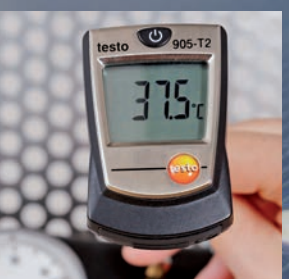
renac
renewables academy

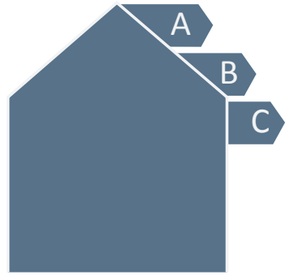
## Renewables Academy Online

# Applying Energy Efficiency

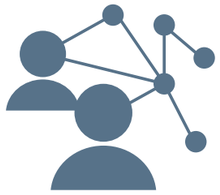
Renewables Academy Online

# Applying Energy Efficiency



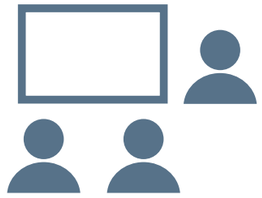
# Applying Energy Efficiency

## 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



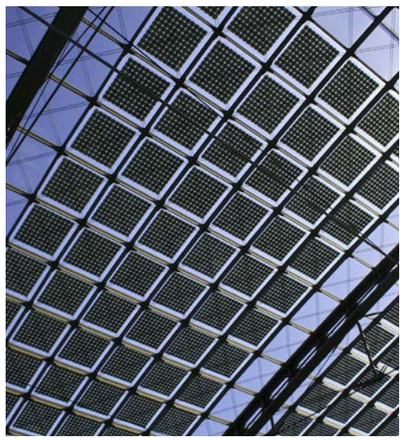
**RENAC Online offers extensive support & interactive learning:**

- Videos
- Graphics
- Exercises for self-evaluation
- Discussion forum
- Live lectures (webinars)

**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 Energy Efficiency” Online Training?

Applying Energy Efficiency provides a comprehensive overview of technical and economic aspects of energy efficiency measures. The online training presents support mechanisms for energy efficiency projects and points out saving potentials, in the industrial sector and in the built environment. Organisational aspects, such as energy management systems and energy audits, are also covered.

**This training suits you if you:**

- develop strategies for implementing energy efficiency projects
- want to assess the saving potential of cross-sectional technologies
- are planning to set up energy management systems and/or energy audits

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

- identify drivers and barriers for energy efficiency projects
- select appropriate energy efficiency technologies
- evaluate energy efficiency finance options
- propose energy management systems and energy audits

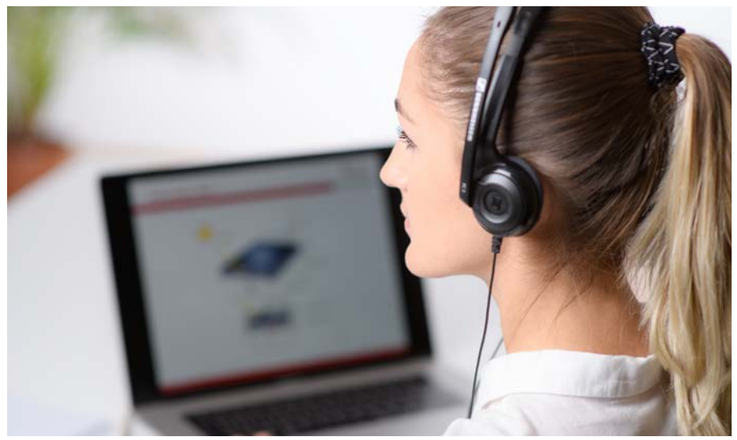
## The “Applying Energy Efficiency” online courses

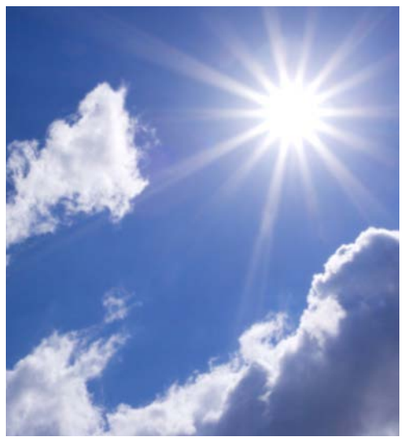
**Introductory courses**

Each participant 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.

