

Applying Green Energy Finance

Online programme overview

COURSE OVERVIEW & ENROLLMENT INFORMATION



INTRODUCTION

The Applying Green Energy Finance programme introduces key topics in green energy finance. It covers renewable energy (RE), energy efficiency (EE), and financing RE/EE projects. To complete the programme, participants take all mandatory courses plus one elective per section, with optional courses available for reviewing energy, solar resources, and electricity basics.

THIS PROGRAM IS SUITABLE FOR THOSE WHO:

- Seek an introduction to green energy finance
- Are involved in project finance
- Want to specialise in green energy project finance

To benefit from this programme, participants should have a basic understanding of financial management and business administration. Additionally, experience using Excel and an interest in renewable energy and energy efficiency technology are also beneficial.

LEARNING OBJECTIVES

- Assess risks in RE or EE project lifecycles
- Understand bankability criteria and apply them to RE and EE projects
- Analyse the political and legal market frameworks that apply to specific Renewable Energy and Energy Efficiency projects
- Identify project finance structures and procedures for RE and EE projects

SCHEDULE & ORGANISATION

STARTING DATES	Spring I Fall semester each year Start date: 1 April / 1 October
ESTIMATED WORKLOAD	• 120 hours in total • 5 - 10 hours study time per week • 3 Live webinars • 3 Assignments
FEES	€ 1.100,00 Payment methods: VISA, MasterCard, American Express, PayPal, Invoice
DISCOUNTS	Early Bird 10%, Alumni 10%, Group 5% (min. 2 courses)
REGISTRATION	You can register online: Shop - RENAC

DEADLINES

Early bird deadline:
20 February/ 20 August

Registration deadline:
30 September / 31 March

LEARNING OBJECTIVES & CONTENT OF THE COURSES



THE APPLYING GREEN ENERGY FINANCE ONLINE COURSES

OPTIONAL INTRODUCTORY COURSES

Participants will have access to short introductory courses on energy and electricity topics to learn or revise the basics. These courses are not mandatory, and will not be covered in the exam.

Elective optional

- Introduction to energy
- Introduction to electricity
- Introduction to the solar resource

MAIN COURSES

- Introduction to renewable energy projects
- Introduction to energy efficiency projects
- Market overview of global renewable energy and energy efficiency financing
- Policies for renewable energies in the electricity sector

- Support mechanisms for energy efficiency projects
- Renewable energy feasibility assessment and investment valuation
- Debt financing process and credit risk management
- Renewable energy project finance

ELECTIVE MANDATORY COURSES

Participants will need to choose one course from each renewable energy and energy efficiency technologies.

Elective Mandatory

- PV - application
- Wind power - application and cost development
- Biogas - application
- Energy efficiency in industry - application
- Energy-efficient buildings - application

LEARNING OBJECTIVES & CONTENT OF THE COURSES



MAIN COURSES

Introduction to renewable energy projects

After completion of this course, participants will be able to:

- Define the character of energy efficiency project
- Analyse drivers and barriers for energy efficiency projects
- Assess the relevance of energy efficiency in different economic sectors in the context of climate change
- Demonstrate principles of energy efficiency finance options and the role of providers of finance

Content

- Introduction to renewable energy projects
- Renewable energy projects
- Financial aspects of renewable energy projects
- Non-financial aspects of renewable energy projects

Introduction to energy efficiency projects

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Content

- Introduction to energy efficiency
- Setting the scene for energy efficiency
- Definitions, standards and technical terms
- Energy efficiency projects
- Financing of energy efficiency projects

LEARNING OBJECTIVES & CONTENT OF THE COURSES



MAIN COURSES

Market overview of global RE and EE financing

After completion of this course, participants will be able to:

- Demonstrate the global investment situation and major trends in renewable energy and energy efficiency finance
- Classify and define renewable energy and energy efficiency finance as well as asset classes
- Distinguish different types of investors

Content

- Renewable energy finance market overview
- Energy efficiency finance market overview

