CapREG – Capacity Building on Renewable Energy and Grid Integration

Three-year scholarship programme on renewable energy and grid integration

Indonesia, the Philippines, Thailand, Vietnam, Mexico, Peru and Ecuador

The project is part of the German International Climate Initiative (IKI). The Federal Ministry for the Environment, Nature Conservation, Building and Nuclear Safety (BMUB) supports the initiative following a decision of the German Bundestag.

Supported by:

Federal Ministry for the
Environment, Nature Conservation,
Building and Nuclear Safety

based on a decision of the German Bundestag

1 General information about CapREG

1.1 What is the CapREG scholarship programme?

CapREG "Capacity Development on Renewable Energy and Grid Integration" is a capacity building programme within the German International Climate Initiative (IKI). IKI supports climate change protection projects and institutions that promote a climate-friendly economy. Within this framework the Renewables Academy AG (RENAC) has been commissioned by the German Federal Ministry for the Environment, Nature Conservation, Building and Nuclear Safety (BMUB) to provide a three-year capacity building programme for renewable energy and grid integration trainings.

The scholarship programme offers different kinds of trainings, networking and exchange of experiences for professionals from Indonesia, the Philippines, Thailand, Vietnam, Mexico, Peru and Ecuador.

The three-year programme provides comprehensive know-how on renewable energy technologies and assists in increasing their use. By creating suitable framework conditions for the development of renewable energy and by overcoming obstacles for the grid integration of renewable energy it will be possible to reduce greenhouse gas emissions, encourage the financing of renewables and contribute to energy security.

1.2 What does the CapREG scholarship programme offer?

CapREG offers the following activities:

- Trainings in partner countries
  28 trainings in partner countries from 2014 to 2016 (three to five days, 15 scholarships each)
- Internet-based trainings
  9 internet-based trainings (including text, videos, animations, questions for self-testing, virtual classrooms, online forum and final test) with up to 525 scholarships
- Trainings in Berlin
  7 trainings in Berlin in 2015 and 2016 (five days, 12 scholarships each)
- Mobile exhibition
  A mobile exhibition on grid integration of solar and wind with 15 information boards (A0 poster or 85 x 220 cm) for each partner country

Based on interviews and meetings in partner countries in the first half of 2014, RENAC has developed country-specific training programmes, adjusted to local particularities, needs and interests.

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Website:
http://www.renac.de/en/current-projects/capreg.html

Further information:

- IKI
  http://www.international-climate-initiative.com/en/
- BMUB
  http://www.bmub.bund.de/en/

1.3 Which topics does CapREG cover?

CapREG transfers knowledge on a wide range of issues, depending on the specific training needs of the respective partner country:

- Technologies for wind energy, photovoltaics, bioenergy, hydropower, concentrated solar power (CSP) and solar thermal
- Grid integration of large amounts of grid-connected wind and solar applications
- Stand-alone and hybrid systems
- Yield forecasts, costs, profitability, cash flow analysis, risk analysis, due diligence and financing
- Environmental, legal and social aspects
- Tendering, approval process, power purchase agreements and contracts
- Qualification requirements and development of capacity building structures

1.4 Target groups of the scholarship programme

Target groups for CapREG are professionals from the public and private sector in Indonesia, the Philippines, Thailand, Vietnam, Mexico, Peru and Ecuador:

- Ministries with responsibilities for energy supply / power networks
- Ministries with responsibility for international climate negotiations, climate policy and / or energy policy
- Subordinate authorities and regulators, regional or local administrations
- Energy generators, transmission and distribution system operators
- Financial sector
- Industry, trade associations, NGOs and
- The media

1.5 Why apply for a scholarship under the CapREG programme?

- Learn from senior experts in the field of renewable energy
- Learn more about technical and financial aspects of renewable energy technologies
- Learn more about methodologies to plan and run energy systems with large amounts of renewable energies
- Get specific information for professionals with management tasks and for professionals with operational / technical tasks
- Overcome barriers and hurdles to integrate renewable energy into your electricity system
- Be prepared to develop long-term, lasting strategies
- Be part of a growing international network of experts

1.6 What does the CapREG scholarship programme finance?

- Fees for seminars in partner countries: including materials, lunch, coffee / tea for the duration of the seminar

- Fees for seminars in Berlin: including materials, laboratories, field trips, lunch, coffee / tea, travel and health insurance for the duration of the seminar and an invitation letter for visa application
- Travel costs for seminars in Berlin: RENAC will reward up to 60% of costs against submission of receipts. That is 60% of a return economy-class flight between Indonesia, the Philippines, Thailand, Vietnam and Berlin (up to 660 Euro) and up to 60% of costs of a return economy-class flight between Mexico, Peru, Ecuador and Berlin (up to 780 Euro). RENAC will provide up to 60% of hotel costs in Berlin (up to 6 nights, up to 45 Euro per night). The participants shall cover at least 40% of ticket and hotel costs
  Example: RENAC will reimburse 24 Euro/night if the hotel costs 40 Euro/night, 45 Euro/night if the hotel costs 75 Euro/night and 45 Euro if the hotel costs 100 Euro/night
- Fees for internet-based trainings: including access to text and videos, animations, questions for self-testing, virtual classrooms, online forum, final test and RENAC certificate

1.7 How do I register?

Interested participants have to apply online via RENAC's website and accept the terms of reference for the scholarship.

For information about application deadlines please see attachment A-3 "Overview – Seminar dates and application deadlines" or visit our website: http://www.renac.de/en/current-projects/capreg.html

RENAC will choose participants according to the information provided in the application form, e.g. ensure that the participants are part of the target group. Participants accepted for a training will receive a confirmation email from RENAC.

1.8 Where do I find the online application?

The online application for the CapREG trainings can be found here:

- Application for trainings in partner countries: http://www.renac.de/en/current-projects/capreg/capreg-application-in-partner-countries.html
- Application for internet-based trainings: http://www.renac.de/en/current-projects/capreg/capreg-application-internet-based-trainings.html
- Application for trainings in Berlin: http://www.renac.de/en/current-projects/capreg/capreg-application-berlin.html

1.9 Where do I find the terms of reference?

The terms of reference are attached to this document or can be downloaded from RENAC's website

- in English: http://www.renac.de/en/current-projects/capreg/capreg-application/terms-of-references-english.html
- in Spanish: http://www.renac.de/en/current-projects/capreg/capreg-application/terms-of-references-spanish.html

1.10 Information on Berlin

You can find some information on the wide variety of Berlin's cultural attractions at the following websites:

Berlin Tourist Information: www.visitberlin.de or Berlin's English Magazine: www.exberliner.com.

1.11 Visa for Germany

Participants of the seminars in Berlin have to apply for a VISA to Germany themselves. RENAC will send an invitation letter as a pdf via email to confirmed participants in due time before the seminar starts.

2 Trainings in partner countries

2.1 General information about trainings in partner countries

Within CapREG, RENAC will arrange four face-to-face trainings (one 5-day and three 3-day seminars) in each partner country (Indonesia, the Philippines, Thailand, Vietnam, Mexico, Peru and Ecuador):

- Each seminar is designed for up to 15 participants
- Participation in the seminar is free of charge and includes materials (colour printed hard copies), coffee / tea breaks and lunch for the duration of the seminar
- Course materials are provided in English
- Lecturers will present in English; simultaneous translation will be provided (according to country-specific needs)
- The location for the seminar will be in the partner country; participants will be informed in due time about the details of the venue for the seminar

2.2 Application requirements

- Interested participants have to register on RENAC's website and accept the terms of reference for the scholarship (see 1.7)
- For application deadlines please see attachment A-3 "Overview – Seminar dates and application deadlines" or visit our website: http://www.renac.de/en/current-projects/capreg.html
- Participants should be willing to attend the whole seminar, find solutions through group work, present results and discuss solutions
- Good English proficiency is an advantage
- Some seminars have specific requirements on the educational background of participants (see attachment A-1 "Trainings in partner countries – Seminar description")

For further information, please visit RENAC's website: http://www.renac.de/en/current-projects/capreg.html.

2.3 Overview of trainings in partner countries

Based on a capacity needs assessment which was conducted by RENAC in the first half of 2014 in each partner country, the seminars will focus on specific renewable energy technologies, depending on the respective country.

Exercises and case studies will be adjusted to the particularities of each partner country. For more details about the content of the trainings, please see attachment A-1 "Trainings in partner countries – Seminar description" or visit our website: http://www.renac.de/en/current-projects/capreg.html.

The tables below give an overview of the planned trainings in the seven partner countries (Indonesia, the Philippines, Thailand, Vietnam, Mexico, Peru and Ecuador):

Trainings in Indonesia:

Date	Topic	Country	Duration	No.
01.12. – 05.12.14	**Fundamentals of Renewable Energy**	Indonesia	5	P5-IDN-Fundamental
04.11. – 06.11.15	**Management aspects of Renewable Energy Grid Integration**	Indonesia	3	P3-IDN-ManGrid
09.11. – 11.11.15	**Bankability of Renewable Energy projects**	Indonesia	3	P3-IDN-Bank
17.02. – 19.02.16	**Project planning of grid-connected PV**	Indonesia	3	P3-IDN-PPlanPV

Trainings in the Philippines:

Date	Topic	Country	Duration	No.
01.12. – 05.12.14	**Fundamentals of Renewable Energy**	Philippines	5	P5-PHL-Fundamental
27.04. – 29.04.15	**Planning of PV-Hybrid-power stations**	Philippines	3	P3-PHL-PPlanHybridPV
30.05. – 01.06.16	**Management aspects of Renewable Energy Grid Integration**	Philippines	3	P3-PHL-ManGrid
12.10. – 14.10.16	**Bankability of Renewable Energy projects**	Philippines	3	P3-PHL-Bank

Trainings in Thailand:

Date	Topic	Country	Duration	No.
24.11. – 28.11.14	**Fundamentals of Renewable Energy**	Thailand	5	P5-THA-Fundamental
04.03. – 06.03.15	**Management aspects of Renewable Energy Grid Integration**	Thailand	3	P3-THA-ManGrid
09.03. – 11.03.15	**Technical aspects of Renewable Energy Grid Integration**	Thailand	3	P3-THA-TecGrid
22.02. – 24.02.16	**Bankability of Renewable Energy projects**	Thailand	3	P3-THA-Bank

Trainings in Vietnam:

Date	Topic	Country	Duration	No.
08.12. – 12.12.14	**Fundamentals of Renewable Energy**	Vietnam	5	P5-VNM-Fundamental
22.04. – 24.04.15	**Project planning of large grid-connected PV**	Vietnam	3	P3-VNM-PPlanPV
25.05. – 27.05.16	**Management aspects of Renewable Energy Grid Integration**	Vietnam	3	P3-VNM-ManGrid
17.10. – 19.10.16	**Bankability of Renewable Energy projects**	Vietnam	3	P3-VNM-Bank

