.	Wind energy	*33 videos*
4.	Hydro power	*32 videos*
5.	Geothermal energy	*30 videos*
6.	Biomass & bioenergy	*29 videos*
7.	Energy storage technologies	*34 videos*
8.	Grid integration of renewable energy	*31 videos*
9.	Economic & financial aspects of renewable energy	*30 videos*
10.	Renewable Energy Policy & Regulation	*32 videos*
11.	Environmental and Social Impacts of Renewable Energy	*30 videos*
12.	Energy Efficiency and Renewable Energy Synergies	*13 videos*
13.	Emerging Technologies and Innovations in Renewable Energy	*16 videos*
14.	Future Outlook and Trends in Renewable Energy	*16 videos*
15.	Renewable Power Generation & Markets	*30 videos*
16.	Renewable Power Generation & Pricing	*32 videos*
17.	Renewable Power Generation & Trading	*32 videos*

A. Examination
B. Certification

❖	Level:	Basic	No prerequisites
❖	Intensity:	240 minutes	Excluding examination
❖	Language:	Voice & text	English
❖	Including:	Examination	Certification upon passing

COURSE:
CARBON MARKETS & EMISSION RIGHTS TRADING

This course covers the carbon markets that are around globally. It is set out how these markets can be organised and what mechanisms are applied. Attention is given to the purchase and sale of emission rights and the related cost or income to emitters (including owners of physical capacity / consumers of fossil fuels).

This course covers the following video lessons:

1. Voluntary & mandatory initiatives
2. Flexibility mechanisms – Three market-based mechanisms
3. Flexibility mechanisms – Fundamentals
4. Flexibility mechanisms – Clean Development Mechanism (CDM)
5. Flexibility mechanisms – CDM – Certified Emission Right (CER)
6. Flexibility mechanisms – Joint Implementation (JI)
7. Flexibility mechanisms – JI – Emission Reduction Unit (ERU)
8. Flexibility mechanisms – International Emissions Trading (IET)
9. Flexibility mechanisms – Summary & overview
10. Emissions trading – Carbon dioxide emission rights
11. Emissions trading – Fraud
12. Emissions trading – Where to transact?
13. Emissions trading – Transaction logs
14. Emissions trading – Cap & trade system – Sulphur dioxide (US)
15. Emissions trading – Cap & trade system – The basic idea
16. Emissions trading – Cap & trade system – Price incentive – Practical example: Transfer of rights
17. Emissions trading – Cap & trade system – Price incentive – Manufactoring company
18. Emissions trading – Cap & trade system – Price incentive – Investing in renewables
19. Emissions trading – Cap & trade system – Price incentive – Carbon leakage
20. Emissions trading – Calculation – Carbon-intensity & cost of plant (Gas)
21. Emissions trading – Calculation – Carbon-intensity & cost of plant (Coal)
22. Emissions trading – Emission rights for greenhouse gases other than carbon dioxide

A. Examination
B. Certification

❖ Level:	Intermediate	Prerequisite: “Climate Change & Energy Policy”
❖ Intensity:	45 minutes	Excluding examination
❖ Language:	Voice & text	English
❖ Including:	Examination	Certification upon passing

COURSE:
VOLUNTARY CARBON MARKETS

This sequence of bite-size video lessons covers video lessons in the form of question and answer (Q&A).
The series includes goals, policies, and institutions. It also covers projects and the related permanence, additionality, leakage, and verification, certification and monitoring. Furthermore, attention is given to the pricing of credits and the procurement and trading of offsets.

