

Intermediate project report – PV-Forecast

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Reporting period: 07/2012 – 04/2013

Current state of the project

Since the beginning of the project, the project team mainly focused on the setting up of a basic model for the state-of-the-art photovoltaic (PV) forecast approach, without inclusion of measurement data from reference systems. In order to be sure to use the best available model as a basis for the further development, existing publications on this topic have been studied and the most recent developments were observed. Up to now, this model development is still ongoing.

Concerning solar irradiation and temperatures, the data basis for the model will be the forecasting data provided by the European Centre for Medium-Range Weather Forecasts (ECMWF). The access to ECMWF forecasting data on solar radiation for research purposes has been granted to CRP Henri Tudor end of February.

The team worked further on the post processing of the irradiance data. This includes the downscaling of the forecasting data, as the spatial resolution of the ECMWF data does not correspond to the spatial resolution the researchers are targeting at. Several possible approaches to solve this issue are currently being discussed and prepared to be tested.

The researchers further need to setup a statistical PV model for Luxembourg, representing the photovoltaic systems installed all over Luxembourg. The partners from ENOVOS and CREOS will support the project by providing statistical information on PV systems.

Beside this, the partners provide the contact to PV-systems which might technically fulfil the requirements to deliver online measurement data that is necessary to serve as a reference system in the forecasting model. In a next step, partners need to agree upon a technical solution for the automated data transfer. For some installations, also irradiance data are available online. These data are relevant for the fine-tuning of the PV-forecasting model.

Next steps

Above mentioned measured PV-systems might serve as reference installations, which should be chosen in the next step. If these systems suit the requirements of the project still needs to be checked.

In the coming months the setup of the basic model should be finished, the irradiation data will be implemented into a first algorithm and the post-processing should be defined.

Once CRP Henri Tudor will have some more precise data on the PV-installations, this data will be prepared in order to choose together with ENOVOS and CREOS the installations that will act as the reference systems.

The statistical PV-model for Luxembourg will start to be developed, as soon as the CRP Henri Tudor gets the necessary information on installed nominal power and location for all PV systems feeding into the grid in Luxembourg.