

Renewables Academy Online

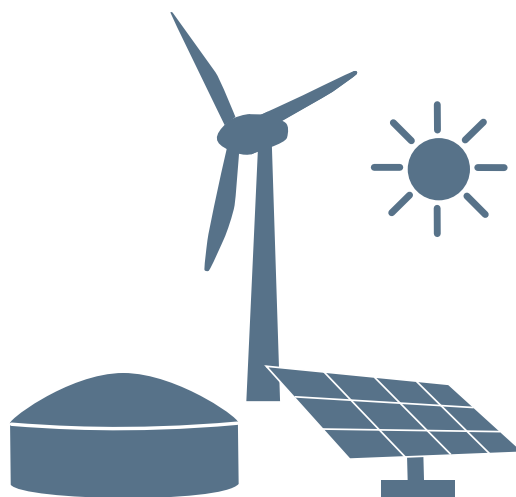
# Applying Green Energy Finance

Online training on aspects of project finance of renewable energy and energy efficiency projects

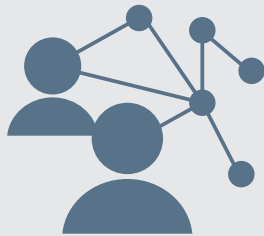


# Applying Green Energy Finance

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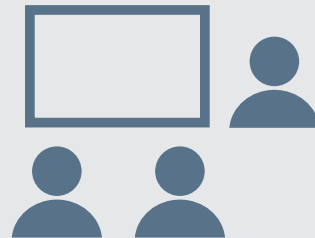


## RENAC Online



### RENAC Online helps you:

- Boost your professional career
- Study with flexibility following your own schedule
- Learn at any time and from any location



### RENAC Online offers extensive support & interactive learning:

- Videos
- Graphics
- Exercises for self-evaluation
- Discussion forum
- Virtual classrooms



### RENAC Online staff are:

- Certified e-learning trainers
- Experienced professionals
- In direct contact with the industry



CERTIFIED EUROPEAN E-LEARNING MANAGER

## What is the “Applying Green Energy Finance” Online Training?

Applying Green Energy Finance is tailored to deliver a comprehensive, general introduction into green energy finance topics. It provides fundamentals of renewable energy (RE) and energy efficiency (EE) technologies and details about financing of RE and EE projects. The international perspective of climate finance is covered as well.

### Introductory courses

Each participant will have access to short introductory courses on energy and electricity topics to learn or revise the basics.

### Courses

There are two course packages available: one related to renewable energy (RE) finance, the other one to energy efficiency (EE) finance. Both packages include courses on respective technologies, support schemes, financial appraisal and climate finance.

### This training suits you if you:

- Need to know more on RE and EE project financing
- Would like to get introduced to the green energy financing sphere
- Want to specialize as a finance person in green energy projects

### After the online training, participants will be able to:

- Assess risks in the lifecycle of a RE or EE project
- Discuss bankability criteria and apply them to RE and EE projects
- Identify project finance structures and procedures for RE and EE projects
- Explain principles of climate finance mechanisms and its landscape

## Course packages

Participants can choose between two different online trainings: the renewable energy (RE) finance package or the energy efficiency (EE) finance package.

### RE finance package

This online training provides insights into renewable energy project finance. The courses comprised in this package are:

- Introduction to RE projects
- Greening the bank
- Technology: PV application, Wind power, Biogas application
- Methodology of project valuation
- RE project finance
- Project contracts
- RE support mechanisms
- Climate finance

**Fee:** 840 Euro

**Duration:** 3 months

**Study time:** approx. 80 hours

### EE finance package

This online training provides insights into energy efficiency finance schemes. The courses comprised in this package are:

- Introduction to EE projects
- Greening the bank
- Technology: EE industry – application, EE buildings – application
- Methodology of project valuation
- Systematic approaches for energy saving
- Financing energy efficiency projects and ESCOs
- EE support mechanisms
- Climate finance

**Fee:** 840 Euro

**Duration:** 3 months

**Study time:** approx. 80 hours

Two course intakes per year:  
1st April and 1st October!



## Why choose RENAC Online?

### Self-study material

#### 1 Text and Images

Courses are structured in small, illustrated units of instruction; learners are guided through the material step-by-step.



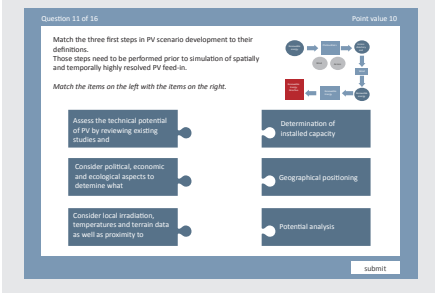
#### 2 Videos

Video lectures explain some of the most important topics in a visual and entertaining way.



