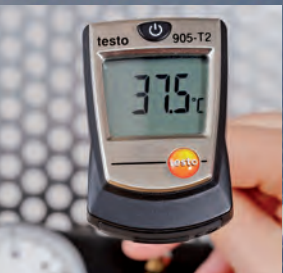


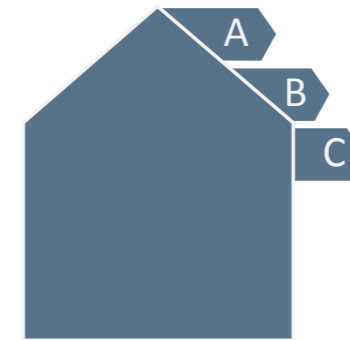
Renewables Academy Online

Applying Energy Efficiency

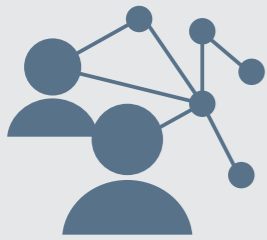


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Renewables Academy Online Applying Energy Efficiency

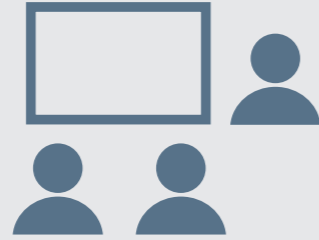


RENAC Online



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



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

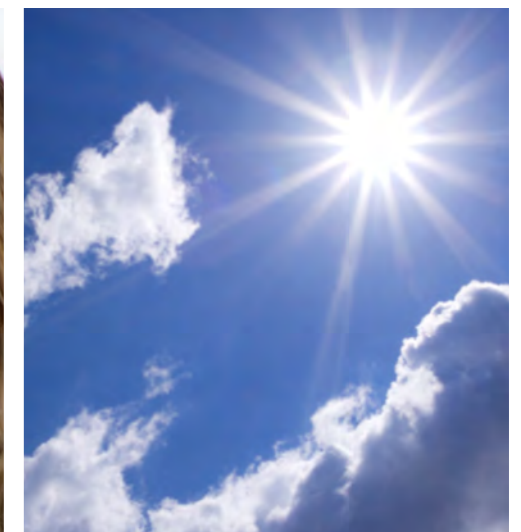
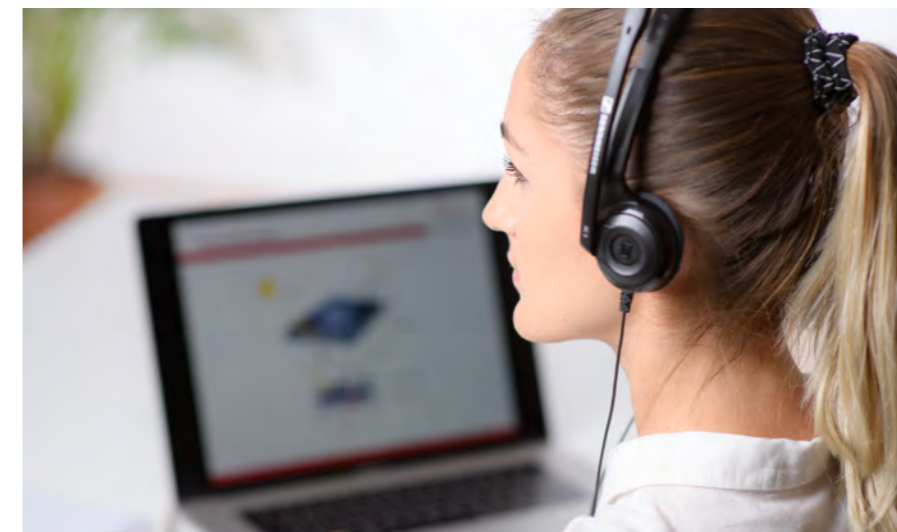
The “Applying Energy Efficiency” online courses

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



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

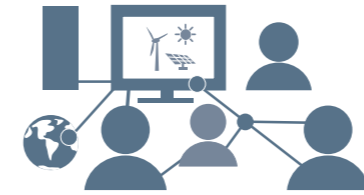
- 1 Forum**
Support and communication take place in a discussion forum. RENAC monitors the forum constantly. RENAC experts are ready to give assistance and discuss the course topics.
- 2 Assignment**
After studying each course, participants are asked to answer an assignment question. RENAC gives individual feedback for these assignments.
- 3 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.

Features

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

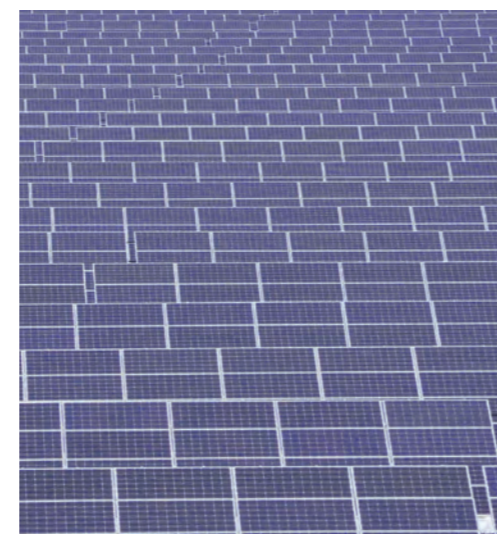
Webinar in Spanish (upon request):

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



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.