**Courses**

- Introduction to energy efficiency projects
- Support mechanisms for energy efficiency projects
- Systematic approaches  to energy saving
- Energy efficiency in the industry - application
- Energy efficient buildings - application





# Applying Energy Efficiency

## Why choose RENAC Online?

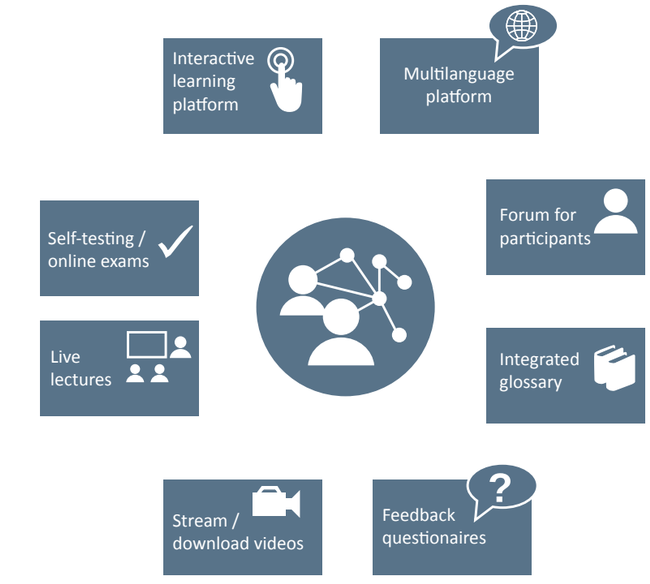
### Self-study material

**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.

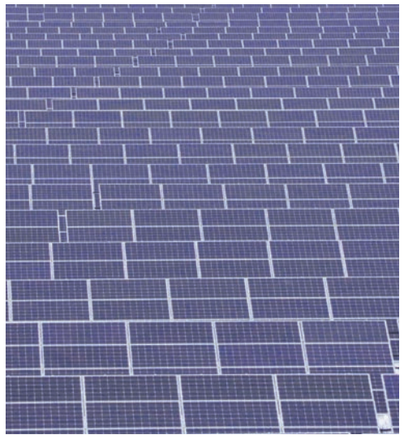
**3 Tests**
Many self-assessment tests within each course help participants to test their knowledge.

### Features




**Webinar in English**
Live lectures (webinars) for the whole class and exams are held in English language only.

**Webinar in Spanish (upon request):**
- Course texts and self-tests in Spanish
- Videos with Spanish subtitles
- Support by a Spanish-speaking tutor

### 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 Live lectures (webinars)**
Participants should attend the live lectures (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.


Renewables Academy Online

# Applying Energy Efficiency

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## 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
approx. 100 hours in total

**Duration:**

3 to 4 months for the entire training depending on previous knowledge and study habits.

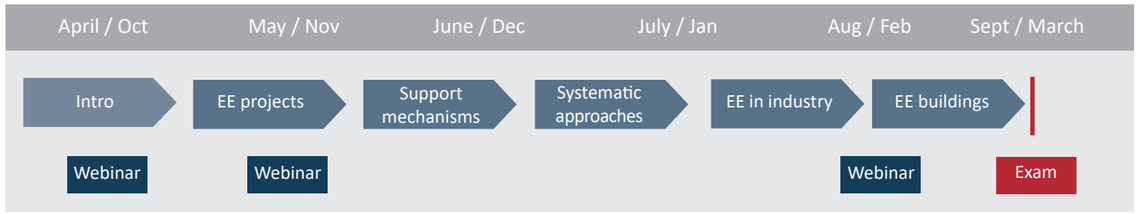
**Assignments:**

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 4, 5 or 6 months

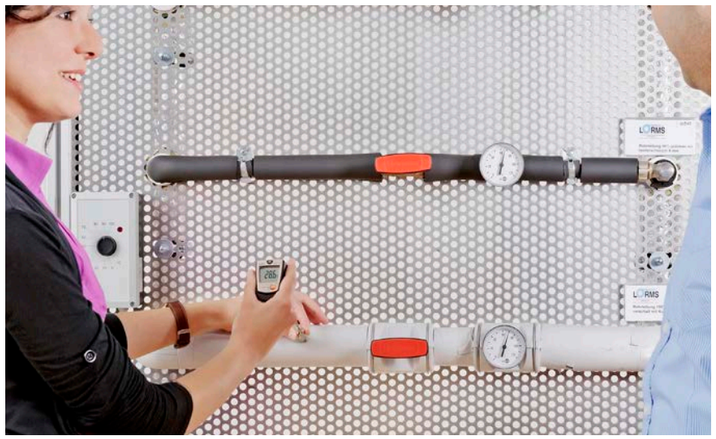
## Spring semester / fall semester




## Demo course and introduction

For a first impression of our online platform, have a look at our demo course:
www.renewables-online.de/blocks/demologin/logindemo.php?course=Demo

An introduction to the RENAC online platform:
https://www.youtube.com/watch?v=n_bjaFfxFog



## Registration and discounts

**Registration:**

You can register online:
www.renac.de/trainings-services/trainings/renac-online/

**Deadlines:**

Early bird deadline: 20 August / 20 February

Registration deadline: 31 March / 30 September

**Fee:**

760 Euro

**Discount:**

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

**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.

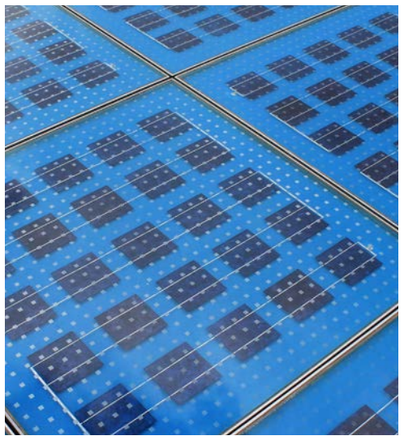
## Live lectures (webinar)

Three live lectures are part of the Applying Energy Efficiency online training. These live events are not mandatory, but participation is strongly recommended.