#### 3 Tests

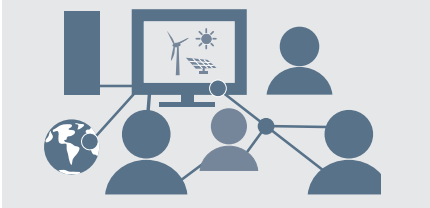
Many self-assessment tests within each course help participants to test their knowledge.



### Extensive support

#### 1 Forum

Support and communication take place in a discussion forum. RENAC monitors the forum constantly. RENAC experts are ready to give assistance and discuss the course topics.



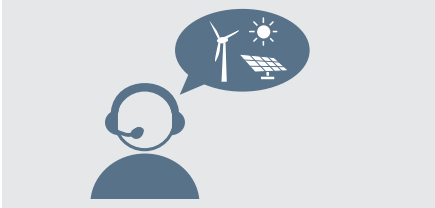
#### 2 Assignment

After studying each course, participants are asked to answer an assignment question. RENAC gives individual feedback for these assignments.



#### 3 Virtual classroom

Participants should attend the live virtual classroom sessions (webinars). These are conducted by renewable energy experts. During and after the presentation participants are invited to discuss in the live chat.



### Certificate

All participants who score above 70% in the final online exam will receive a printed RENAC certificate. All others will receive a certificate of attendance per e-mail.



#### For Spanish-speaking participants (upon request):

- Course texts and self-tests in Spanish
- Videos with Spanish subtitles
- Support by a Spanish-speaking tutor

Live virtual classrooms (webinars) for the whole class and exams are held in English language only.

# Applying Green Energy Finance

## Schedule

### The courses will be online:

Spring and fall semester each year  
Start date: 1 April / 1 October

### Recommended study time:

5 – 10 hours per week

### Resulting duration:

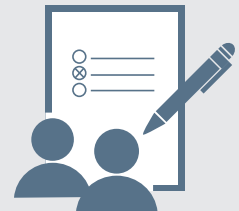
3 to 6 months for the entire training depending on your own pace.

### Assignments:

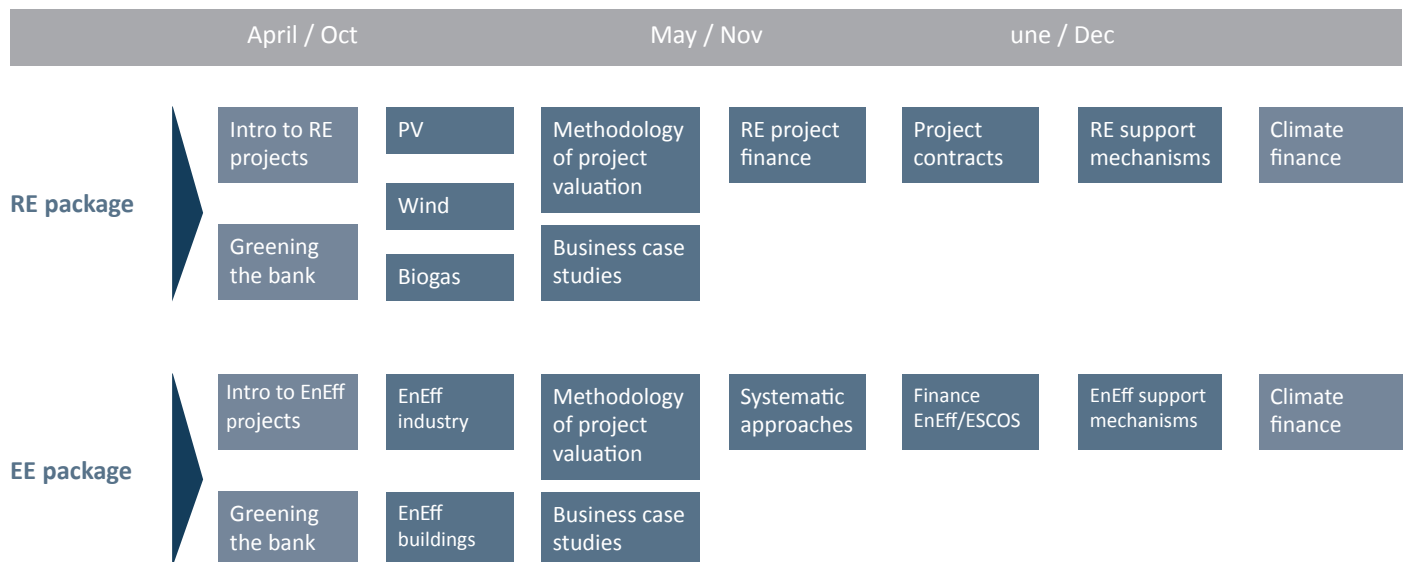
The courses are designed for a continuous participation from the beginning of the semester until the exam. There is an assignment for each course, which counts towards the final grade. Participants are asked to write a short statement regarding an important topic of each course. Assignments need to be handed in by the deadlines.