Trainings in Mexico:

Date	Topic	Country	Duration	No.
02..03. – 06.03.15	**Project design for large-scale solar thermal systems (water heating)**	Mexico	5	P5-MEX-PPlanST
02.12. – 04.12.15	**Management aspects of Renewable Energy Grid Integration**	Mexico	3	P3-MEX-ManGrid
07.12. – 09.12.15	**Technical aspects of Renewable Energy Grid Integration**	Mexico	3	P3-MEX-TecGrid
13.06. – 15.06.16	**Planning of large grid-connected PV**	Mexico	3	P3-MEX-PPlanPV

Trainings in Peru:

Date	Topic	Country	Duration	No.
26.01. – 30.01.15	**Fundamentals of Renewable Energy**	Peru	5	P5-PER-Fundamental
15.06. – 17.06.15	**Management aspects of Renewable Energy Grid Integration**	Peru	3	P3-PER-ManGrid
06.04. – 08.04.16	**Planning of large grid-connected PV**	Peru	3	P3-PER-PPlanPV
11.04. – 13.04.16	**Bankability of Renewable Energy projects**	Peru	3	P3-PER-Bank

Trainings in Ecuador:

Date	Topic	Country	Duration	No.
02.02. – 06.02.15	**Fundamentals of Renewable Energy**	Ecuador	5	P5-ECU-Fundamental
03.06. – 05.06.15	**Management aspects of Renewable Energy Grid Integration**	Ecuador	3	P3-ECU-ManGrid
08.06. – 10.06.15	**Technical aspects of Renewable Energy Grid Integration**	Ecuador	3	P3-ECU-TecGrid
08.06. – 10.06.16	**Planning of large grid-connected PV**	Ecuador	3	P3-ECU-PPlanPV

2.4 How do I register for trainings in partner countries?

Interested participants have to apply online: http://www.renac.de/en/current-projects/capreg/capreg-application-in-partner-countries.html and accept the terms of reference for the scholarship.

For information about application deadlines please see attachment A-3 “Overview – Seminar dates and application deadlines” or visit our website: http://www.renac.de/en/current-projects/capreg.html

RENAC will choose participants according to the information provided in the application form, e.g. ensure that the participants are part of the target group. Participants accepted for a training will receive a confirmation email from RENAC.

3 Internet-based trainings

3.1 General information about online courses

Within CapREG, RENAC will offer comprehensive online training:

- From 2015 to 2016, RENAC will provide 9 online courses with up to 525 scholarships for participants from Indonesia, the Philippines, Thailand, Vietnam, Mexico, Peru and Ecuador
- The online courses will cover a wide range of important topics related to renewable energy
- Each online course will last 8 weeks; participants will need 25 to 50 hours to work through the material (reading, watching online lectures, self-evaluation and preparation for the final exam)
- Participation in the online courses is free of charge and includes access to text and videos, questions for self-study, virtual classrooms, forum, final test and certificate
- Participants can print out a personalised copy of the course materials in the form of PDF documents for personal use
- Course materials are provided in English and Spanish
- Lecturers in virtual classrooms will present in English
- At the end of the training, participants can take an exam and receive a RENAC certificate if the training is completed successfully

RENAC staff and lecturers will offer extensive support throughout the learning process via email.

RENAC has many years of experience in distance learning via the Internet. This training format has been increasing in popularity because it allows participants to decide when, where and how they prefer to learn.

The comprehensive online training programme ensures that knowledge on fundamental aspects of renewable energy is transferred to a broader audience in the seven partner countries.

3.2 Application requirements

- Interested participants have to register on RENAC's website and accept the terms of reference for the scholarship (see 1.7)
- For application deadlines, please see attachment A-3 "Overview – Seminar dates and application deadlines" or visit our website: http://www.renac.de/en/current-projects/capreg.html
- Participants should be willing to attend the whole seminar, find solutions through group work, present results and discuss solutions
- Good English proficiency is an advantage
- For the online courses a stable Internet connection is necessary
- Some seminars have specific requirements on the educational background of participants (see attachment A-2 "Internet-based trainings – Course description")

For further information, please visit RENAC's website: http://www.renac.de/en/current-projects/capreg.html.

3.3 Overview of online courses

The table below gives an overview of the dates and topics of the nine online courses within CapREG. For more details about the content of the courses, please check the seminar description at the end of this document or visit our website: http://www.renac.de/en/current-projects/capreg.html.

A course will last 8 weeks. During the first 6 weeks, participants work through the self-learning material (text, videos and exercises). The exams will take place in the 7th and 8th week (resit).

Internet-based trainings				
Start Date	**Topic**	**Location**	**Duration**	**No.**
12.01.15	**On1 – Fundamentals, Fundamentals of PV, Wind, Biogas and Mini Grids**	Online	8 weeks	On1-Fundamentals
16.03.15	**On2-PlanGrid, Wind and PV Grid Integration**	Online	8 weeks	On2-PlanGrid
25.05.15	**On3-Support, Support mechanisms for Renewable Energy**	Online	8 weeks	On3-Support
24.08.15	**On4-Bank, Bankability of Wind and PV projects**	Online	8 weeks	On4-Bank
26.10.15	**On5-PPlanPV, Planning of large-scale grid-connected PV**	Online	8 weeks	On5-PPlanPV
18.01.16	**On6-PPlanHybrid, Planning of PV-Hybrid-power stations ("Fuelsaver")**	Online	8 weeks	On6-PPlanHybrid
21.03.16	**On7-PPlanBioGas, Planning for medium-sized biogas plants**	Online	8 weeks	On7-PPlanBioGas
23.05.16	**On8-PPlanST, Planning for large-scale solar thermal projects for water heating**	Online	8 weeks	On8-PPlanST
29.08.16	**On9-ClimateFin, Climate Finance**	Online	8 weeks	On9-ClimateFin

3.4 How do I register for the online courses?

Interested participants have to apply online: http://www.renac.de/en/current-projects/capreg/capreg-application-internet-based-trainings.html and accept the terms of reference for the scholarship.

For information about application deadlines please see attachment A-3 "Overview – Seminar dates and application deadlines" or visit our website: http://www.renac.de/en/current-projects/capreg.html

RENAC will choose participants according to the information provided in the application form, e.g. ensure that the participants are part of the target group. Participants accepted for a training will receive a confirmation email from RENAC.

4 Seminars in Berlin

4.1 General information about trainings in Berlin

Within CapREG, RENAC will provide seven trainings in Berlin. The objective of these seminars is:

- To transfer knowledge on important issues related to renewable energy and grid integration of renewables
- To give participants an in-depth view of the German energy transition (experiences, challenges)
- To offer professionals from Indonesia, the Philippines, Thailand, Vietnam, Mexico, Peru and Ecuador the opportunity of international networking and exchange of experiences

All this will be reached through a blend of up-to-date theoretical lectures, state-of-the-art practical exercises and field excursions where participants will have the chance to gain first-hand experiences while learning about how different renewable energy technologies are used and talking with plant operators.

- The seminars in Berlin are designed for up to 12 participants (from all seven partner countries)
- Course materials are provided in English
- Lecturers will present in English
- Seminar fees: participation in the seminar is free of charge and includes materials (colour printed hard copies), laboratories, lunch, coffee / tea breaks, field trips, travel and health insurance for the duration of the seminar and an invitation letter for visa application
- Travel costs: RENAC will provide up to 60% of costs against submission of receipts. That is 60% of a return economy-class flight between Indonesia, the Philippines, Thailand, Vietnam and Berlin (up to 660 Euro) and up to 60% of costs of a return economy-class flight between Mexico, Peru, Ecuador and Berlin (up to 780 Euro). RENAC will reward up to 60% of hotel costs in Berlin (up to 6 nights, up to 45 Euro/night). The participants will cover at least 40% of ticket and hotel costs.
  Example: RENAC will reimburse 24 Euro/night if the hotel costs 40 Euro/night, 45 Euro/night if the hotel costs 75 Euro/night and 45 Euro if the hotel costs 100 Euro/night
- The location for the seminar will be RENAC's Training Centre in the city of Berlin, Germany. Further details will be published in due time on RENAC's website.

4.2 Application requirements

- Interested participants have to register on RENAC's website and accept the terms of reference for the scholarship (see 1.7)

IMPORTANT: For VISA application, candidates applying for a seminar in Berlin must make sure that all required information is entered in the application form

- For application deadlines please see attachment A-3 "Overview – Seminar dates and application deadlines" or visit our website: http://www.renac.de/en/current-projects/capreg.html
- Participants should be willing to attend the whole seminar, find solutions through group work, present results and discuss solutions
- Good English proficiency is necessary

Further important information:

- Participants have to organise and book their travel to/from Berlin and the hotel in Berlin as well as other travel arrangements themselves. RENAC will provide information about hotels situated near the Renewables Academy AG in Berlin.
- Participants must apply for a VISA to Germany themselves. RENAC will send an invitation letter as a pdf via email to confirmed participants in due time before the seminar starts.

For further information, please visit RENAC's website: http://www.renac.de/en/current-projects/capreg.html.

4.3 Overview of trainings in Berlin

In the following table interested participants can find the dates for the seven trainings in Berlin in 2015 and 2016. Details regarding the content of the seminars will be published on RENAC's website in due time:

Date	Topic	Country	Duration	No.
18.05. – 22.05.15	**Renewable Energy (RE) and Grid Integration / Energy transition**	Berlin, Germany	5	P1-Berlin
06.07. – 10.07.15	**RE and Grid Integration / Energy transition**	Berlin, Germany	5	P2-Berlin
28.09. – 02.10.15	**RE and Grid Integration / Energy transition**	Berlin, Germany	5	P3-Berlin
19.10. – 23.10.15	**RE and Grid Integration / Energy transition**	Berlin, Germany	5	P4-Berlin
09.05. – 13.05.16	**RE and Grid Integration / Energy transition**	Berlin, Germany	5	P5-Berlin
11.07. – 15.07.16	**RE and Grid Integration / Energy transition**	Berlin, Germany	5	P6-Berlin
19.09. – 23.09.16	**RE and Grid Integration / Energy transition**	Berlin, Germany	5	P7-Berlin

4.4 How do I register for trainings in Berlin?

Interested participants have to apply online: http://www.renac.de/en/current-projects/capreg/capreg-application-berlin.html and accept the terms of reference for the scholarship. **IMPORTANT:** For VISA application, candidates applying for a seminar in Berlin must make sure that all required information is entered in the application form.

For information about application deadlines please see attachment A-3 "Overview – Seminar dates and application deadlines" or visit our website: http://www.renac.de/en/current-projects/capreg.html

RENAC will choose participants according to the information provided in the application form, e.g. ensure that the participants are part of the target group. Participants accepted for a training will receive a confirmation email from RENAC.

