



Christian Maissen



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Topic	Electric solar technology

Developing educational mobile solar demonstration tools

Solar spring fountain



Noam explains the earth's movement around the sun

Introduction: Renewable energy systems play an essential role in providing energy security and in combating global warming. Although there has been a significant progress in increasing the renewable energy share in the global energy production, it is not enough to slow down the climate change. Mobile and attractive demonstration tools are needed to promote renewable energy systems and increase the knowledge of people. The aim of this project is to develop educational tools about solar energy for Scouts International. These will be used to increase awareness among the young generation.

Approach/Technologies: A team of two students (Noam Shahor and Christian Maissen) from the HSR University for Applied Sciences in Rapperswil has developed, planned and implemented an experimental mobile unit. Training materials such as a video, construction manual and a training outline were also prepared and delivered with the unit. After successfully testing the unit, a delegation of Scouts St. Gallen will present them at the sixth National Jamboree of Romania on the 4th-15th August 2017.



Christian explains how the photovoltaic module works

Result: One mobile unit, a solar spring fountain has been constructed. It has a simple design and is attractive for children to play with. The unit shows clearly how electricity produced with a photovoltaic (PV) module can be used directly to run a DC (direct current) pump. The water jet created by the pump depends on the solar radiation amount. Thus, the relation between different parameters as the PV module's orientation, active surface, shading and the produced power can be easily explained. Educational materials for young people have been also developed including a training outline, a video and a construction manual. All the educational materials were successfully tested with a group of children (5./6. grade) from Rapperswil-Jona (Wagen). More functions could be added for future units. For example, a solar thermal collector to demonstrate the conversion of solar energy into heat.



Workshop photo with all participants