### Scheduled exam dates:

Participants can take the exam after 3, 4, 5 or 6 months

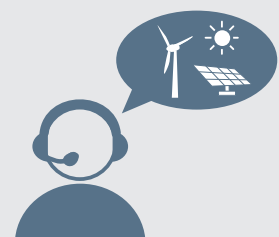


## Spring semester / fall semester



## Live virtual classrooms (webinars)

Three live virtual classrooms are part of the Applying Green Energy Finance online training. These live events are not mandatory, but participation is strongly recommended.



**Webinar 1**  
Introduction to RENAC Online  
First week of the semester  
(1 hour)

**Webinar 2**  
Energy yield of renewables  
Mid of the semester  
(1 hour)

**Webinar 3**  
Financial aspects of RE projects  
End of the semester  
(1 hour)

## Registration and discounts

### Registration:

You can register for the online training via the registration form at:

[www.renac.de/trainings-services/trainings/renac-online](http://www.renac.de/trainings-services/trainings/renac-online)

### Deadlines:

Early bird deadline: 20 August / 20 February

Registration deadline: 27 March / 27 September

Participants who are not able to finish the online training in one semester can book an extension of 6 months (following semester) at a 80% reduced course fee

### Discount:

Early bird 10%; group (2 or more) 5%; combination of both 15%

### Payment:

VISA, MasterCard, American Express, invoice

### Technical information

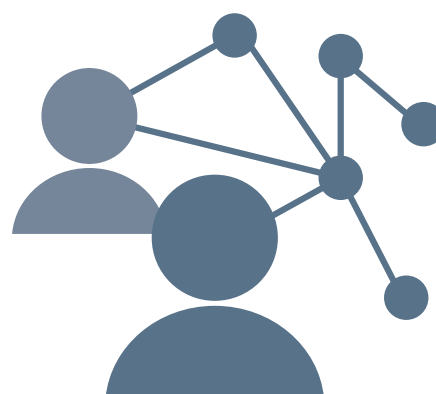


You need to provide an e-mail address, which you check regularly. Furthermore you need a computer with a stable internet connection (at least 2 Mbit/s). For webinars, the AdobeConnect add-in or app should be installed, and a headset or speakers are required to listen to the presentation.

## Demo course

For a first impression of our online platform, have a look at:

<http://renewables-online.de/blocks/demologin/logindemo.php?course=Demo>



## Learning objectives and content of the courses

### Introduction to energy



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

- Describe the global situation of energy supply and demand
- Differentiate forms of energy as well as energy and power
- Name fundamental parameters, units and conversion factors related to energy topics

**Content**

Development of energy demand

- Energy supply and demand, fossil fuels
- Renewable energy resources
- Outlook of energy supply

Physical basics

- Energy and supply chain
- Forms of energy
- Energy and power
- Performance indicators for energy conversion
- Capacity factor and full load hours

Units and conversions

- Introduction
- International System of Units
- Energy content in different fuels

### Introduction to electricity



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

- Describe the basic technological terms and principles governing the operation of electrical power systems
- Give reasons for keeping grid frequency stable
- Explain why power systems are typically built as three-phase AC systems and
- Distinguish between electric energy and electric power

**Content**

Basics of electricity

- Current, voltage, resistance, frequency
- Balance and imbalance in the grid, reasons for keeping grid frequency stability
- Peak voltage and phase angle, different phase angles
- Three phase systems
- Active, reactive and apparent power
- Relationship between voltage, current and power, power factors



## Introduction to renewable energy projects



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

- Illustrate the steps and tasks of a project life-cycle of RE projects
- Compare different public and private perspectives onto RE projects
- Assess project attractiveness with standard methods

### Content

#### Introduction

- General characteristics of a project
- The project realization cycle
- The average lifetime of RE projects
- End of life considerations
- Typical players in RE projects