5 Mobile exhibition

5.1 What is the mobile exhibition on grid integration of solar and wind?

The mobile exhibition explains how electricity grids work and how solar and wind power will change management of the power grids to ensure that large amounts of wind and solar energy can safely contribute to the energy supply. The exhibition explores solutions such as flexible conventional power stations, storage, balancing power, new methods for short term power forecasts, grid planning, as well as grid codes.

The banners are formulated to be understood by a broad audience with no or little technical background. Very complicated concepts are simplified as far as possible and reduced to their essential principles to make it easier to understand.

5.2 Rent the mobile exhibition

- The mobile exhibition consists of 15 information banners (85 cm x 220 cm) / A0-posters
- Institutions willing to host the exhibition in the respective partner country will be responsible for choosing suitable events to show the exhibition (including guided tours)
- The boards will be available in English and/or – depending on the hosting institution - in the language of the respective partner country
- The loaning is free of charge and the host institution will own the exhibition after the end of the project (after having shown the exhibition at a minimum of three suitable events)

5.3 How do I rent the mobile exhibition?

For the exhibition documentation the recipient person / institution is expected to take at least 6 distinctive photographs (giving an impression of the exhibition and showing the state of the banners). RENAC will be authorised to use these photos for its work and representation. The recipient person / institution is responsible for collecting the exhibition and bringing it back to our local cooperating / host partner. Once the exhibition is handed over, the recipient person / institution is responsible for proper handling of the exhibition and returning it in an undamaged and tidy condition to our host partner.

5.4 Contact

For further information about the exhibition please contact: Ms. Cecilia Strandberg, E-Mail: capreg(at)renac.de.

5.5 Local partner

The address of local partner will be published on RENAC's website.

ATTACHMENTS

A-1 Trainings in partner countries – Seminar descriptions

1. Fundamentals of Renewable Energy, 5 days

Introduction

The five-day seminar "Fundamentals of Renewable Energy" will give an overview of commercially viable renewable energy technologies.

Technologies will be explained by experts in the field, giving the participants important technical information on how the energy of the sun, wind and organic matter is converted, harnessed, transmitted and managed. Furthermore, participants will gain an in-depth understanding of the economic potential, the social and ecological benefits of renewable energy.

The five-day seminar is perfect for those who want to gain profound knowledge of renewable energies and a better understanding of relevant aspects related to specific technologies.

Content and country-specific technology focus

The five-day seminar starts with a short general overview of commercially viable renewable energy technologies photovoltaics, wind, small hydro, biogas, CSP, solar thermal and solar cooling. Participants will obtain a general understanding of topics such as the peculiarities of an energy supply system with distributed energy generation, the positive external effects of renewable energy (social, ecological and economic) and the methodology for calculating Grid Parity and Fuel Parity.

The main focus of the seminar will be on specific renewable energy technologies:

Experienced experts in the respective field will explain in detail their technical functionality, their economic viability as well as the possibilities and boundaries of their applications. The course will cover topics such as: components, application and market development, quality, standards and certification, resource assessment, renewables potential methodology, calculation of annual energy generation, investment and operating costs, expected future development of costs and costs of energy and profitability and, finally, project planning and development, implementation and management.

It will focus on specific technologies that might differ from country to country according to a needs assessment that RENAC has performed:

- Indonesia: photovoltaic (small- to medium-sized grid-connected PV-systems, PV-rooftop-systems, PV-hybrid systems), biogas (waste-to-energy)
- Vietnam: photovoltaic (large grid-connected PV-systems, PV-rooftop-systems), wind
- Thailand: photovoltaic (large grid-connected PV-systems, PV-rooftop-systems, PV-hybrid-systems), biogas (waste-to-energy)
- Philippines: photovoltaic (large grid-connected PV-systems, PV-rooftop-systems, PV-hybrid-systems), wind
- Ecuador: photovoltaic (large grid-connected PV-systems, PV-rooftop-systems), wind and biogas (waste-to-energy)
- Peru: photovoltaic (large grid-connected PV-systems, PV-rooftop-systems, PV-hybrid-systems), wind and small hydro

Target groups

The five-day seminar on "Fundamentals of Renewable Energy" is targeted at professionals from the public and private sector with political responsibility and management skills, working in the energy field and who are interested in acquiring basic knowledge on renewable energy technologies. These professionals may come from the following backgrounds:

- Lawyers
- Economists
- Scientists
- Political scientists

Objectives

At the end of the seminar:

- Participants will be familiar with commercially viable renewable energy technologies
- Participants will have a fundamental understanding of the peculiarities of the energy supply system with distributed energy generation and/or with fluctuating renewable energies
- Participants will have a broader knowledge of specific renewable technologies, their technical functionality, their economic viability as well as the possibilities and boundaries of their applications
- Participants will extend their knowledge on project planning and development of renewable energy projects, implementation and management

Language

- Course materials are provided in English; participants will receive colour printed hard copies (no files)
- Lecturers will present in English; simultaneous translation will be provided (according to country specific needs)

Location

The location for the seminar will be in the partner country. Details of the venue for the seminar will be published in due time on RENAC's website.

Duration and number of participants

The seminar lasts 5 days and is designed for up to 15 participants.

Requirements for participants

- Interested participants have to register on RENAC's website and accept the terms of reference for the scholarship (see 1.7)
- For application deadlines please see attachment A-3 "Overview – Seminar dates and application deadlines" or visit our website: http://www.renac.de/en/current-projects/capreg.html
- Participants should be willing to attend the whole seminar, find solutions through group work, present results and discuss solutions
- Good English proficiency is an advantage

Seminar dates

Seminar "Fundamentals of Renewable Energy", 5 days			
Date	**Country**	**Language**	**No.**
24.11. – 28.11.14	Thailand	English	P5-THA-Fundamentals
01.12. – 05.12.14	Indonesia	English	P5-IDN-Fundamentals
01.12. – 05.12.14	Philippines	English	P5-PHL-Fundamentals
08.12. – 12.12.14	Vietnam	English	P5-VNM-Fundamentals
26.01. – 30.01.15	Peru	English	P5-PER-Fundamentals
02.02. – 06.02.15	Ecuador	English	P5-ECU-Fundamentals

Note: RENAC might adapt the seminar plan according to country-specific needs and /or participants' requirements.

2. Bankability of Renewable Energy projects, 3 days

Introduction

The three-day seminar "Bankability of Renewable Energy projects" offers its participants the opportunity to learn about renewable energy projects from a financial and commercial point of view.

Content and country specific focus

The main focus of the three-day seminar will be on economic and financial aspects, especially standards for bankable projects and adequate business plan preparation.

Experienced experts in the respective field will explain in detail economic and financial aspects of specific technologies, giving the participants an understanding of the expected global market development for the respective technologies, costs and revenues. Furthermore, participants will learn in detail how to assess renewable resources, how to calculate the annual energy output as basis for project financing and understand which aspects are critical when it comes to adequately assessing the risks related to such renewable energy projects.

It will focus on specific technologies that might differ from country to country according to a needs assessment that RENAC has performed:

- Indonesia: photovoltaic, biogas/biomass
- Vietnam: photovoltaic, wind
- Thailand: photovoltaic, biogas
- Philippines: photovoltaic, wind
- Peru: photovoltaic, wind

Target groups

The three-day seminar on "Bankability of Renewable Energy projects" is targeted at professionals from the public and private sector working in the field of energy and who are interested in acquiring economic and financial knowledge for planning and executing bankable renewable energy projects. These professionals may come from the following backgrounds:

- Ministries
- Regulators
- Project developers

Objectives

At the end of the seminar:

- Participants will be familiar with the economic and financial aspects of renewable energy projects
- Participants will be able to understand the critical aspects of bankable renewable energy projects
- Participants will have a broader understanding of risks related to such projects and how to evaluate, mitigate and avoid these risks
- Participants will be able to calculate costs and revenues of such projects

Language

- Course materials are provided in English; participants will receive colour printed hard copies (no files)
- Lecturers will present in English; simultaneous translation will be provided (according to country specific needs)

Location

The location for the seminar will be in the partner country. Details of the venue for the seminar will be published in due time on RENAC's website.

Duration and number of participants

The seminar lasts 3 days and is designed for up to 15 participants.

Requirements for participants

- Knowledge of renewable energy technology (attendance of basic seminar P1 / On1 or availability of comparable know-how)
- Interested participants have to register on RENAC's website and accept the terms of reference for the scholarship (see 1.7)
- For application deadlines please see attachment A-3 "Overview – Seminar dates and application deadlines" or visit our website: http://www.renac.de/en/current-projects/capreg.html
- Participants should be willing to attend the whole seminar, find solutions through group work, present results and discuss solutions
- Good English proficiency is an advantage

Seminar dates

Seminar "Bankability of Renewable Energy projects", 3 days			
Date	**Country**	**Language**	**No.**
09.11. – 11.11.15	Indonesia	English	P3-IDN-Bank
22.02. – 24.02.16	Thailand	English	P3-THA-Bank
11.04. – 13.04.16	Peru	English	P3-PER-Bank
12.10. – 14.10.16	Philippines	English	P3-PHL-Bank
17.10. – 19.10.16	Vietnam	English	P3-VNM-Bank

Note: RENAC might adapt the seminar plan according to country-specific needs and /or participants' requirements.

3. Management aspects of Renewable Energy Grid Integration, 3 days

Introduction

The three-day seminar "Management aspects of Renewable Energy Grid Integration" offers its participants the opportunity to learn about the management of energy systems with large amounts of solar and wind connected to the grid.

The subjects in the seminar will be explained by experts in the field, giving the participants a broad understanding of the important aspects when it comes to integrating large amounts of fluctuating renewable energies into the electricity grid. During the seminar, participants will learn how to calculate the residual load curve and how to make short term forecasts of wind and solar resources for the planning and operation of the electricity grid and power plant dispatch. Furthermore, the seminar will cover topics such as the management of grid congestion, regulatory and economic framework, the methodology of calculating the annual wind and PV feed in time series, capacity planning, firm capacity and balancing power. The theoretical part of the seminar will be combined with case studies which will increase the chances of a better understanding of all the subjects within the course.

The seminar is recommended for those who want to gain specific knowledge and skills on management aspects related to the management of electricity systems with large amounts of photovoltaic and wind energy connected to the grid.

Content

The main focus of the three-day seminar will be on the management aspects of electricity supply systems with large amounts of fluctuating renewable energy resources integrated into the grid.

The seminar starts with a calculation of residual load curves, the annual wind and PV feed in time series, and short-term forecasting of wind and solar resources for the planning of electricity grid operation and power plant dispatch, followed by capacity planning and methodology for calculating firm capacity, balancing power, the management of grid congestion, regulatory and economic framework. Finally, all the previous subjects will be reinforced by case studies which will increase the comprehensibility of all the subjects in the seminar.

