

Strengthening capacities for the integration of renewable energies into the electricity grid

Activity	Training on the integration of renewable energy into the electricity grid
Area	Capacity building
Country	Supraregional / MENA
Project title	Training on the integration of renewable energy into the electricity grid in Morocco, Tunisia, Algeria, Egypt, Lebanon, Jordan and Libya (RE-GridSystem)
Duration	12/2010 – 12/2014
Implementing organisation	Renewables Academy AG (RENAC)
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Initial situation

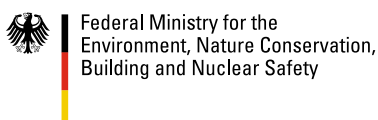
In the MENA region, there had already been first efforts to promote the deployment of renewable energies (RE). However, there was a discrepancy between the political targets for RE deployment and the operative responsibility for electricity generation. The system operators were primarily accustomed to managing large-scale fossil-fuel power plants and perceived renewable energies as unreliable due to their variability. A capacity needs assessment showed that there was a demand for trainings on how to secure a stable electricity supply even with high shares of grid-connected wind and solar power. At this point, there was no systematic training for experts and administration in the energy sector concerning the grid integration of electricity from renewable sources. Basic economic and technological knowledge on the generation technologies however was already present, as there had been some solar and wind projects in a few countries of the region.



Summary

In the framework of the International Climate Initiative, Renewables Academy AG (RENAC) has conducted trainings on the integration of renewable energy into the electricity grid in the MENA region. Thereby, objections concerning the reliability of renewable energies had to be dispelled in the region. With the help of a “blended learning” approach, which combines online activities with classroom seminars, knowledge about the grid integration of electricity from fluctuating energy sources was imparted. A stronger advocacy for renewable energies in the partner countries leads to an increased deployment of renewables in the long term and thereby contributes to mitigating greenhouse gases. The relevance of the trainings and their easy transferability to other contexts account for their high potential for greenhouse gas mitigation in the medium and long term.

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Contribution to GHG mitigation

With the help of the activity, a knowledge transfer to the partner countries has taken place. The participants in the trainings received practice-relevant information about the operation and long term planning of energy supply systems with high shares of fluctuating electricity generation from wind and solar power plants. Thereby, concerns in the area of engineering against the deployment of RE have been overcome. This has been also confirmed by a follow-up survey for alumni.

Since RE are an essential component of low carbon strategies, this approach will contribute to greenhouse gas mitigation in the medium and long term. Conveying to relevant actors that renewable energies are not a problem in energy supply, but rather a part of the solution, is an essential outcome of the project.

In addition, the activities in the partner countries and the intensive expert exchange encouraged the involved actors to build networks and develop a common understanding for solutions to deploy renewables. This surely is a beneficial dynamic for the further uptake of RE in MENA and other regions and the resulting mitigation of greenhouse gases.

Success factors

The combination of online activities, classroom seminars, and an additional exhibition has proven to be successful. This blended learning approach has been a decisive success factor. Through the deliberately chosen participants coming from governmental institutions, grid operators, companies and research institutes in the region, knowledge was disseminated in relevant areas in the different partner countries. This is expected to produce a multiplying effect which goes hand in hand with dispelling doubts about the reliability of RE. The self-financing of travel expenses to Germany by the participants contributed to them being motivated and alert.

The high replication potential is apparent since there is already a first subsequent project taking place: In the framework of the International Climate Initiative, RENAC now conducts trainings on grid integration of renewables in Latin America and Southeast Asia. An expansion and transfer also to other regions which are beginning to deploy RE is possible and expedient.

Lessons learned

During the project implementation, the regular presence of participants in classroom seminars turned out to be a challenge. Taking into account the absence of the participants from their workplace and personal environment during the seminars, RENAC developed online seminars with teaching videos, exercises, text and a forum for question and answers in French and in English. This solution proved to be reasonable for knowledge transfer.

For the online classes, an appealing presentation of the contents was decisive so that the participants actually engaged with the materials. A test at the end of the online seminar with the corresponding certificate "Certified ReGrid Manager (CRGM)" was an efficient incentive for the participants. Almost 200 persons successfully passed the exam.

Future projects could be broadened to involve a stronger focus on the topic of energy efficiency. During the project it became clear that local actors always assumed a constant increase in energy consumption in the future. By specifically supporting energy efficiency measures, this trend could be slowed down. Raising awareness for this topic could thus further contribute to mitigating greenhouse gases.