#### Financial aspects of RE projects

- 'Investment' and 'Investment appraisal', investment decision
- Assessing an investment's attractiveness
- Financial management tasks
- Cost structure of RE projects

#### Non-financial aspects of RE projects

- Public and private investment appraisal, public support mechanisms
- Externalities of RE projects
- Translating external, non-monetary effects



## Greening the bank



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

- Explain potential effects of climate change on businesses
- Identify different areas for converting a bank into a “green” bank,
- Illustrate the Green Finance Framework including the green credit cycle and
- Summarise principles of remedial management

### Content

#### Climate change and its implications

- Background on climate change
- Potential effects of climate change on regions
- Potential business risks related to global warming
- Potential challenges related to global warming
- Potential opportunities related to global warming
- Possible mitigation actions; role and responsibility of banks

#### The green finance framework

- Definition of green finance
- Range of activities of green investments
- Public green policies and green finance drivers
- Assessment steps in the green credit cycle
- Green loan officer vs. traditional loan officer
- Green financing options

#### System sizing

- Load profile, peak load, penetration rate, energy share
- Generator minimum loadings

#### Remedial management

- Goals and guidelines in remedial management
- Early warning signals
- Remedial management actions



## Photovoltaics



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

- Name the different applications for PV systems and corresponding categories
- Decide which system types and components are to be used for which purpose
- Explain the basic parameters impacting power output of a PV system and
- Paraphrase the economic aspects of PV systems incl. energy yield, metering options and costs

### Content

#### Application

- CPV system categories/application
- Grid-connected and off-grid configuration

#### Components of a PV system

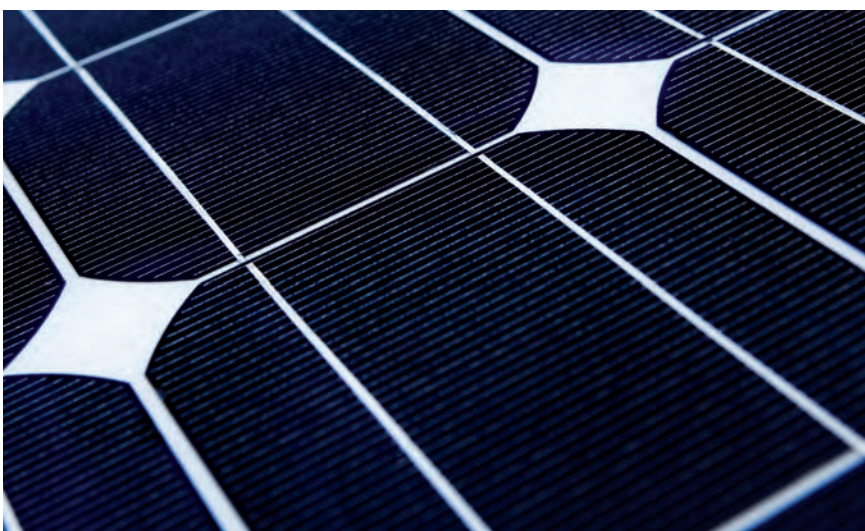
- Overview of PV cell types, PV modules
- Introduction to inverters and mounting structures

#### Physical aspects

- PV cell energy output
- Electrical characteristics and the I-V curve
- Factors affecting power output

#### Energy yield and Performance Ratio

- Definition, calculation and example
- Economics of PV systems





## Wind power

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

- Assess the potential and requirements for wind energy (e.g. resources, site selection)
- Decide which of the most widely used system types and components are to be used for which purpose
- Employ the basic parameters for system sizing and roughly calculate the energy yield
- Sketch the planning and implementation steps for a wind power plant

### Content

#### Physical basics

- Causes of wind
- Wind speed units and density
- Power coefficient and Betz limit

#### Wind speed shear

- Wind speed change above ground
- Wind speed extrapolation to a certain height
- Roughness length and wind shear exponent

#### Wind measurement

- Equipment
- Wind direction and wind rose, wind speed turbulence
- Light detection and ranging (LIDAR) and sound detection and ranging (SONAR)
- The Weibull equation

#### Wind turbine component

- Wind turbines- range of designs
- Rotor blades and nacelles
- Power control and power limitation methods
- Wind turbine power curves; power coefficient curves
- Air density correction of power curves
- Tip-speed ratio

#### Standards and norms

- Wind turbines- range of designs
- Rotor blades and nacelles
- Power control and power limitation methods
- Wind turbine power curves, power coefficient curves
- Air density correction of power curves
- Tip-speed ratio

#### Wind farm planning and design: energy yield and wind farm layout

- Introductory comments
- Energy yield calculation
- Planning step overview
- Wind turbine and wind farm siting