It will focus on specific technologies that might differ from country to country according to a needs assessment that RENAC has performed:

- Indonesia: photovoltaic
- Vietnam: photovoltaic, wind
- Thailand: photovoltaic
- Philippines: photovoltaic, wind
- Peru: photovoltaic, wind
- Ecuador: photovoltaic, wind
- Mexico: photovoltaic, wind

Target groups

The three-day seminar on "Management of Wind and PV Grid Integration" is targeted at professionals from the public and private sector working in the field of energy and who are interested in acquiring management knowledge regarding energy systems with large amounts of alternating renewable energy resources. These professionals may come from the following backgrounds:

- Regulators and political decision makers
- Persons with management skills and tasks in planning energy systems
- Persons with management skills and tasks in the operation of electricity grids

Objectives and seminar plan

At the end of the seminar:

- Participants will be familiar with energy systems containing large amounts of solar and wind and understand the necessary regulatory and economic framework
- Participants will have a broader understanding of managing aspects of such energy systems and how to plan the electricity grid operation and power plant dispatch
- Participants will be able to use different methodologies to perform short-term forecasts for wind and PV, to calculate the annual wind and PV feed in time series and the balancing power
- Participants will be able to conduct capacity planning and calculate firm capacity
- Participants will obtain broader knowledge of the management of grid congestion

Language

- Course materials are provided in English; participants will receive colour printed hard copies (no files)
- Lecturers will present in English; simultaneous translation will be provided (according to country specific needs)

Location

The location for the seminar will be in the partner country. Details of the venue for the seminar will be published in due time on RENAC's website.

Duration and number of participants

The seminar lasts 3 days and is designed for up to 15 participants.

Requirements for participants

- Knowledge of renewable energy technology (attendance of basic seminar P1 / On1 or availability of comparable know-how)
- Interested participants have to register on RENAC's website and accept the terms of reference for the scholarship (see 1.7)
- For application deadlines please see attachment A-3 "Overview – Seminar dates and application deadlines" or visit our website: http://www.renac.de/en/current-projects/capreg.html
- Participants should be willing to attend the whole seminar, find solutions through group work, present results and discuss solutions
- Good English proficiency is an advantage

Seminar dates

Seminar "Management aspects of Renewable Energy Grid Integration", 3 days			
Date	**Country**	**Language**	**No.**
04.03. – 06.03.15	Thailand	English	P3-THA-ManGrid
03.06. – 05.06.15	Ecuador	English	P3-ECU-ManGrid
15.06. – 17.06.15	Peru	English	P3-PER-ManGrid
04.11. – 06.11.15	Indonesia	English	P3-IDN-ManGrid
02.12. – 04.12.15	Mexico	English	P3-MEX-ManGrid
25.05. – 27.05.16	Vietnam	English	P3-VNM-ManGrid
30.05. – 01.06.16	Philippines	English	P3-PHL-ManGrid

Note: RENAC might adapt the seminar plan according to country-specific needs and/or participants' requirements.

4. Technical aspects of Renewable Energy Grid Integration, 3 days

Introduction

The three-day seminar “Technical aspects of Renewable Energy Grid Integration” offers renewable energy education from a technical point of view, where participants have the opportunity to learn about the integration of photovoltaic and/or wind systems into the transmission or distribution grid.

Experts in the field will explain in further detail important aspects of grid integration of PV and/or wind systems. These aspects encompass many important technical topics regarding: fundamental components (such as: inverters and/or types of generators), the appropriate quality standards and certification for the equipment, important concepts like grid frequency and voltage control, how to monitor and control grid connected generation units, the grid codes for low, medium and high voltage grids and, finally, how systems are integrated into the grid (a large number of units and rooftop systems). In order to prevent accidents and secure electrical systems, the seminar includes a topic on the adequate protection measures that need to be considered and implemented, establishing correct standards for maintenance through appropriate settings.

The seminar is recommended for those who are interested in obtaining specific knowledge on technical aspects related to transmission grid operation and grid integration of fluctuating renewable energy resources.

Content

The seminar starts with an explanation of fundamental concepts and basic operation of the main components of a photovoltaic and/or wind systems such as inverters for PV plants and/or wind generators at wind farms. An overview of quality standards and certification of the components is also included in the seminar.

Experts in the field will explain important aspects of the transmission grid like the frequency of the grid and voltage control via stationary and dynamic stabilization (e.g. Fault Ride Through). The experts will also provide information on important topics of monitoring and controlling of grid-connected generators, as well as on the grid codes for low, medium and high voltage grids. Furthermore, the lecturers will focus in great detail on grid integration, explaining the system integration studies of large units connected to the transmission grid and the integration of roof top PV-systems connected to the distribution grid.

Finally, the seminar includes topics on protection measures that must be implemented, establishing the appropriate technical standards for maintenance and avoiding islanding through the appropriate settings.

The seminar will focus on specific technologies that might differ from country to country according to a needs assessment that RENAC has performed.

- Thailand: photovoltaic
- Ecuador: photovoltaic, wind
- Mexico: photovoltaic, wind

Target groups

The three-day seminar on "Technical aspects of Renewable Energy Grid Integration" is targeted at professionals from the public and private sector working in the field of energy and who are interested in acquiring technical knowledge regarding the integration of large amounts of fluctuating renewable energy resources to the transmission/distribution grid. These professionals may come from the following backgrounds:

- Engineers and technicians at ministries
- Engineers and technicians at regulatory institutions
- Engineers and technicians at transmission and distribution grid operators
- Project developers
- Utility companies

Objectives

At the end of the seminar:

- Participants will extend their knowledge on PV- inverter and/or generator technology for wind power as well as on quality standards and certification
- Participants will be familiar with concepts such as frequency and voltage control, stationary and dynamic, Fault Ride Through
- Participants will have a general overview of how grid connected generation units are monitored and controlled
- Participants will gain a fundamental understanding of grid codes for low, medium and high voltage grids
- Participants will obtain broader knowledge of integration into the grid for large units connected to the transmission grid and roof top PV-systems connected to the distribution grid
- Participants will be able to differentiate various protection methods and components for the systems
- Participants will be familiar with the maintenance of systems through technical standards, avoidance of islanding and settings

Language

- Course materials are provided in English; participants will receive colour printed hard copies (no files)
- Lecturers will present in English; simultaneous translation will be provided (according to country specific needs)

Location

The location for the seminar will be in the partner country. Details of the venue for the seminar will be published in due time on RENAC's website.

Duration and number of participants

The seminar lasts 3 days and is designed for up to 15 participants.

Requirements for participants

- Knowledge of renewable energy technology (attendance of basic seminar P1 / On1 or availability of comparable know-how)
- Interested participants have to register on RENAC's website and accept the terms of reference for the scholarship (see 1.7)
- For application deadlines please see attachment A-3 "Overview – Seminar dates and application deadlines" or visit our website: http://www.renac.de/en/current-projects/capreg.html
- Participants should be willing to attend the whole seminar, find solutions through group work, present results and discuss solutions
- Good English proficiency is an advantage

Seminar dates

Seminar "Technical aspects of Renewable Energy Grid Integration", 3 days			
Date	**Country**	**Language**	**No.**
09.03. – 11.03.15	Thailand	English	P3-THA-TecGrid
08.06. – 10.06.15	Ecuador	English	P3-ECU-TecGrid
07.12. – 09.12.15	Mexico	English	P3-MEX-TecGrid

Note: RENAC might adapt the seminar plan according to country-specific needs and /or participants' requirements.

5. Project planning of grid-connected PV, 3 days

Introduction

The three-day seminar “Project planning of grid-connected PV” offers its participants the opportunity to learn about the components, planning and realisation of large photovoltaic systems connected to the grid. Throughout the seminar, our experts in the field will explain in great detail the different aspects when planning large grid-connected PV projects, starting from the basics on the components needed for the system and the quality and certifications required. The lecturers will walk you all the way through the four steps of a PV project: project development, planning and engineering, execution, operation and maintenance.

The seminar is recommended for professionals seeking to gain a specialised background on project planning specifically in large grid-connected PV systems (10 – 25 MW).

Content

The seminar starts with an explanation of fundamental components of large grid-connected PV projects with an overview of quality standards and certifications required to ensure the proper operation of the system. Experienced tutors in the respective field will walk you through the four phases of large grid-connected PV-systems (project development, planning, engineering, execution and operation and maintenance) giving you a detailed explanation of all these phases.

In the first phase, project development, fundamental aspects like site assessment, permissions, reports, contracts, power purchase agreements (PPA) are taken into account. In the second phase, planning and engineering, more technical aspects like sizing, yield forecast, grid connection, SCADA (supervisory control and data acquisition) will be explained by our experts as well as financial aspects of the project like cash-flow analysis (CAPEX, OPEX, levelized cost of energy or LCOE), certificates and profitability. The third phase, execution, includes the topics construction and commissioning. Finally the fourth phase, operation and maintenance, encompasses methods for maintaining a large PV system such as analysis of data, troubleshooting, repairing and dismantling.

Furthermore, a checklist for evaluation of qualified installers is offered in conclusion to improve the chances of project success.

Target groups

The three-day seminar on “Project planning of grid-connected PV” is targeted at professionals from the public and private sector working in the field of energy and who are interested in acquiring theoretical as well as practical knowledge regarding the initiation, planning, engineering, execution, operation and maintenance of grid-connected PV projects. These professionals may come from the following backgrounds:

- Engineers and technicians at ministries
- Engineers and technicians at regulatory institutions
- Engineers and technicians at transmission and distribution grid operators
- Utility companies
- Project developers

Objectives

At the end of the seminar:

- Participants will acquire or extend their knowledge on different aspects related to the planning and execution of large grid-connected PV projects
- Participants will learn different steps in project planning and project engineering, from sizing the system to analysing project profitability
- Participants will be familiar with the execution of the project through construction and commissioning
- Participants will have broader knowledge of operation and maintenance of PV systems

Language

- Course materials are provided in English; participants will receive colour printed hard copies (no files)
- Lecturers will present in English; simultaneous translation will be provided (according to country specific needs)

Location

The location for the seminar will be in the partner country. Details of the venue for the seminar will be published in due time on RENAC's website.

Duration and number of participants

The seminar lasts 3 days and is designed for up to 15 participants.

Requirements for participants

- Knowledge of renewable energy technology (attendance of basic seminar P1 / On1 or availability of comparable know-how)
- Interested participants have to register on RENAC's website and accept the terms of reference for the scholarship (see 1.7)
- For application deadlines please see attachment A-3 "Overview – Seminar dates and application deadlines" or visit our website: http://www.renac.de/en/current-projects/capreg.html
- Participants should be willing to attend the whole seminar, find solutions through group work, present results and discuss solutions
- Good English proficiency is an advantage

Seminar dates

Seminar "Project planning of large grid-connected PV", 3 days			
Date	**Country**	**Language**	**No.**
22.04. – 24.04.15	Vietnam	English	P3-VNM-PPlanPV
17.02. – 19.02.16	Indonesia	English	P3-IDN-PPlanPV
06.04. – 08.04.16	Peru	English	P3-PER-PPlanPV
08.06. – 10.06.16	Ecuador	English	P3-ECU-PPlanPV
13.06. – 15.06.16	Mexico	English	P3-MEX-PPlanPV

Note: RENAC might adapt the seminar plan according to country-specific needs and/or participants' requirements.