This course covers the following topics:

1.	Climate Policy & Institutions	*38 videos*
2.	Assessing the Emission Footprint	*54 videos*
3.	Setting Carbon Reduction Goals	*39 videos*
4.	Fundamentals of Carbon Markets	*34 videos*
5.	The Voluntary Carbon Markets	*50 videos*
6.	Projects – General	*39 videos*
7.	Projects – Permanence	*27 videos*
8.	Projects – Additionality & Leakage	*50 videos*
9.	Projects – Verification-Certification-&-Standards	*50 videos*
10.	Projects – Monitoring & Reporting	*49 videos*
11.	Pricing of Carbon Credits	*26 videos*
12.	Procuring Carbon Offsets & Trading	*50 videos*
13.	Transparency & Communication	*50 videos*
14.	The Regulatory Environment	*50 videos*
15.	The Future of the Voluntary Carbon Markets – *Innovation & Technology*	*50 videos*
16.	Carbon Finance	*40 videos*

A. Examination
B. Certification

❖	Level:	Basic	No prerequisites
❖	Intensity:	330 minutes	Excluding examination
❖	Language:	Voice & text	English
❖	Including:	Examination	Certification upon passing

COURSE:
COMPLIANCE CARBON MARKETS

This sequence of bite-size video lessons covers video lessons in the form of question and answer (Q&A).
The series is about emission trading systems and, thus, about cap & trade mechanisms. Attention is given to market mechanisms, allowances allocation and trading, and the pricing of emission rights. Time is also spend on policies and frameworks, plus the regulatory framework.

This course covers the following topics:

1.	General Concepts	*30 videos*
2.	Emission Reduction Targets	*50 videos*
3.	Cap & Trade Systems	*24 videos*
4.	Market Mechanisms	*55 videos*
5.	Compliance & Monitoring – Reporting & Verification	*30 videos*
6.	Coverage – Emissions & Parties in Scope	*55 videos*
7.	Regional & Country-specific Issues	*60 videos*
8.	International Cooperation	*49 videos*
9.	Allowances – Allocation & Trading	*29 videos*
10.	Pricing – Stability & Predictability	*30 videos*
11.	Regulatory Environment	*42 videos*
12.	Complementary Policies	*50 videos*
13.	Cross-Border Adjustment Mechanism	*50 videos*
14.	Equity & Social Impact	*49 videos*
15.	Adaptability & Review Mechanisms	*50 videos*
16.	Future Trends	*35 videos*

A. Examination
B. Certification

❖	Level:	Basic	No prerequisites
❖	Intensity:	340 minutes	Excluding examination
❖	Language:	Voice & text	English
❖	Including:	Examination	Certification upon passing

COURSE:
CARBON TRADING – *EU-ETS*

This course explains the solution applied in the European Union for an emission trading system to trade (carbon dioxide) emission rights. In this course the characteristics of the EU system are set out. It is also covered what aspects are of relevance and how factors drive the price. Besides, it is described what measures have been taken to optimize the functioning of the system.

This course covers the following video lessons:

1. European Union – Emissions Trading System (EU ETS)
2. European Union Allowances (EUAs)
3. Registry & trading
4. EU ETS Development
5. Phases
6. Emission Allowance Allocation
7. Windfall profits
8. Compliance & sanctioning
9. Exceptional positions
10. Revised ETS directive
11. Efforts sharing decision & regulation
12. CSS directive
13. Installations & operators
14. Linking directive
15. Banking & borrowing
16. Opt-in & opt-out
17. Aviation
18. Phase 3
19. Phase 4
20. Allocating allowances & auctioning
21. New entrants & free allocation
22. Backloading & Market Stability Reserve
23. Where to transact?
24. Pricing

A. Examination
B. Certification

❖ Level:	Intermediate	Prerequisite: “Climate Change & Energy Policy”
❖ Intensity:	55 minutes	Excluding examination
❖ Language:	Voice & text	English
❖ Including:	Examination	Certification upon passing

COURSE:
ENERGY ATTRIBUTE CERTIFICATES

This course covers attribute (energy) certificates. In order to track and trace commodities from their source, their origination can be certified. Certificates can serve as proof how a commodity has been produced. This applies, amongst others, to electricity. Has it been produced by, for example, a coal-fired power plant, a nuke, a wind turbine, a solar panel or a hydro facility? In this course various regimes and types of certificates are set out so that insight is gained what applies in which regions across the globe.