#### OPEX, CAPEX and LCOE

- Investment costs (CAPEX); Operational costs (OPEX)
- Levelised cost of energy (LCOE)

## Biogas



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

- Describe the range of applications for biogas systems and present the relevance of biogas in the energy mix
- Classify the most frequent biogas system types, their components, purpose and output
- Analyse the impact of different input parameters on the power output of biogas systems and
- Evaluate biogas systems based on economic and environmental aspects

### Content

#### Biogas applications

- What is biogas? Benefits of biogas
- Role of bioenergy in the energy mix

#### Classification of biogas systems

- Household digesters; covered lagoon systems
- Processes in a covered lagoon system
- Industrial plants; agricultural plants; municipal solid waste biogas plants
- Waste water treatment plants

#### Principles of biogas production

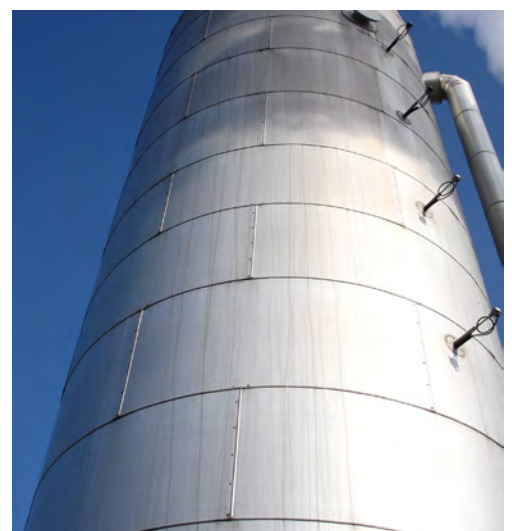
- Production of biogas through anaerobic digestion; substrates
- Methane yield of the substrate; quality of the substrate
- Parameters for the anaerobic digestion process

#### Output of biogas plants

- Direct combustion of biogas
- Combined heat and power (CHP) generation
- Energy flow of a CHP unit; digestate
- Storage and conditioning of biogas; conditioning

#### Economic and environmental aspects

- Investment and CAPEX
- Operational expenditures
- Environmental evaluation



## Methodology of project valuation



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

- Describe the principal setting of a renewable energy project, incl. relevant stakeholders, development processes
- Project appraisal structure
- Explain the most important economic parameters used in renewable energy project planning
- Perform some example calculations of the basic economic parameters, e.g. the internal rate of return (IRR)

### Content

#### Introduction to REP financing options

- REP financing options, equity and debt capital
- Corporate (balance sheet) and project financing, corporate financing versus project financing
- Special financing considerations for REPs, example REP financing structures

#### REP risks and uncertainties

- Introduction to REP risks and uncertainties
- The concepts of risk and uncertainty in investment appraisal
- Typical sources of risk and uncertainty in REPs, general risk assessment instruments
- Mark-ups / Sensitivity analysis / Simulation / Scenario analysis
- Risk reduction in practice – ‘operational treatment of risk’s

#### Basic financial principles

- Introduction to basic financial attractiveness
- “Profit” as indicator of project attractiveness? “Cash flow” as proper indicator of project attractiveness
- Time value of money: interest, components, the concept of discounting
- Interest and cost of capital, weighted Average Cost of Capital (WACC)

#### PraFinancial performance indicators

- Introduction to financial performance indicators
- Net Present Value (NPV); internal Rate of Return (IRR)
- Simple Payback (SPB) and discounted Payback (DPB)
- Benefit-to-Cost Ratio (B/C)
- Levelized Cost of Electricity (LCOE)
- Debt Service Cover Ratio (DSCR)



## Renewable energy project finance



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

- Know the different financing options of REprojects in principle and the project finance option in more detail
- Perform a risk assessment for renewable energy projects
- Understand 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

#### Three different financing options

- Financing options - overview
- Balance-sheet financing and project finance, capital market financings