6. Planning of PV-Hybrid-power stations, 3 days

Introduction

The three-day seminar “Planning of PV-Hybrid power stations” offers renewable energy education from a technical point of view, where its participants have the opportunity to learn about hybrid systems from the junction of photovoltaics and diesel generators.

Experts in the field will explain in further detail important aspects of a hybrid system based on photovoltaic and diesel technologies. These aspects encompass a number of important economic and financial topics and also specific technical topics regarding such hybrid systems, bringing a project from the economic and commercial idea of the hybrid power plant all the way to installation, operation and maintenance of the system.

The seminar is recommended for those who are interested in obtaining specific knowledge on general and technical aspects related to hybrid systems composed by photovoltaic and diesel technologies.

Content

The main focus of the three-day seminar will be on hybrid systems based on photovoltaic and diesel technologies.

Experts in the field will offer a brief overview from an economic point of view of analysis of the target group and the market of conventional electricity generation and also a general overview of usual topology of systems and its components, load profile analysis and stability of small grids (frequency and voltage control, reserve power). Throughout the seminar the participants will also be taught from a technical point of view about project planning and engineering through specific information about sizing and yield forecast, grid connection, and SCADA (Supervisory Control And Data Acquisition). Also, the seminar includes a brief financial training to make sure the projects are feasible through a cash-flow analysis encompassing topics such as: CAPEX, OPEX, levelized cost of energy (LCOE), certificates and profitability. Furthermore, the seminar includes maintenance, data analysis, troubleshooting, repairs and dismantling, which are important topics for operation and maintenance. The seminar concludes with a checklist for evaluation of qualified installers

Target groups

The three-day seminar on “Planning of PV-Hybrid power stations” is targeted at professionals from the public and private sector working in the field of energy who are interested in acquiring theoretical and practical knowledge regarding photovoltaic and diesel technology hybrids. These professionals may come from the following backgrounds:

- Engineers and technicians at ministries
- Engineers and technicians at regulatory institutions
- Engineers and technicians at transmission and distribution grid operators
- Utility companies
- Project developers

Objectives and seminar plan

At the end of the seminar:

- Participants will extend their knowledge on the topology of hybrid systems and their

components
- Participants will have a broader understanding of the stabilizing of small grids (frequency and voltage control, reserve power)
- Participants will obtain broader knowledge of project planning and engineering of PV-Hybrid systems through specific topics such as sizing and yield forecast, grid connection, SCADA (Supervisory Control And Data Acquisition) and cash-flow analysis.
- Participants will obtain broader knowledge of the operation and maintenance of PV-Hybrid systems
- Participants will be familiar with a checklist for evaluation of qualified installers

Language

- Course materials are provided in English; participants will receive colour printed hard copies (no files)
- Lecturers will present in English; simultaneous translation will be provided (according to country specific needs)

Location

The location for the seminar will be in the partner country. Details of the venue for the seminar will be published in due time on RENAC's website.

Duration and number of participants

The seminar lasts 3 days and is designed for up to 15 participants.

Requirements for participants

- Knowledge of renewable energy technology (attendance of basic seminar P1 / On1 or availability of comparable know-how)
- Interested participants have to register on RENAC's website and accept the terms of reference for the scholarship (see 1.7)
- For application deadlines please see attachment A-3 "Overview – Seminar dates and application deadlines" or visit our website: http://www.renac.de/en/current-projects/capreg.html
- Participants should be willing to attend the whole seminar, find solutions through group work, present results and discuss solutions
- Good English proficiency is an advantage

Seminar dates

Seminar "Planning of PV-Hybrid-power stations", 3 days			
Date	**Country**	**Language**	**No.**
27.04. – 29.04.15	Philippines	English	P3-PHL-PPlanHybrid

Note: RENAC might adapt the seminar plan according to country-specific needs and/or participants' requirements.

7. Project design for large-scale solar thermal systems (water heating), 5 days

Introduction

The five-day seminar “Project design for large-scale solar thermal systems (water heating)” offers renewable energy education from a technical point of view, where participants have the opportunity to learn about planning and designing large-scale solar thermal systems which use the incoming radiation of the sun to heat up a fluid (water) for its subsequent industrial use.

Experts in specific renewable energy technologies will explain throughout this seminar the important aspects regarding solar thermal systems. Participants will receive a comprehensive overview of the available solar resource, solar potential of the country, and the applications of the resource. Instruction will be given on important aspects for planning and designing a large-scale solar thermal project, such as component description and sizing, configuration of large solar thermal systems, installation, operation, maintenance and monitoring. Furthermore, cost calculations and economic and feasibility studies are also included in the seminar.

The seminar is recommended for those with an interest in obtaining specific knowledge on using a renewable energy resource to heat up large quantities of water for its subsequent industrial use.

Content

The seminar is structured with seven topics which will be explained by experts in solar thermal energy. The first topic in the seminar is assessment of the solar resource, the potential and applications. Lecturers will then focus on the specific components of large-scale solar thermal systems, the quality expected and certification needed. After receiving all the details about components, the students will obtain a general understanding on assessing heat demand, followed by a detailed explanation on system configuration and country specific characteristics with a final comparison between systems. The seminar also emphasizes project planning, which includes the designing of the system and sizing of the components of a solar thermal system. Lecturers will also go through elements that follow the planning and design, such as installation, commissioning, operation, maintenance (e.g. fault finding) and monitoring. Furthermore, to know if a project is financially viable or not, cost calculations, economic and feasibility studies and payback time calculations are also included in the seminar.

Target groups

The five-day seminar on “Project design for large-scale solar thermal systems (water heating)” is targeted at professionals from the public and private sector working in the field of energy who are interested in acquiring skills and knowledge regarding the planning of solar thermal energy for water heating systems. These professionals may come from the following backgrounds:

- Engineers and technicians at ministries
- Project developers
- Suppliers

Objectives and seminar plan

At the end of the seminar:

- Participants will extend their knowledge on the potentials and applications of the solar resource

- Participants will be familiar with the components of large-scale solar thermal systems and the quality control and certification required
- Participants will have a general overview of the assessment of heat demand
- Participants will have a fundamental understanding of system configurations, specific country characteristics and comparison of solar thermal systems
- Participants will obtain broader knowledge of project planning, system design and sizing of components for large water heating systems
- Participants will obtain broader knowledge of installation, commissioning, operation, maintenance, fault finding and monitoring
- Participants will be able to make cost and payback calculations
- Participants will be familiar with economic and feasibility studies regarding solar thermal systems.

Language

- Course materials are provided in English; participants will receive colour printed hard copies (no files)
- Lecturers will present in English; simultaneous translation will be provided (according to country specific needs)

Location

The location for the seminar will be in the partner country. Details of the venue for the seminar will be published in due time on RENAC's website.

Duration and number of participants

The seminar lasts 5 days and is designed for up to 15 participants.

Requirements for participants

- Knowledge of the basics of solar thermal energy is mandatory
- Interested participants have to register on RENAC's website and accept the terms of reference for the scholarship (see 1.7)
- For application deadlines please see attachment A-3 "Overview – Seminar dates and application deadlines" or visit our website: http://www.renac.de/en/current-projects/capreg.html
- Participants should be willing to attend the whole seminar, find solutions through group work, present results and discuss solutions
- Good English proficiency is an advantage

Seminar dates

Seminar "Project design for large scale solar thermal systems (water heating)", 5 days			
Date	**Country**	**Language**	**No.**
02.03. – 06.03.15	Mexico	English	P5-MEX-PPlanST

Note: RENAC might adapt the seminar plan according to country-specific needs and /or participants' requirements.

A-2 Internet-based trainings – Course description

1. On1 – Fundamentals, Fundamentals PV, Wind, Biogas and Mini Grids

Introduction

The online course covers fundamental knowledge on the main renewable energy resources (solar, wind and biogas) and introduces the fundamentals of mini grids.

Target group

This "On1 – Fundamentals" online course is targeted at professionals from the public and private sector with political responsibility and management skills working in the field of energy who are interested in acquiring fundamental knowledge on renewable energy technologies. These professionals may come from the following backgrounds:

- Lawyers
- Economists
- Scientists
- Political scientists

Content

- Electrical fundamentals, energy and power, frequency and voltage control, elements of grids, quality and security of energy supply
- Photovoltaic fundamentals (solar radiation, technology and components, application, grid-connected and off-grid systems, energy yield calculation, parameters for PV plant design and cost of energy)
- Wind power fundamentals (wind as a resource and physical basics, wind technology and components, energy yield calculation, parameters for wind farm layout and cost of energy)
- Biogas fundamentals (substrates for the production of biogas, technology and components, parameters for biogas plant layout and cost of energy)
- Mini-Grid fundamentals (off-grid electricity supply using diesel-powered mini grids, hybridization with PV- and / or wind energy-systems, technology and components, parameters for system sizing and levelized cost of energy)

Duration and estimated effort for the online course

The online course will last 8 weeks. Participants need at least 25 – 50 hours to work through the material (reading, watching online lectures, self-evaluation and preparation for the final exam).

During the first 6 weeks, participants work through the self-learning material (text, videos and exercises). The exams will take place in the 7th and 8th week (resit).

Language

The online course will be in English and Spanish.

Requirements for participants

- This course is for participants who have little or no knowledge of renewable energy
- Interested participants have to register on RENAC's website and accept the terms of reference for the scholarship (see 1.7)

- For application deadlines please see attachment A-3 “Overview – Seminar dates and application deadlines” or visit our website: http://www.renac.de/en/current-projects/capreg.html
- Participants should be willing to attend the whole course, find solutions through group work, present results and discuss solutions
- Proficiency in English and/or Spanish is mandatory
- For the online course a good Internet connection is necessary

Seminar date and deadline for application

The online course starts on **12 January 2015**.

For information about application deadlines please see A-3 “Overview – Seminar dates and application deadlines” or visit our website:

http://www.renac.de/en/current-projects/capreg.html

2. On2 - PlanGrid, Wind and PV Grid Integration

Introduction

The online course focuses on important aspects related to the planning and management of the grid integration of large amounts of fluctuating renewable energies.