Policies for renewable energies in the electricity sector

After completion of this course, participants will be able to:

- Analyse and design the most widely used support mechanisms for renewable energy (feed-in tariff, net-metering, auctions and other schemes)
- Determine conditions to design successful support mechanisms or regulatory policies
- Discuss suitability of policy regulations for different phases of the energy transition

Content

- Drivers for renewable energy deployment and targets
- Procurement Mechanisms: Auctions and feed-in tariffs
- Incentives for Distributed Generation: Self-consumption, prosumers and rooftop solar PV
- Power System Flexibility for RE integration
- Grids
- Planning and permitting for RE projects
- Industrial policies and socio-economic benefits (Just transition)

LEARNING OBJECTIVES & CONTENT OF THE COURSES



MAIN COURSES

Support mechanisms for energy efficiency projects

After completion of this course, participants will be able to:

- Name different barriers to energy efficiency deployment
- Identify the roles and competencies of political stakeholders in energy efficiency
- Explain the bundling of different support mechanisms to achieve governmental goals
- Discuss the benefits and drawbacks of the most common support mechanisms

Content

- Why we need energy efficiency policies
- Benefits of support mechanisms
- Types of energy efficiency policy measures
- Combining and assessment different measures
- Case study – examples of existing support mechanisms

Renewable energy feasibility assessment and investment valuation

After completion of this course, participants will be able to:

- Illustrate basic financial principles including the time value of money and the determination of cost of capital
- Increase understanding of capital budgeting tools to assess renewable energy investment attractiveness
- Perform calculations of important economic parameters to assess the viability of a renewable energy project
- Demonstrate concepts of risk and uncertainty as well as risk assessment instruments

Content

- Basic financial principles and concepts
- Financial performance indicators
- RE project risks and uncertainties

LEARNING OBJECTIVES & CONTENT OF THE COURSES



MAIN COURSES

Debt financing process and credit risk

After completion of this course, participants will be able to:

- Explain the process of credit risk management related to RE project financing transactions
- Apply the principles of risk allocation in projects
- Explain the roles and contributions of the main stakeholder groups in the climate finance landscape
- Distinguish between the different sources and mechanisms of climate finance
- Assess the suitability of various sources and mechanisms for specific projects
- Discuss the project loan documentation and important clauses included in its main agreements
- Recall the principles of restructuring project financing

Content

- Foundations of risk management in project financing
- Project documentation, structuring, credit analysis, rating and credit approval
- Project loan documentation
- Due Diligence - documenting a project for credit assessment
- Analysis of contracting options in the RE project setting

Renewable energy project finance

After completion of this course, participants will be able to:

- Demonstrate the different financing options of renewable energy projects in principle and the project finance option in more detail
- Perform a risk assessment for renewable energy projects
- Interpret a bank's view of the risks related to PV, wind, and biogas plants
- Collect the data required for a bankability assessment of a renewable energy project

Content

- Available financing options
- SPV-contract negotiation
- Business planning
- Bankability assessment
- Financial engineering
- Examples

LEARNING OBJECTIVES & CONTENT OF THE COURSES



ELECTIVE SPECIALISATION COURSES OPTIONAL AND MANDATORY

Participants will need to choose one course from each Renewable Energy and Energy Efficiency technologies.

Elective Mandatory

- PV - application
- Wind power application
- Biogas application
- Energy efficiency in industry - application
- Energy efficient buildings - application

CONTENT DETAILS OF ELECTIVE SPECIALISATION COURSES

PV- application

After completion of this course, participants will be able to:

- Describe a range of grid-connected and off-grid PV applications and how they are useful
- Visualise how onsite PV electricity generation can meet daily electricity demand
- Describe solar irradiation around the globe
- Calculate the required spacing between PV module rows to avoid self-shading
- Calculate the basic energy yield from a PV system using peak sun hours and performance ratios
- Explain which factors influence the capital and operating expenditures of PV systems and provide examples of system costs around the world
- Perform basic calculations of payback times and unit cost of electricity for grid-connected and off-grid PV systems