#### Business planning

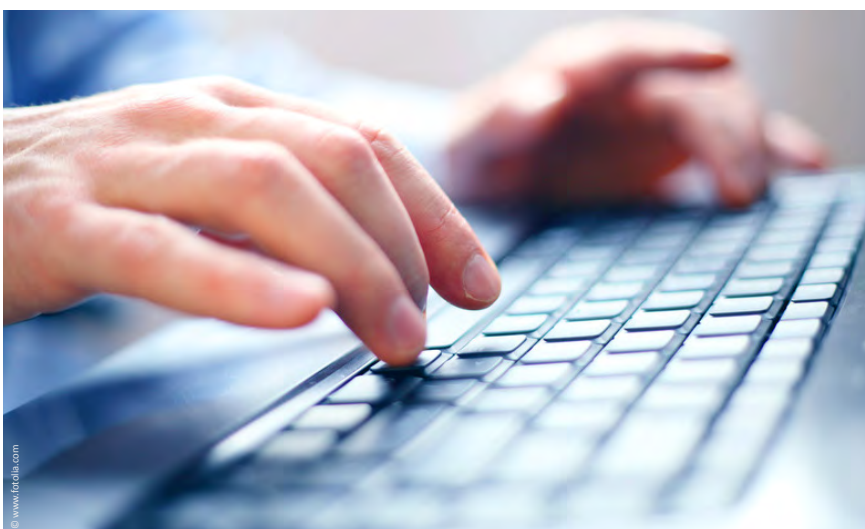
- Estimation of a project's cash out-flows and in-flows (cont'd)
- Cash flow "waterfall" concept; calculation of project revenues
- Operational cost calculation and taxes payable
- From CADS to ECF; decommissioning costs and terminal values

#### Bankability assessment

- Bankability assessments, information asymmetries as a reason for bankability assessments
- Setting credit limits to prevent moral hazard
- Differentiating between risk and uncertainty, financial value of risk and ABC-analysis
- RE project risks during construction
- Technology and operational risks and mitigation measures
- Market, resource and regulatory risks and mitigation measures
- RE project due diligence advisors
- Scopes of work for the advisors, design of a "project data rooms"

#### Examples: PV project in Germany, wind project in France and biogas project in Romania

- Assessment of annual energy generation
- Revenues from support systems / the energy market
- Risk analysis (identification, assessment and mitigation) and due diligence; cash flow analysis





## Project contracts

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

- Distinguish different types of project contracts and the corresponding contract partners
- Draft and prepare different types of contracts required in renewable energy project finance
- Apply these project contracts in order to achieve a bankable project finance structure and to minimize the project risks
- Analyse the requirements of international financing institutions on project contracts

### Content

#### Introduction

- Contractual relations in renewable energy project finance
- Key functions and negotiations of project contracts
- How to conclude a fitting and reliable

#### Contracts in international projects

- Dispute settlement in international projects
- International private law
- The UN Convention on Contracts for the International Sale of goods
- Advantages and disadvantages of CISG
- Arbitration as an alternative dispute settlement systems

#### Contracts in renewable energy projects

- Contractual overview; contracts relevant to installing a power plant
- EPC contracts; purchase contracts; grid connection agreements
- Supply and offtake agreements, land leases and other operating contracts
- Power purchase agreements; supply contracts in biogas projects
- Land lease agreements; operating and management contracts
- Operations and Maintenance (O&M) contracts

#### Potential risks for investors

- Legal risks associated with the land required for a project
- Political risks; legal due diligence
- Lender protection

#### Requirements of financing institutions

- Requirements of the World Bank
- Requirements of the Asian Development Bank
- Requirements of the Inter-American Development Bank



## Support mechanisms for renewable energy

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

- Contrast the concepts of grid parity and fuel parity
- Analyse the most widely used support mechanisms for renewable energy
- Recommend specific support mechanisms for certain RE projects
- Demonstrate the basic principles of electricity markets

### Content

#### Introduction

- Objectives of support mechanisms for renewable energies
- Renewable energy support and cost-competitiveness
- Categorisation of support mechanisms for renewable energies
- A new paradigms

#### Physical basics

- Grid parity and fuel parity

#### Net metering design

- Grid parity and incentives for self-consumption via net metering
- Retail electricity tariff structure and self-consumption incentives
- Program and project size caps in net metering schemes
- Roll-over provisions in net metering schemes
- Payment for excess electricity production in net metering schemes
- Cost-benefit analysis for net metering (benefits and costs related to distributed PV and net metering)

#### Feed-in Tariff schemes

- Long payment duration under FiT regimes
- Tariff calculation methodologies for FiTs, objectives and spreadsheets
- Input data for cost-based FiT tariff calculation in Germany
- Tariff degression in FiT schemes, flexible tariff degression in FiT schemes
- Capacity caps in FiT schemes, feed-in premiums
- Advantages and disadvantages of FiTs

#### Quota-based mechanisms and renewable portfolio standards

- Revenue sources for the project developers under certificate trading mechanisms
- Volatility of certificate prices
- Technology-specific support and quota-based mechanisms
- Advantages and disadvantages of quota-based mechanisms