Target group

The "On2 – PlanGrid" online course is targeted at professionals from the public and private sector working in the field of energy who are interested in acquiring management knowledge regarding energy systems with large amounts of alternating renewable energy resources. These professionals may come from the following backgrounds:

- Regulators and political decision makers
- Persons with management skills and tasks in planning energy systems
- Persons with management skills and tasks in the operation of electricity grids

Content

- Planning of electricity (Residual load curve, grid operation and power plant dispatch)
- Calculation of annual wind and PV feed in time series
- Short term forecast of wind and solar power
- Capacity planning (calculation of firm capacity, capacity credit)
- Calculation methodology of balancing power
- Management of grid congestion
- Grid code development
- Questions for grid integration and system integration studies

Duration and estimated effort for the online course

The online course will last 8 weeks. Participants need at least 25 – 50 hours to work through the material (reading, watching online lectures, self-evaluation and preparation for the final exam).

During the first 6 weeks, participants work through the self-learning material (text, videos and exercises). The exams will take place in the 7th and 8th week (resit).

Language

The online course will be in English and Spanish.

Requirements for participants

- Knowledge of wind and PV technology (attendance of basic seminar P1 or On1 or availability of comparable know-how)
- Interested participants have to register on RENAC's website and accept the terms of reference for the scholarship (see 1.7)
- For application deadlines please see attachment A-3 "Overview – Seminar dates and application deadlines" or visit our website: http://www.renac.de/en/current-projects/capreg.html
- Participants should be willing to attend the whole course, find solutions through group work, present results and discuss solutions
- Proficiency in English and/or Spanish is mandatory
- For the online course a good Internet connection is necessary

Seminar date and deadline for application

The online course starts on **16 March 2015**.

For information about application deadlines please see A-3 “Overview – Seminar dates and application deadlines” or visit our website:

http://www.renac.de/en/current-projects/capreg.html

3. On3 - Support, Support mechanisms for Renewable Energy

Introduction

The online course transfers knowledge on different types of support mechanisms for renewable energy and their respective methodology.

Target group

The "On3 – Support" online course is targeted at professionals from the public and private sector responsible for setting the legal and regulatory framework or for their implementation. Participants should have the following academic background:

- Lawyers
- Economists
- Scientists
- Political scientists

Content

- Objective of support mechanisms for renewable energy
- Calculation of grid- and fuel parity
- Feed-in tariffs (principles, tariff setting methodology, degression, data collection, accounting and billing, cost rollover, legal and regulatory framework (Germany, for example)
- Certificates and quotes (principles, technical aspects, legal and regulatory framework)
- Net-Metering (principles, technical aspects, legal and regulatory framework)
- Revenues on the energy market (merit order, balancing power market, price volatility)
- Contribution of support mechanisms for renewable energy (e.g. renewable energy project financing, risk analysis from the standpoint of a bank)
- International experience (lessons learnt / best practice)

Duration and estimated effort for the online course

The online course will last 8 weeks. Participants need at least 25 – 50 hours to work through the material (reading, watching online lectures, self-evaluation and preparation for the final exam).

During the first 6 weeks, participants work through the self-learning material (text, videos and exercises). The exams will take place in the 7th and 8th week (resits).

Language

The online course will be in English and Spanish.

Requirements for participants

- Knowledge of wind and PV technology (attendance of basic seminar P1 or On1 or availability of comparable know-how)
- Interested participants have to register on RENAC's website and accept the terms of reference for the scholarship (see 1.7)
- For application deadlines please see attachment A-3 "Overview – Seminar dates and application deadlines" or visit our website: http://www.renac.de/en/current-projects/capreg.html
- Participants should be willing to attend the whole course, find solutions through group work, present results and discuss solutions

- Proficiency in English and/or Spanish is mandatory
- For the online course a good Internet connection is necessary

Seminar date and deadline for application

The online course starts on **25 May 2015**.

For information about application deadlines please see A-3 “Overview – Seminar dates and application deadlines” or visit our website:

http://www.renac.de/en/current-projects/capreg.html

4. On4 - Bank, Bankability of Wind and PV Projects

Introduction

The online course stresses the most critical parameters for bankable wind and PV projects.

Target group

The "On4 – Bank" online course is targeted at professionals from the public and private sector working in the field of energy who are interested in acquiring economic and financial knowledge for planning and executing bankable renewable energy projects. These professionals may come from the following backgrounds:

- Ministries
- Regulators
- Financing institutions
- Project developers
- Planners

Content

- Global market development of wind and PV technologies
- Concepts for bankability of wind and PV projects (CAPEX, OPEX, planning, licensing, construction, operation, maintenance, insurance, land use, decommissioning, repowering; costs of components)
- Business plan from a bank's standpoint
- Example of a 25 MWp PV power plant and example of a 75 MW wind farm (assessment of annual energy generation, revenues from support systems / energy market, risk analysis and due diligence, plus cash flow analysis).
- Check list for risk assessment guidelines and project monitoring

Duration and estimated effort for the online course

The online course will last 8 weeks. Participants need at least 25 – 50 hours to work through the material (reading, watching online lectures, self-evaluation and preparation for the final exam).

During the first 6 weeks, participants work through the self-learning material (text, videos and exercises). The exams will take place in the 7th and 8th week (resit).

Language

The online course will be in English and Spanish.

Requirements for participants

- Knowledge of wind and PV technology (attendance of basic seminar P1 or On1 or availability of comparable know-how)
- Interested participants have to register on RENAC's website and accept the terms of reference for the scholarship (see 1.7)
- For application deadlines please see attachment A-3 "Overview – Seminar dates and application deadlines" or visit our website: http://www.renac.de/en/current-projects/capreg.html
- Participants should be willing to attend the whole course, find solutions through group work, present results and discuss solutions

- Proficiency in English and/or Spanish is mandatory
- For the online course a good Internet connection is necessary

Seminar date and deadline for application

The online course starts on **24 August 2015**.

For information about application deadlines please see A-3 “Overview – Seminar dates and application deadlines” or visit our website:

http://www.renac.de/en/current-projects/capreg.html

5. On5 - PPlanPV, Planning of large-scale grid-connected PV

Introduction

The online course deals with important aspects of project planning for large-scale grid-connected PV systems.

Target group

This "On5 - PPlanPV" online course is targeted at professionals from the public and private sector working in the field of energy who are interested in acquiring theoretical as well as practical knowledge regarding the initiation, planning, engineering, execution, operation and maintenance of grid-connected PV projects. These professionals may come from the following backgrounds:

- Engineers and technicians at ministries
- Engineers and technicians at regulatory institutions
- Engineers and technicians at transmission and distribution grid operators
- Utility companies
- Project developers

Content

- Components of large grid-tied photovoltaic systems, quality and certification
- Project development (site assessment, permissions, reports, contracts and power purchase agreements)
- Project planning and engineering (sizing and yield forecast, grid connection, SCADA, cash-flow analysis)
- Project execution (construction and commissioning)
- Operation and maintenance (maintenance, data analysis, troubleshooting, repairs and dismantling
- Checklist for quality and certification and checklist for evaluation of qualified installers

Duration and estimated effort for the online course

The online course will last 8 weeks. Participants need at least 25 – 50 hours to work through the material (reading, watching online lectures, self-evaluation and preparation for the final exam).

During the first 6 weeks, participants work through the self-learning material (text, videos and exercises). The exams will take place in the 7th and 8th week (resit).

Language

The online course will be in English and Spanish.

Requirements for participants

- Knowledge of wind and PV technology (attendance of basic seminar P1 or On1 or availability of comparable know-how)
- Interested participants have to register on RENAC's website and accept the terms of reference for the scholarship (see 1.7)
- For application deadlines please see attachment A-3 "Overview – Seminar dates and application deadlines" or visit our website: http://www.renac.de/en/current-projects/capreg.html

- Participants should be willing to attend the whole course, find solutions through group work, present results and discuss solutions
- Proficiency in English and/or Spanish is mandatory
- For the online course a good Internet connection is necessary

Seminar date and deadline for application

The online course starts on **26 October 2015**.

For information about application deadlines please see A-3 “Overview – Seminar dates and application deadlines” or visit our website:

http://www.renac.de/en/current-projects/capreg.html

6. On6 - PPlanHybridPV, Planning of PV-Hybrid-power stations ("Fuelsaver")

Introduction

The online course focuses on important aspects of project planning for PV-Hybrid-power stations or "Fuelsaver" systems.

Target group

The "On6 - PPlanHybrid" online course is targeted at professionals from the public and private sector working in the field of energy who are interested in acquiring theoretical and practical knowledge regarding photovoltaic and diesel technology hybrids. These professionals may come from the following backgrounds:

- Engineers and technicians at ministries
- Engineers and technicians at regulatory institutions
- Engineers and technicians at transmission and distribution grid operators
- Utility companies
- Project developers

Content

- Target group analysis, market overview of conventional electricity generation
- System topology, overview of system components
- Recording and analysis of load profiles
- Stability of small grids (frequency and voltage control, reserve power)
- Storage integration (grid-tied, grid-forming, LCOE)
- Case study: Hybridization of a 1 MVA-Diesel-mini grid with PV
- Project development (Site assessment, permissions, reports, contracts, power purchase agreements)
- Project planning and engineering (sizing and yield forecast, grid connection, SCADA and cash-flow analysis)
- Project execution (construction and commissioning)
- Operation and Maintenance (maintenance, data analysis, troubleshooting, repairs and dismantling
- Checklist for evaluation of qualified installers

Duration and estimated effort for the online course

The online course will last 8 weeks. Participants need at least 25 – 50 hours to work through the material (reading, watching online lectures, self-evaluation and preparation for the final exam).

During the first 6 weeks, participants work through the self-learning material (text, videos and exercises). The exams will take place in the 7th and 8th week (resit).

Language

The online course will be in English and Spanish.

Requirements for participants

- Knowledge of the mini grid online course On1 or comparable knowledge
- Interested participants have to register on RENAC's website and accept the terms of reference for the scholarship (see 1.7)

- For application deadlines please see attachment A-3 “Overview – Seminar dates and application deadlines” or visit our website: http://www.renac.de/en/current-projects/capreg.html
- Participants should be willing to attend the whole course, find solutions through group work, present results and discuss solutions
- Proficiency in English and/or Spanish is mandatory
- For the online course a good Internet connection is necessary

Seminar date and deadline for application

The online course starts on **18 January 2016**.

For information about application deadlines please see A-3 “Overview – Seminar dates and application deadlines” or visit our website:

http://www.renac.de/en/current-projects/capreg.html

7. On7 - PPlanBioGas, Planning for medium-sized biogas plants

Introduction

The online course stresses the important aspects of project planning for medium-sized biogas plants.

