Project Fact Sheet

Technische Hochschule Ingolstadt
Institute of new Energy Systems

Project Title	**Optimization of the Functionality and Reliability of Thermally-activated Traffic Surfaces (OptiTAV)**
Keywords	Thermal Activation of Traffic Surfaces, Life-cycle Costing, Life-cycle Analysis, FEM Simulation

Project Details

Project Start	2019	**Duration**	2 Years
Grant Scheme	AiF Projekt GmbH		
Funding Authority	BMWi	**Project ID**	ZF4017409RH8
Project Budget	190.000 EUR		
Project Leader	Prof. Dr.-Ing. Markus Goldbrunner		
Contact Person	Katharina Bär		

Project Partners dibauco GmbH (Eichenau), Objekt- und Anlagenplanungsgesellschaft mbH (Plauen)

Description

The conventional way of keeping icy and snow-covered surfaces clear involves a high cost factor, which is caused by the application of road salt and grit. The disadvantage of grit is that it has to be collected after the winter season. Road salt has significant adverse effects on the environment. Despite ecological and economical aspects, both methods of ice control are used. With Thermally Activated Traffic Areas (TAV), a variety of beneficial effects can be realized with good planning, execution, and integration into the existing on-site infrastructure.
The major milestones of project include:

1. Sensitivity analysis based on numerical simulations to identify and optimise the operational parameters for techno-economical and techno-ecological operation of TAV system.
2. Definition of control algorithm and programming of control system for independent functionality of TAV System using sensors and weather forecast.
3. Life-cycle Assessment (LCA) of TAV system to assess the ecological aspects i.e. greenhouse potential, energy consumption of whole system. Life-cycle Costing (LCC) to assess the economical aspects of system, thus development of ISO Standardization based on LCA and LCC.
4. Optimization of the control system and a holistic balancing of the development based on the trails on controller with actual operational and weather boundary conditions.