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

Registration and discounts

Registration:
 You can register online:
[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: 31 March / 30
 September

Fee:
 1190 Euro

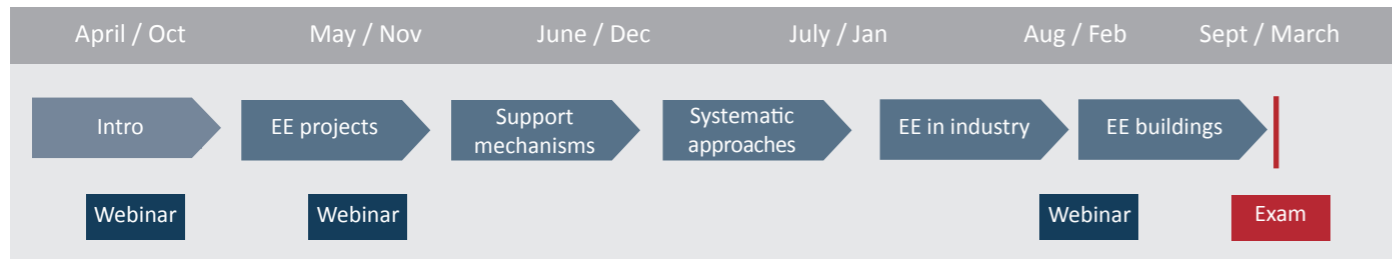
Discount:
 Early bird 10%; group (2 or more)
 5%; combination of both 15%;
 Alumni 10%

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 inter-
 net connection (at least 2 Mbit/s).
 For webinars, the AdobeConnect
 add-in or app should be installed,
 and a headset or speakers are requi-
 red to listen to the presentation.

Spring semester / fall semester



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.



Demo course and introduction

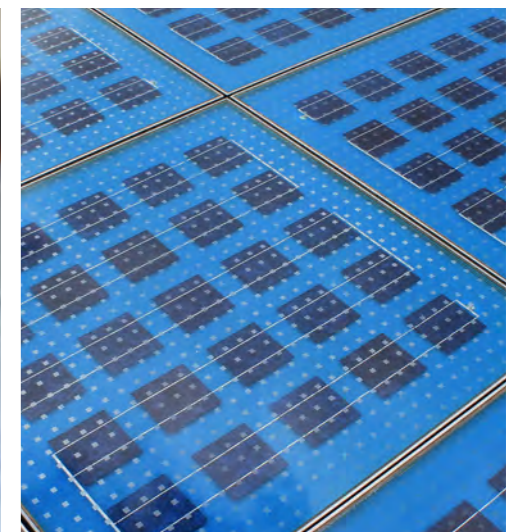
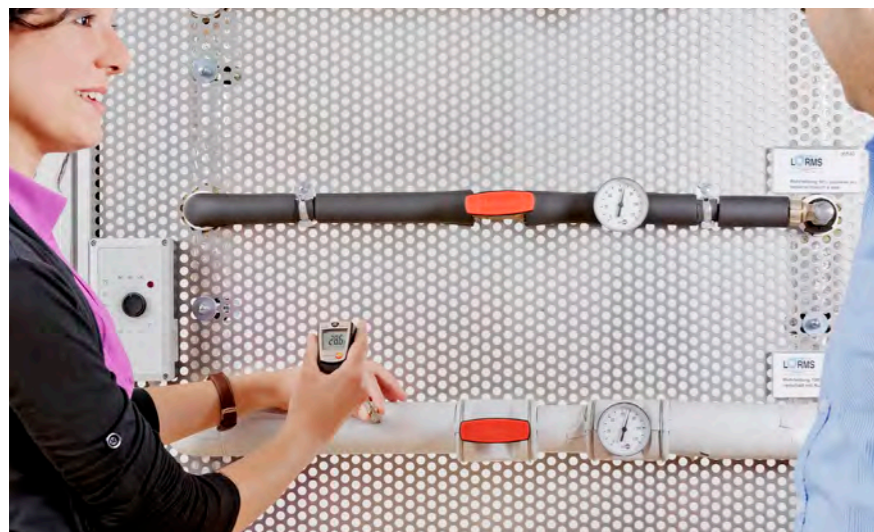
For a first impression of our online platform, have a look at our demo course:
www.renewables-online.de/blocks/demologin/logindemo.php?course=Demo
 An introduction to the RENAC online platform:
https://www.youtube.com/watch?v=n_bjaFfxFog



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

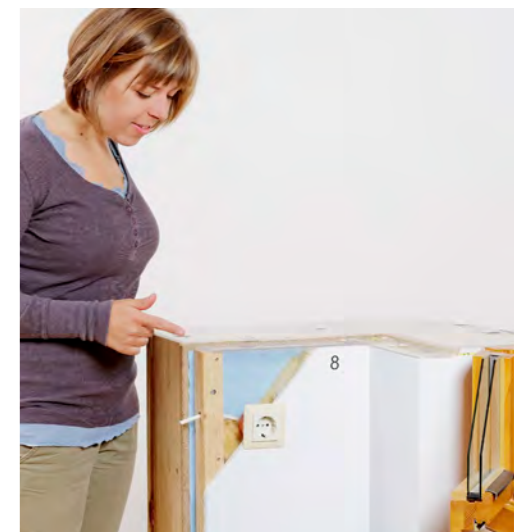
- Benefits of support mechanisms for investors of energy efficiency projects
- Responsible entities for energy efficiency policy making

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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www.renac.de/trainings-services/trainings/renac-online/