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

**Webinar 2**
**Technological aspects of energy efficiency**
May / Nov (1 hour)

**Webinar 3**
**Cross-sectional energy efficiency technologies**
Aug / Feb (1 hour)



## Learning objectives and content of the courses

### 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**

Introduction

Setting the scene - energy efficiency and the global experience

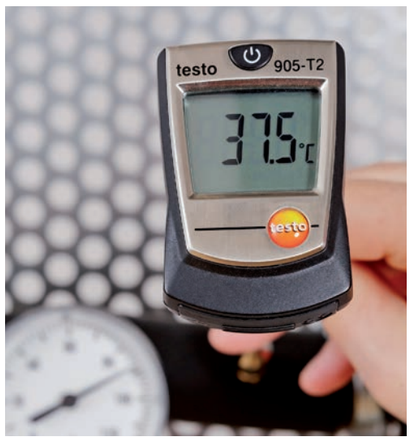
- International importance of energy efficiency
- Benefits of energy efficiency
- Stakeholders in energy efficiency

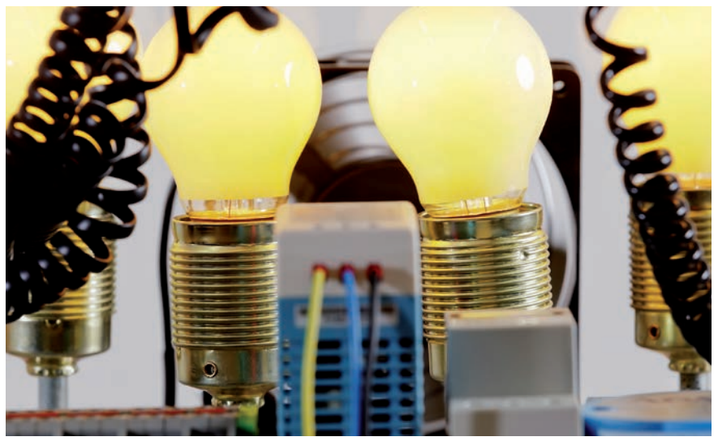
Definitions, standards and technical terms

- 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 providers of finance
- Special features of energy efficiency finance
- Barriers to energy efficiency finance
- Financing options





### 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**

Introduction

Necessity for energy efficiency policies

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

Benefits of support mechanisms

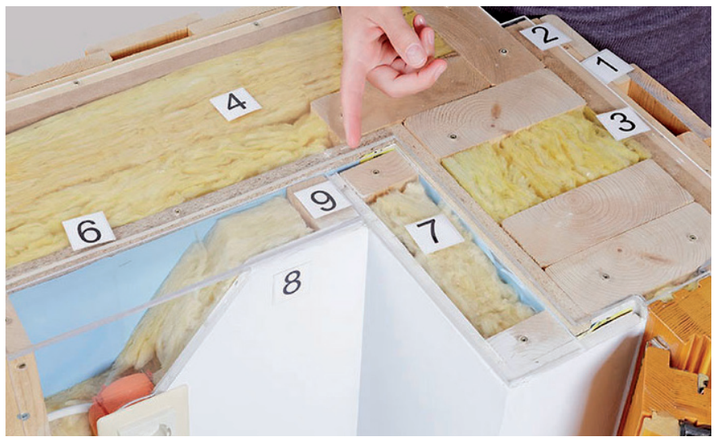
- Benefits of support mechanisms for investors of energy efficiency projects
- Responsible entities for energy efficiency policy making

Types of energy efficiency policy measures

- Regulation policy
- Information policy
- Economic incentives
- Principles of development and examples of voluntary agreements

Combining and assessment of different measures

- Bundling of different types of measures
- Assessment and comparison of policy measures




## 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 (EMS)
- 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

## Energy efficiency in industry – application

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

- Determine areas of application for cross-cutting technologies in industry
- Prepare technical measures to enhance energy efficiency with regard to the respective cross-cutting technology
- Classify the saving potential of the technical measures to enhance the 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
- Compressed air systems
- Ventilation: industrial areas of application
- Energy efficiency in ventilation systems
- Luminaires and their industrial areas of application
- Energy demand reduction strategies for lighting

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:**

- Value 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 energy consumption of buildings
- Illustrate benefits of energy efficiency in buildings
- Compare economics of green buildings with conventional type of building

**Content**

Energy consumption in residential buildings and buildings in the service sector

- Energy flows and energy balance
- Trends in final energy consumption
- Energy efficiency trends

Buildings in different climate zones

- Climate factors
- 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 building certificates
- Labelling and minimum energy performance standards (MEPS)
- Financial incentives for energy efficiency in buildings
- 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
- Business cases



## Contact

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## Impressum

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