#### Financing renewable energy support mechanisms and frameworks

- Allocation mechanism
- Public financing for renewable energies

#### Electricity markets and revenue streams

- The “merit order principle”, the “merit” order effect’s

#### Support mechanisms and risk perception for project financing

- Evaluation criteria for different RE support mechanisms
- Risk perception and evaluation, project finance risk in developing countries

## Climate finance



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

- Compare the roles and respective contribution of the main players and institutions involved 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 and
- Analyse practical examples of climate finance concepts

### Content

#### Principles of climate finance

- Climate finance after Paris
- Climate finance definitions
- Climate finance commitments by developed countries
- Climate finance needs and flows
- Climate finance sources and instruments
- Climate finance uses: mitigation
- Climate finance uses: adaptation

#### Sources and mechanisms of climate finances

- Financial mechanisms of the UNFCCC
- Access modalities: via intermediaries
- Access modalities: direct access
- Multilateral Development Banks
- Bilateral finance: relevance
- Bilateral finance: landscape
- Domestic climate financing sources
- Private financing in climate finance
- Carbon pricing
- Green bonds

#### Frameworks to deliver finance for climate action

- Nationally Determined Contributions
- Low Carbon/Emission Development Strategies
- Nationally Appropriate Mitigation Action
- Project-based climate financing / Example

#### Measurement, Reporting and Verification

- MRV – concept and purpose
- Monitoring and Evaluation: characteristics
- M&E compared to MRV

## Introduction to energy efficiency projects



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

- Define the character of energy efficiency projects
- 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

Setting the scene - energy efficiency and the global experience

- International importance of energy efficiency
- Benefits of energy efficiency
- Stakeholders in energy efficiencies

Definitions, standards and technical terms

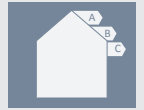
- Definition of energy efficiency
- Energy efficiency projects
- Additional technical information

Financing of energy efficiency projects

- The economics behind energy efficiency projects
- Role of providers of finance in a green economy
- Internal consequences for POF when financing energy efficiency
- Special features of energy efficiency finance
- Barriers to energy efficiency finance
- Financing options



## 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 energy efficiency with regard to the respective cross-sectoral technology and
- Classify the saving potential of the technical measures to enhance energy efficiency

### Content

#### Heating and cooling

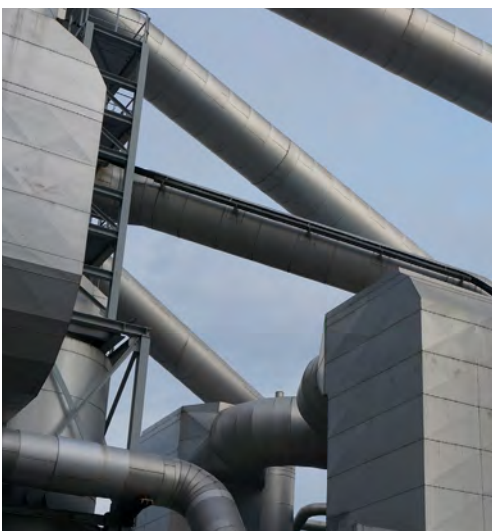
- Heating: Industrial areas of application
- Energy efficiency in heating processes
- Cooling: Industrial areas of application
- Energy efficiency measures and potential for cooling equipment

#### Electricity based cross-sectoral technology

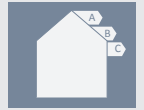
- Electric drives: areas of application in industrial sectors
- Lifecycle costs of electric drives and saving potentials
- Pump systems
- Energy efficiency in pump systems
- Compressed air systems
- Energy efficiency in compressed air systems
- Ventilation: industrial areas of application
- Energy efficiency in ventilation systems
- Lighting
- Luminaires and their industrial areas of application
- Energy demand reduction strategies for lightings

#### Sectoral approaches

- Cement industry; textile industry
- Food industries
- Energy consumption in the meat sub-sector
- General energy efficiency measures in the food industry



## Energy efficient buildings – application



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

- Report 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 the buildings' energy consumption
- Illustrate benefits of energy efficiency in buildings
- Compare economics of green buildings with conventional type of buildings

### Content

#### Energy consumption in buildings

- Energy flows and energy balance of buildings (heating, cooling)
- Trends in final energy consumption of residential buildings
- Trends in final energy consumption of buildings in the service sector
- Energy efficiency trends in residential buildings and service sector buildings