Target group

The "On7 - PPlanBioGas" online course is targeted at professionals from the public and private sector working in the field of energy who are interested in acquiring theoretical and practical knowledge regarding the planning of medium-sized biogas plants. These professionals may come from the following backgrounds:

- Engineers and technicians at ministries
- Engineers and technicians at regulatory institutions
- Engineers and technicians at transmission and distribution grid operators
- Utility companies
- Project developers

Content

- Substrates for biogas production
- Sustainability aspects
- Types and components of plants
- Possibilities for the utilization of biogas (production of heat or cold, combined heat and power (CHP), upgrading to natural gas quality)
- Production of organic fertilizer
- Model plant 250 kWel.:
    - Feasibility, assessment of the annual energy output as a basis for project financing
    - Planning, approval, construction and implementation
    - Construction and configuration of storage, infeed equipment, digester, biogas storage, combined heat and power and grid connection
    - safety and explosion protection requirements
    - Cash Flow analysis: CAPEX, OPEX, Levelized Cost Of Electricity (LCOE)
- Requirements concerning repair and maintenance
- Quality and certification check list

Duration and estimated effort for the online course

The online course will last 8 weeks. Participants need at least 25 – 50 hours to work through the material (reading, watching online lectures, self-evaluation and preparation for the final exam).

During the first 6 weeks, participants work through the self-learning material (text, videos and exercises). The exams will take place in the 7th and 8th week (resit).

Language

The online course will be in English and Spanish.

Requirements for participants

- Knowledge of the online biogas basic course On1 or comparable knowledge
- Interested participants have to register on RENAC's website and accept the terms of reference for the scholarship (see 1.7)

- For application deadlines please see attachment A-3 “Overview – Seminar dates and application deadlines” or visit our website: http://www.renac.de/en/current-projects/capreg.html
- Participants should be willing to attend the whole course, find solutions through group work, present results and discuss solutions
- Proficiency in English and/or Spanish is mandatory
- For the online course a good Internet connection is necessary

Seminar date and deadline for application

The online course starts on **21 March 2016**.

For information about application deadlines please see A-3 “Overview – Seminar dates and application deadlines” or visit our website:

http://www.renac.de/en/current-projects/capreg.html

8. On8 - PPlanST, Planning for large scale solar thermal projects for water heating

Introduction

The online course transfers knowledge on important issues related to project planning of large-scale solar thermal projects for water heating.

Target group

The "On8 - PPlanST" online course is targeted at professionals from the public and private sector working in the field of energy who are interested in acquiring theoretical and practical knowledge regarding the planning of large scale solar thermal projects for water heating. These professionals may come from the following backgrounds:

- Engineers and technicians at ministries
- Engineers and technicians at regulatory institutions
- Engineers and technicians at transmission and distribution grid operators
- Utility companies
- Project developers
- Suppliers

Content

- Components of large scale solar thermal systems, quality control and certification
- Summarising the basics: volume flows, heat transfer, pressures, expansion and stagnation
- Case study: solar thermal system for hot water supply in a hospital
    - Resource assessment
    - Assessment of heat demand
    - Project planning and system design
    - Comparison and discussion of different system designs
    - Detailed system design, hydraulics and sizing of components
    - Installation, commissioning, operation, maintenance, fault finding and monitoring
    - Cost calculation, economics, feasibility studies and payback
- Quality and certification check list

Duration and estimated effort for the online course

The online course will last 8 weeks. Participants need at least 25 – 50 hours to work through the material (reading, watching online lectures, self-evaluation and preparation for the final exam).

During the first 6 weeks, participants work through the self-learning material (text, videos and exercises). The exams will take place in the 7th and 8th week (resit).

Language

The online course will be in English and Spanish.

Requirements for participants

- Knowledge of solar thermal basics
- Interested participants have to register on RENAC's website and accept the terms of reference for the scholarship (see 1.7)

- For application deadlines please see attachment A-3 “Overview – Seminar dates and application deadlines” or visit our website: http://www.renac.de/en/current-projects/capreg.html
- Participants should be willing to attend the whole course, find solutions through group work, present results and discuss solutions
- Proficiency in English and/or Spanish is mandatory
- For the online course a good Internet connection is necessary

Seminar date and deadline for application

The online course starts on **23 May 2016**.

For information about application deadlines please see A-3 “Overview – Seminar dates and application deadlines” or visit our website:

http://www.renac.de/en/current-projects/capreg.html

9. On9 - ClimateFin, Climate Finance

Introduction

The online course transfers know-how on a wide variety of instruments in the field of Climate Finance.

Target group

The "On9 – ClimateFin" online course is targeted at professionals from the public and private sector with political responsibility and management skills working in the field of energy who are interested in gaining a broad understanding of the different instruments existing for Climate Finance:

- Lawyers
- Economists
- Scientists
- Political scientists

Content

- Purpose and objective of mechanisms and instruments, examples and experiences
- Mechanisms (global climate finance architecture, carbon finance instruments, green climate fund, innovative climate financing mechanisms)
- Instruments for climate protection strategies (e.g. LCDS – Low Carbon Development Strategy, NAMAS - Nationally Appropriate Mitigation Action, MAMA - Municipal Appropriate Mitigation Action, MRV – Measurement, Reporting and Verification)

Duration and estimated effort for the online course

The online course will last 8 weeks. Participants need at least 25 – 50 hours to work through the material (reading, watching online lectures, self-evaluation and preparation for the final exam).

During the first 6 weeks, participants work through the self-learning material (text, videos and exercises). The exams will take place in the 7th and 8th week (resit).

Language

The online course will be in English and Spanish.

Requirements for participants

- Interested participants have to register on RENAC's website and accept the terms of reference for the scholarship (see 1.7)
- For application deadlines please see attachment A-3 "Overview – Seminar dates and application deadlines" or visit our website: http://www.renac.de/en/current-projects/capreg.html
- Participants should be willing to attend the whole course, find solutions through group work, present results and discuss solutions
- Proficiency in English and/or Spanish is mandatory
- For the online course a good Internet connection is necessary

Seminar date and deadline for application

The online course starts on **29 August 2016**.

For information about application deadlines please see A-3 “Overview – Seminar dates and application deadlines” or visit our website:

http://www.renac.de/en/current-projects/capreg.html

A-3 Overview - Seminar dates and application deadlines

Please note: Seminar dates and application deadlines may change. For up-to-date information please check RENAC's website: http://www.renac.de/en/current-projects/capreg.html or contact RENAC via capreg(at)renac.de.

Application deadlines for trainings in partner countries

Date	Topic	Duration	No.	Application deadline
Indonesia				
01.12. – 05.12.14	**Fundamentals of Renewable Energy**	5	P5-IDN-Fundamental	**22.10.2014**
04.11. – 06.11.15	**Management aspects of Renewable Energy Grid Integration**	3	P3-IDN-ManGrid	**04.09.2015**
09.11. – 11.11.15	**Bankability of Renewable Energy projects**	3	P3-IDN-Bank	**11.09.2015**
17.02. – 19.02.16	**Project planning of grid-connected PV**	3	P3-IDN-PPlanPV	**27.11.2015**
Philippines				
01.12. – 05.12.14	**Fundamentals of Renewable Energy**	5	P5-PHL-Fundamental	**22.10.2014**
27.04. – 29.04.15	**Planning of PV-Hybrid-power stations**	3	P3-PHL-PPlanHybridPV	**27.02.2015**
30.05. – 01.06.16	**Management aspects of Renewable Energy Grid Integration**	3	P3-PHL-ManGrid	**26.02.2016**
12.10. – 14.10.16	**Bankability of Renewable Energy projects**	3	P3-PHL-Bank	**08.07.2016**
Thailand				
24.11. – 28.11.14	**Fundamentals of Renewable Energy**	5	P5-THA-Fundamental	**22.10.2014**
04.03. – 06.03.15	**Management aspects of Renewable Energy Grid Integration**	3	P3-THA-ManGrid	**23.01.2015**
09.03. – 11.03.15	**Technical aspects of Renewable Energy Grid Integration**	3	P3-THA-TecGrid	**23.01.2015**
22.02. – 24.02.16	**Bankability of Renewable Energy projects**	3	P3-THA-Bank	**27.11.2015**

Date	Topic	Duration	No.	Application deadline
Vietnam				
08.12. – 12.12.14	**Fundamentals of Renewable Energy**	5	P5-VNM-Fundamental	**22.10.2014**
22.04. – 24.04.15	**Project planning of large grid-connected PV**	3	P3-VNM-PPlanPV	**06.03.2015**
25.05. – 27.05.16	**Management aspects of Renewable Energy Grid Integration**	3	P3-VNM-ManGrid	**26.02.2016**
17.10. – 19.10.16	**Bankability of Renewable Energy projects**	3	P3-VNM-Bank	**08.07.2016**
Mexico				
02.03. – 06.03.15	**Project design for large-scale solar thermal systems (water heating)**	5	P5-MEX-PPlanST	**19.01.2015**
02.12. – 04.12.15	**Management aspects of Renewable Energy Grid Integration**	3	P3-MEX-ManGrid	**02.10.2015**
07.12. – 09.12.15	**Technical aspects of Renewable Energy Grid Integration**	3	P3-MEX-TecGrid	**09.10.2015**
13.06. – 15.06.16	**Planning of large grid-connected PV**	3	P3-MEX-PPlanPV	**15.04.2016**
Peru				
26.01. – 30.01.15	**Fundamentals of Renewable Energy**	5	P5-PER-Fundamental	**14.11.2014**
15.06. – 17.06.15	**Management aspects of Renewable Energy Grid Integration**	3	P3-PER-ManGrid	**17.04.2015**
06.04. – 08.04.16	**Planning of large grid-connected PV**	3	P3-PER-PPlanPV	**05.02.2016**
11.04. – 13.04.16	**Bankability of Renewable Energy projects**	3	P3-PER-Bank	**12.02.2016**

Date	Topic	Duration	No.	Application deadline
Ecuador				
02.02. – 06.02.15	**Fundamentals of Renewable Energy**	5	P5-ECU-Fundamental	**28.11.2014**
03.06. – 05.06.15	**Management aspects of Renewable Energy Grid Integration**	3	P3-ECU-ManGrid	**03.04.2015**
08.06. – 10.06.15	**Technical aspects of Renewable Energy Grid Integration**	3	P3-ECU-TecGrid	**10.04.2015**
08.06. – 10.06.16	**Planning of large grid-connected PV**	3	P3-ECU-PPlanPV	**08.04.2016**

Application deadlines for Internet-based trainings

Start Date	Topic	Duration (weeks)	No.	Application deadline
12.01.15	**On1 – Fundamentals, Fundamentals PV, Wind, Biogas and Mini Grids**	8	On1-Fundamentals	**28.11.2014**
16.03.15	**On2-PlanGrid, Wind and PV Grid Integration**	8	On2-PlanGrid	**16.02.2015**
25.05.15	**On3-Support, Support mechanisms for Renewable Energy**	8	On3-Support	**16.02.2015**
24.08.15	**On4-Bank, Bankability of Wind and PV projects**	8	On4-Bank	**14.06.2015**
26.10.15	**On5-PPlanPV, Planning of large-scale grid-connected PV**	8	On5-PPlanPV	
18.01.16	**On6-PPlanHybridPV, Planning of PV-Hybrid-power stations (“Fuelsaver”)**	8	On6-PPlan Hybrid	
21.03.16	**On7-PPlanBioGas, Planning for medium-sized biogas plants**	8	On7-PPlan BioGas	**10.01.2016**
23.05.16	**On8-PPlanST, Planning for large-scale solar thermal projects for water heating**	8	On8-PPlanST	
29.08.16	**On9-ClimateFin, Climate Finance**	8	On9-ClimateFin	

