

Interdisciplinary Project Internship Concept Development of a Renewable Energy System in a Developing Country

Developing a Solar Thermal Energy System for Temple Kitchens in India

In India, temples play a crucial role in social welfare, providing essential services such as free meals to the poor. Many temple kitchens still rely on traditional cooking methods using wood or fossil fuels, leading to environmental degradation and health hazards due to smoke and pollution. This interdisciplinary project aims to investigate the transformation of a temple kitchen from wood or fossil-fuel-based cooking to a system utilizing solar thermal energy for producing hot water and steam for cooking.

The project will explore technical, organizational, and economic aspects of this transformation, offering an innovative solution that reduces the kitchen's environmental footprint while maintaining the vital service of providing free meals to the needy.

Objectives:

- a. Evaluate the current energy usage and cooking methods in the temple kitchen.
- b. Develop an optimized solar thermal system for heating water and generating steam for cooking purposes.
- c. Investigate organizational and economic factors to ensure the system's sustainability and long-term operation.
- d. Reduce the use of wood or fossil fuels, lowering environmental impact and improving kitchen air quality.

Teaching and learning methods:

- a. Energy Demand Profile
- b. Assessing Potentials for Renewable Energy Systems
- c. Modelling scenarios and sensitivity analysis
- d. Economics and Planning of Energy Systems

Notes on registration

If you are interested in participating in this project internship, please do the following procedure:

1. Prepare a short text explaining your motivation for the mentioned topic and your intended contribution to the group work based on the tasks listed above.

2. Get in touch with Deepankar Rane at deepankar.rane@tum.de, with your **motivation text, CV and transcript of records**; only complete applications will be considered.
3. Applications will be evaluated as soon as they are received; early application is worthy, and the deadline for application is **October 8th, 2024**.
4. The selection will be based on your motivation letter, CV and transcripts and will be informed by **October 11th, 2024**.

Please pay attention!

In order to participate in the project internship, it is essential that you write an **email with motivation, CV, and transcript of records** to Deepankar Rane

Organizational matters

Regular weekly meetings are **mandatory** for the project internship. Only in specific cases, it might be possible to use online platforms for organizing the work inside the group and for keeping in touch with the supervisors.