

## Press Release

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### PHOTOVOLTAIC ROOFING FOR THE MOTORWAY: INTERNATIONAL PILOT PROJECT LAUNCHED

AIT leads "PV-SÜD": development of a concept and deployment of a demonstrator for the generation of solar energy in road space

Vienna (AIT): Energy generation by photovoltaics (PV) is one of the key technologies for increasing the share of renewable energy sources in primary energy production. However, the use of this technology on a large scale requires the availability of appropriate areas for the installation of photovoltaic modules. These areas would be available in the area of the high-level road network but have hardly been considered for solar use so far.

Although the feasibility in principle could be proven in several projects in Austria, Germany and Switzerland, the use of photovoltaics in road space is currently often focused on the energy supply of nearby consumers - for example in the energy supply of rest areas and tunnel lighting. However, a solar installation in the form of a roof over traffic areas has potentially further positive implications in addition to the actual solar energy generation and the multiple use of the surface: These include, above all, the protection of the road surface from precipitation and overheating, the resulting increased service life of the road surface and the additional noise protection that can be achieved through suitable designs.

#### **Investigation of the added value and practicality of a PV roofing system**

Within the framework of the "PV-SÜD" project cluster led by AIT, the focus is now on two research questions: on the one hand, it is being investigated whether a PV roofing of the roadway offers the hoped-for added value for the road owner in addition to the energy generation, such as the protection of the road surface, and on the other hand, the consortium is investigating the question of whether the solar use of the road space is practicable and can be integrated into the existing maintenance management, for example with regard to maintenance or snow clearance.

Together with the project partners Fraunhofer Institute for Solar Energy Systems ISE and Forster Industrietechnik GmbH, a design for a prototype of such a PV street canopy is being developed in the first part of the project. In the process, an appropriately adapted photovoltaic concept for the application of suitable modules and a matching support structure will be developed that meets all safety requirements and realises as many of the desired positive side effects as possible. This prototype will then be created as a demonstrator in the second part of the project, equipped with measurement technology and scientifically accompanied in operation for one year. In this way, the researchers will be able to investigate how such a construction can meet the diverse requirements of the high-level road network - for example with regard to drainage, wind and snow loads, stability and impact safety, maintenance options and traffic safety. The reliability and durability of the PV elements and the supporting structure, their static suitability and their efficient use are also essential aspects of the research work.

### **Bundled AIT competence in a broad-based consortium**

The AIT is responsible for the overall coordination of the project and is pooling expertise from a wide range of research areas for this pilot project. With the Competence Unit Photovoltaic Systems of the AIT Center for Energy and the Fraunhofer Institute for Solar Energy Systems, two leading research institutes in Austria and Germany in the field of photovoltaics are involved in "PV-SÜD". This ensures that both the current state of the art and research in the field of photovoltaics as well as the experience of both institutes with the realisation of innovative concepts will flow into the project.

A key objective of the "PV-SÜD" project is the analysis of effects beyond solar energy generation. For example, the Competence Unit Transportation Infrastructure Technologies of the AIT Center for Mobility Systems is putting its experience in analysing the properties of transport infrastructure components such as road surfaces, noise barriers, bridges or retaining walls as well as traffic safety at the service of the project. The overall coordination of "PV-Süd" also lies with the Center for Mobility Systems. Forster International, represented in this project by Forster Industrietechnik, contributes extensive experience in the field of traffic engineering and steel construction as well as civil engineering planning, implementation and assembly of structures next to and above roads and is represented in this field in both Austria and Germany.

Project manager Manfred Haider from the AIT Center for Mobility Systems: "The PV canopy is intended to achieve the following goals in particular: (1) energy generation through photovoltaics with the help of suitable PV module technology, (2) flexible use in the high-ranking road network, (3) increase in durability and preservation of the surface properties of the roadway through protection against overheating and precipitation, as well as (4) additional noise protection. These requirements are to be tested in terms of technical feasibility and economic viability and verified on a demonstrator. From the analyses of the concept phase and the measurement data of the demonstrator, we hope to gain valuable insights for the future use of such photovoltaic systems in the D-A-CH region."

The project cluster "PV-SUD" is funded within the framework of the D-A-CH Cooperation Transport Infrastructure Research - 4th Call for Proposals via the Federal Ministry for Climate Protection, Environment, Energy, Mobility, Innovation and Technology (BMK), the Austrian Research Promotion Agency (FFG) as well as the Federal Ministry of Transport and Digital Infrastructure (Germany) and the Federal Roads Office ASTRA (Swiss Confederation).

Further information about the Center for Mobility Systems: <https://www.ait.ac.at/mobilitysystems/>  
Further information about the Center for Energy: <https://www.ait.ac.at/energy/>

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