#### Buildings in different climate zones

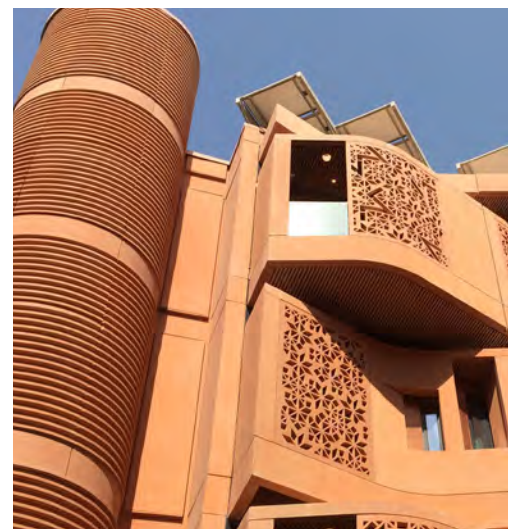
- Climate factors and building design
- Site environment and building design
- Structural measures in different climate zones
- Traditional climate-friendly construction methods

#### Energy efficiency policies and buildings standards

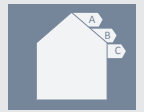
- Building codes and certificates
- Labelling and MEPS for energy performance of buildings
- Financial incentives for energy efficiency in buildings
- More than energy efficiency: certificates of sustainability

#### Benefits of "green" buildings

- Health and well-being
- Climate mitigation and adaptation; changes in the real estate markets
- Economic aspects of green buildings
- Case studies; Financial incentives for energy efficiency in buildings
- More than energy efficiency: certificates of sustainability



## Systematic approaches to energy saving



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

- Summarize the principles and scope of energy management systems
- Explain the principles and scope of energy audits
- Demonstrate the benefits that energy management systems and audits provide for companies to realise their energy saving potential
- Illustrate the barriers that exist towards energy management systems and audits

### Content

#### Energy management

- Introduction to energy management
- Instruments of energy management systems
- Benefits and barriers of EMS
- Implementation of EMS
- Learning from peers
- How POFs use energy management

#### Energy Audits

- Introduction to energy audits
- Scope of work for energy audits
- Working methodology of an energy auditor
- Best available techniques
- How to find the right auditor
- Usefulness of energy audit reports



## Financing energy efficiency projects and ESCOs



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

- Distinguish the nature of energy efficiency projects from conventional investments
- Organise an energy efficiency project assessment from the perspective of a bank
- Analyse different concepts of ESCOs as a new innovative business model in the energy sector
- Determine the special aspects of ESCO financing

### Content

#### Energy efficiency vs. conventional investment finance

- Energy flows and energy balance of buildings (heating, cooling)
- Selecting the right financing instrument
- Characteristics of energy efficiency project finance
- Attractiveness of energy efficiency project financing for POF
- Risks of energy efficiency finances

#### Appraisal of client/investor

- Energy efficiency assessment of the investor/client
- Questions to assess a client's energy management
- Financial incentives for energy efficiency in buildings
- More than energy efficiency: certificates of sustainability

#### Financial appraisal

- Estimated project costs
- Sources of finance
- Financial performance
- Financial viability parameters
- Static models
- Dynamic models
- Designing financial investment scenarios

#### Monitoring

- Monitoring tools
- Precautionary measures

#### Energy service companies

- Introduction to energy service companies
- Energy supply contracting
- Energy performance contracting
- Financing ESCO investments
- Advantages and barriers of ESCOs
- ESCOs in Asian countries

#### Appraisal of ESCO

- Special features of ESCOs
- Appraisal of an ESCO's business experience and conduct
- Appraisal of technical skills
- Financial appraisal of an ESCO
- Summary of ESCO appraisal

## Support mechanisms for energy efficiency projects



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

- Compare different barriers of energy efficiency deployment
- Identify the roles and competencies of political stakeholders in energy efficiency as well as the most common energy efficiency support mechanisms
- Analyse the benefits and drawbacks of the most common support mechanisms for energy efficiency projects
- Appraise the principle of bundling of different types of support mechanisms to achieve governmental goals

### Content

Necessity for energy efficiency policies

- Economic barriers
- Knowledge and cultural barriers
- Principal-agent barrier

Benefits of support mechanisms

- Benefits of support mechanisms for investors of energy efficiency projects
- Actors in international and national energy efficiency policymaking

Types of energy efficiency policy measures

- Regulation policy (e.g. Building codes, MEPS)
- Information policy (e.g. Labelling, awareness campaigns)
- Economic incentives (e.g. Subsidies, tax rebates)
- Voluntary agreements

Combining and assessment of different measures

- Bundling, assessment and comparison of different measures
- Assessment and comparison of policy measures





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