Application deadlines for trainings in Berlin

Date	Topic	Duration	No.	Application deadline
18.05. – 22.05.15	**Renewable Energy and Grid Integration / Energy transition**	5	P1-Berlin	**27.02.2015**
06.07. – 10.07.15	**Renewable Energy and Grid Integration / Energy transition**	5	P2-Berlin	**10.04.2015**
28.09. – 02.10.15	**Renewable Energy and Grid Integration / Energy transition**	5	P3-Berlin	**19.06.2015**
19.10. – 23.10.15	**Renewable Energy and Grid Integration / Energy transition**	5	P4-Berlin	**03.07.2015**
09.05. – 13.05.16	**Renewable Energy and Grid Integration / Energy transition**	5	P5-Berlin	**12.02.2016**
11.07. – 15.07.16	**Renewable Energy and Grid Integration / Energy transition**	5	P6-Berlin	**15.04.2016**
19.09. – 23.09.16	**Renewable Energy and Grid Integration / Energy transition**	5	P7-Berlin	**24.06.2016**

A-4 Terms of Reference

Terms of reference for CapREG seminars in partner countries

(attachment to application form)

Please click on the "I agree" box under the online application to agree to the terms of reference

CapREG is a scholarship programme; the seminar places are limited. Therefore RENAC needs to ensure the attendance of the participants selected for the seminars. For this reason RENAC asks all candidates to confirm the following statement.

I herewith agree that

Selection of participants:

- RENAC tries to provide as many places in the programme as possible. However, RENAC shall make the final decision on who may participate. There is no legal entitlement to participation.
- RENAC will place candidates on a waiting list if too many persons apply for the scholarship. If places are available RENAC will inform me as soon as possible that I can attend the seminars.

Seminar fees and confirmation:

- The seminar fees for my participation in the seminar (printed handouts, exercises, lunch and tea / coffee during the seminar) are financed by the CapREG programme.
- RENAC will inform me via email as soon as possible before the start of the seminar as to whether I have been selected for a scholarship for the seminar. Within 2 weeks after I receive this email I will inform RENAC via email to capreg@renac.de if I will take up the scholarship or not. Failing this, I understand that RENAC has the right to give the seminar place to another candidate.
- If I receive a scholarship for the CapREG seminar and confirm my participation I will attend all lectures given in the CapREG seminar.
- If I have confirmed my participation and then do not attend parts of a seminar I have to pay EUR 500 for a full seminar day which I do not attend and EUR 250 for a half seminar day which I do not attend.
- If I confirm my participation and then need to cancel my scholarship due to sudden illness, I will inform RENAC immediately and send a medical certificate or other written confirmation stating the reason for my failure to participate. I will inform RENAC via email to capreg@renac.de. In this case, I do not have to pay the seminar costs. Otherwise, I understand I will have to pay the costs for the seminar (EUR 500 per seminar day).

Travel costs:

- I will organize and book my travel to/from the seminar, the hotel as well as other travel arrangements myself. Travel costs for the seminars in partner countries are not included in the CapREG scholarship programme and thus will not be refunded by RENAC.

Liability and Force Majeure:

- RENAC shall only be liable to pay compensation - regardless of the legal grounds and regardless of whether the damage is direct or indirect - if the damage was caused by wilful intent or gross negligence on RENAC's part or on the part of a vicarious agent or in the case of culpable damages to life, body or health or if RENAC has maliciously concealed a defect.

Cancellation policy:

- If, for any reason, RENAC has to cancel a seminar 14 days or more before the start of the seminar, RENAC will not be responsible for any costs incurred by the participant (flight costs, hotel fees, money transfer costs etc.). RENAC will inform the participant via email.

Intellectual Property and RENAC Material:

- All intellectual property used and distributed in the programme belongs exclusively to RENAC. The programme participants are not entitled to reproduce, copy, alter, distribute or sell materials, logos etc. belonging to RENAC.

Forum and Governing Law:

- The programme is governed by German Law. The court of arbitration shall be Berlin, Germany.

Correctness of information:

- I am conscious of the fact that by sending my application to RENAC I confirm the correctness of all information provided in the application form.

Terms of reference for CapREG seminars in Berlin

(attachment to application form)

Please click on the "I agree" box under the online application to agree to the terms of reference.

CapREG is a scholarship programme; the seminar places are limited. Therefore RENAC needs to ensure the attendance of the participants selected for coming to Berlin. For this reason RENAC asks all candidates to confirm the following statement.

I herewith agree that

Selection of participants:

- RENAC tries to provide as many places in the programme as possible. However, RENAC shall make the final decision of who may participate. There is no legal entitlement to participation.
- RENAC will place candidates on a waiting list if too many persons apply for the scholarship. If places are available RENAC will inform me as soon as possible that I can attend the seminars.

Seminar fees and confirmation:

- The seminar fees for my participation in the five-day seminar in Berlin (printed handouts, exercises, laboratories, fieldtrips, Monday to Friday: lunch and tea / coffee) are financed by the CapREG programme.
- RENAC will inform me via email as soon as possible before the start of the seminar if I have been selected for a scholarship for the seminar in Berlin. Within 2 weeks after I receive this email I will inform RENAC via email to capreg@renac.de if I will take up the scholarship or not. Failing this, I understand that RENAC has the right to give the seminar place to another candidate.
- If I receive a scholarship for the CapREG seminar and confirm my participation I will attend all lectures given in the CapREG seminar.
- If I confirm my participation and do not attend parts of a seminar I have to pay EUR 500 for a full seminar day which I do not attend and EUR 250 for a half seminar day which I do not attend.
- If I have confirmed my participation and then need to cancel my scholarship due to sudden illness, I will inform RENAC immediately and send a medical certificate or other written confirmation stating the reason for my failure to participate. I will inform RENAC via email to capreg@renac.de. In this case I do not have to pay the seminar costs. Otherwise, I understand I will have to pay the costs for the seminar (EUR 500 per seminar day).

Health insurance:

- RENAC will provide me with health insurance for the duration of the seminar (7 days) in Germany. RENAC will send a confirmation of the insurance prior to my arrival in Germany. I must arrange all other insurance myself. I acknowledge that the health insurance provided by RENAC does not cover pre-existing medical conditions.

Visa:

- After I confirm my participation for the scholarship RENAC will send an invitation letter in pdf format via email to my business address in due time before the seminar starts.
- I shall apply for a VISA to Germany myself.

Travel costs:

- I organize and book the travel to/from Berlin and the hotel in Berlin as well as other travel arrangements myself.
- RENAC will provide information about hotels situated near the Renewables Academy AG in Berlin.
- I will forward the original receipts for a return economy-class flight and for hotel accommodation in Berlin to RENAC not later than 3 weeks after the end of the seminar.
- The participants will cover at least 40 % of flight ticket costs. RENAC will provide 60 % of costs of a return economy-class flight between Indonesia, Vietnam, Thailand, the Philippines and Berlin (maximum EUR 660) and 60 % of costs of a return economy-class flight between Mexico, Ecuador, Peru and Berlin (maximum EUR 780).
- The participants will cover at least 40% of hotel costs. RENAC will provide 60 % of hotel costs in Berlin (up to 6 nights, maximum EUR 45 per night).
- RENAC will refund costs after receiving receipts, but not later than 3 weeks after receiving the receipts.

Liability and Force Majeure:

- RENAC shall only be liable to pay compensation - regardless of the legal grounds and regardless of whether the damage is direct or indirect - if the damage was caused by wilful intent or gross negligence on RENAC's part or on the part of a vicarious agent or in the case of culpable damages to life, body or health or if RENAC has maliciously concealed a defect.

Intellectual Property and RENAC Material:

- All intellectual property used and distributed in the programme belongs exclusively to RENAC. The programme participants are not entitled to reproduce, copy, alter, distribute or sell materials, logos etc. belonging to RENAC.

Forum and Governing Law:

- The programme is governed by German Law. The court of arbitration shall be Berlin, Germany.

Correctness of information:

- I am conscious of the fact that by sending my application to RENAC I confirm the correctness of all information provided in the application form.

Terms of reference for CapREG online courses

(attachment to application form)

Please click on the "I agree" box under the online application to agree to the terms of reference.

CapREG is a scholarship programme; the seminar places are limited. Therefore RENAC needs to ensure the attendance of the participants selected for the online courses. For this reason RENAC asks all candidates to confirm the following statement.

I herewith agree that

Selection of participants:

- RENAC tries to provide as many places in the programme as possible. However, RENAC shall make the final decision of who may participate. There is no legal entitlement to participation.
- RENAC will place candidates on a waiting list if too many persons apply for the scholarship. If places are available RENAC will inform me as soon as possible that I can attend the online courses.

Online course fees:

- RENAC will inform me as soon as possible after the end of the application phase (at least six weeks before the beginning of the respective course) if I have been selected for a scholarship.
- My online course fees are financed by the CapREG programme.

Deactivation of account / cancellation:

- RENAC will inform persons via email if they are to receive a scholarship. If I do not accept this scholarship I will inform RENAC via email to capreg@renac.de at least four weeks before the beginning of the respective course.
- If I receive a scholarship for one or more CapREG online courses I will attend this / all these online course(s) (read the texts, address exercises, attend virtual classrooms and attend exams).
- If I receive a scholarship for one or more CapREG online courses and I do not attend the course(s) then RENAC will send a reminder via email. RENAC has the right to deactivate my account if I do not attend the online course(s) within two weeks after the reminder. If I do not attend, I will have to pay EUR 400 for the respective online course(s).
- If I need to cancel my scholarship due to sudden illness, I will inform RENAC immediately and send a medical certificate or other written confirmation stating the reason of failure to participate via email to capreg@renac.de. In this case I do not have to pay the costs for the respective course(s).

Liability and Force Majeure:

- RENAC shall only be liable to pay compensation - regardless of the legal grounds and regardless of whether the damage is direct or indirect - if the damage was caused by wilful intent or gross negligence on RENAC's part or on the part of a vicarious agent or in the case of culpable damages to life, body or health or if RENAC has maliciously concealed a defect.

Intellectual Property and RENAC Material:

- All intellectual property used and distributed in the programme belongs exclusively to RENAC. The programme participants are not entitled to reproduce, copy, alter, distribute or sell materials, logos etc. belonging to RENAC.

Forum and Governing Law:

- The programme is governed by German Law. The court of arbitration shall be Berlin, Germany.

Correctness of information:

- I am conscious of the fact, that by sending my application to RENAC I confirm the correctness of all provided information in the application form.

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