This course covers the following video lessons:

1. Energy attribute certificate (EAC)
2. Greenhouse Gas Protocol
3. Guarantee of origin (GoO)
4. Renewable energy certificate (REC)
5. International renewable energy certificate (I-REC)
6. Tradable instrument for global renewables (TIGR)
7. Trading EACs
8. Gas certificates
9. Hydrogen certificates

A. Examination
B. Certification

❖ Level:	Intermediate	Prerequisite: “Climate Change & Energy Policy”
❖ Intensity:	20 minutes	Excluding examination
❖ Language:	Voice & text	English
❖ Including:	Examination	Certification upon passing

COURSE:

GREEN CERTIFCIATES – *GOs, RECs & iRECs*

This sequence of bite-size video lessons covers video lessons in the form of question and answer (Q&A).
The series is about energy attribute certificates (EACs) in general and guarantees of origin (GOs) and renewable energy certificates (RECs) specificially. The lessons cover the mechanisms behind it, as well as the pricing and trading.

This course covers the following topics:

1.	Introduction to energy attribute certificates (EACs)	*33 videos*
2.	Guarantees of origin (GOs)	*33 videos*
3.	Renewable energy certificates (RECs)	*32 videos*
4.	International renewable energy certificates (iRECs)	*33 videos*
5.	Market structures	*30 videos*
6.	Tracking & verification	*30 videos*
7.	The role of EACs in corporate sustainability	*32 videos*
8.	Environmental benefits & additionality	*31 videos*
9.	Standards & certification bodies	*31 videos*
10.	Regulatory & policy frameworks	*29 videos*
11.	Carbon markets and EACs	*31 videos*
12.	Challenges & barriers in EAC markets	*31 videos*
13.	Future trends in EAC markets	*34 videos*
14.	Pricing of EACs	*35 videos*
15.	Trading of EACs	*35 videos*

A. Examination
B. Certification

❖	Level:	Intermediate	Prerequisite: “Climate Change & Energy Policy”
❖	Intensity:	230 minutes	Excluding examination
❖	Language:	Voice & text	English
❖	Including:	Examination	Certification upon passing

COURSE:

NAVIGATING ESG IN THE TRADED MARKETS

BUNDLE:

WEATHER, CLIMATE & CARBON

This course covers non-financial factors that are used to assess a company's or asset's exposure to sustainability-related risks and opportunities. These dimensions are increasingly recognised as financially material, meaning they can impact a company's long-term performance, creditworthiness, and market valuation. The course includes frameworks and standards, drivers and trends, and ratings and indices. The programme consists of the following lessons:

1. Introduction to ESG - What is ESG?
2. Introduction to ESG - Key drivers & trends
3. Introduction to ESG - ESG frameworks & standards
4. Introduction to ESG - Ratings & indices
5. Environmental factors in market context - Climate risk & carbon accounting
6. Environmental factors in market context - Energy transition & renewables
7. Environmental factors in market context - Environmental regulation & compliance
8. Environmental factors in market context - Environmental data & disclosure
9. Social factors & market impact - Human rights labour standards & supply chains
10. Social factors & market impact - Diversity equity & inclusion
11. Social factors & market impact - Community engagement & social licence to operate
12. Social factors & market impact - Social metrics & reporting standards
13. Governance & ethical conduct - Corporate governance principles
14. Governance & ethical conduct - ESG risk management & compliance
15. Governance & ethical conduct - Anti-corruption & ethical trading
16. Governance & ethical conduct - ESG oversight & fiduciary duties
17. ESG in traded markets - ESG integration in investment & trading
18. ESG in traded markets - ESG & commodity trading
19. ESG in traded markets - ESG in energy markets
20. ESG in traded markets - ESG risk pricing & market impact
21. Practical implementation - Building an ESG strategy in your organisation
22. Practical implementation - Tools platforms & ESG tech
23. Practical implementation - Trends & innovation
24. Practical implementation - Real-world case study – 1 – Mining company
25. Practical implementation - Real-world case study – 2 – Utility
26. Practical implementation - Real-world case study – 3 – Asset manager
27. Practical implementation - Real-world case study – 4 – Commodity Trader

A. Examination
B. Certification

❖	Level:	Basic	No prerequisites
❖	Intensity:	115 minutes	Excluding examination
❖	Language:	Voice & text	English
❖	Including:	Examination	Certification upon passing