Content

- Grid-connected PV applications
- Off-grid PV applications
- Energy flow and metering options
- Solar irradiation and space requirements
- PV system energy yield
- Economics of PV systems

LEARNING OBJECTIVES & CONTENT OF THE COURSES



CONTENT DETAILS OF ELECTIVE SPECIALISATION COURSES

Wind power - application and cost development

After completion of this course, participants will be able to:

- List the different applications of wind turbines and name the turbine components
- Understand the economic and environmental aspects of wind power

Content

- Wind power applications
- Introduction to wind turbine components
- Wind turbine power output
- Wind farms and the protection of the environment
- Repowering and decommissioning
- CAPEX, OPEX and LCOE of wind power

Biogas - application

After completion of this course, participants will be able to:

- Describe the range of applications for biogas systems
- Explain the relevance of biogas in the energy mix
- Classify the most common types of biogas systems and their components, purpose, and output
- Explain a biogas plant's role in transforming organic waste into organic fertiliser
- Describe all the logistics required to provide the needed substrates for a biogas system
- Analyse the impact of different input parameters on the power output of biogas systems
- Evaluate biogas systems based on economic and environmental aspects

Content

- Biogas applications
- Biogas production
- Biogas plants output
- Biogas system classification
- Economic and environmental aspects

LEARNING OBJECTIVES & CONTENT OF THE COURSES



CONTENT DETAILS OF ELECTIVE SPECIALISATION COURSES

Energy efficiency in industry – application

After completion of this course, participants will be able to:

- Demonstrate the basic functions of cross-sectoral technologies in industry
- Determine areas of application for cross-sectoral technologies in industry
- Prepare technical measures to enhance the energy efficiency of cross sectoral technology
- Explain the technical energy-saving potential of technical measures to enhance energy efficiency

Content

- Energy Efficiency in industry
- Drivers and barriers for energy efficiency in industry
- How to measure energy efficiency performance in the company/ industry
- Corporate social responsibility and sustainability
- Energy efficiency potential for industry
- Electric drives: areas of application in industrial sectors
- Heating
- Cooling
- Heating and cooling from renewables
- Pump systems industrial application
- Compressed air systems
- Ventilation systems
- Lighting in industry
- Role of innovation, renewables, and digital solutions
- Trends in industry

Energy efficient buildings – application

After completion of this course, participants will be able to:

- Explain the relevance of buildings in the context of climate mitigation
- Compare different energy efficiency standards for buildings
- Explain how climate factors affect structural measures and building energy consumption
- Illustrate the benefits of energy-efficient buildings
- Compare the economics of green buildings with conventional buildings

Content

- Status quo of the building sector
- Barriers and drivers in Energy efficiency buildings
- Energy efficiency policies and building standards
- Benefits of “green” buildings
- Energy efficiency in buildings principles
- Thermal comfort, climate data, and heating and cooling degree days
- Reducing energy demand
- Reducing energy consumption
- Reducing fossil fuel consumption
- Digitalisation

LEARNING METHODS & ONLINE PLATFORM FEATURES



IMPORTANT FEATURES

- Interactive learning platform
- Multilanguage platform
- Forum for participants
- Integrated Glossary
- Feedback questionnaires
- Stream/Download videos
- Live lectures
- Self-quizzes/Online exams
- Certificates

EARN YOUR CERTIFICATE

- Digital Certificate of Completion
(final grade 70% or above)
- Digital Certificate of Attendance
(final grade below 70%)

DEMO COURSE

For a first impression of our online platform, have a look at our demo course: [Demo Course](#)

TECHNICAL REQUIREMENTS

- An e-mail address, which is regularly checked
- A stable internet connection (at least 2 Mbit/s)
- We use Zoom for webinars
- Headset or speakers are required to participate on webinars



Programme certified by ZFU (German Central Office for Distance Learning – official quality standard for distance learning in Germany)

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