

Team Project (ISE)

 design experiment project theory

Development of an innovative concept for a transportable partial-autarkic power generation unit from renewable energies

General information:

For decentralized applications renewable energies offer great advantages, like no need of fuel and fuel transportation. Furthermore not every household on the world is connected to a power distribution grid. But beyond this huge market there is a second important application area for such devices. Natural or human caused disasters can occur to a breakdown of the power grid. In those cases emergency power supply units were used. Those units have a high demand of fossil fuel. But in case of disasters fuel is rather short. For that reason it would be very interesting to offer transportable partial-autarkic power generation units. An interesting approach would be to develop a transportable partial-autarkic energy generation system in scale of ISO-Containers.

Task description:

Within the frame of this project the team shall develop a concept for a transportable partial-autarkic power generation unit, which only uses renewable energies like e.g. sun and wind. At first a literature study has to be carried out. Based on this a concept has to be developed and predesigned. Therefore every team member has to take a part-task. Part-Tasks could be for example: PV cells, wind turbine, back-up technology and computer-aided design of the overall concept. During the processing period continuous meetings will be hold to ensure the project progress. Finally, the concepts as well as the results will be presented in a written report.

For each sub-task following steps have to be done:

- Literature study and compilation of the state of the art
- Development of concept(s)
- Feasibility study
- Thermodynamic assessment
- Economic evaluation

Requirements:

- Basic of thermodynamics
- Basic knowledge about renewable power generation systems
- Independent, team-oriented and purposeful work

Notes:

The project could be done as well in German, if all team members agree. A team should include at least 2 and at most 4 students.

If interested, please contact:

Dipl.-Ing. Tobias Vogel, Tel.: +49 (0)201 183-7533, tobias.vogel@uni-due.de
Leimkugelstr. 10, 45141 Essen

Dr.-Ing. Gerd Oeljeklaus, Tel.: +49 (0)201 183-7540, gerd.oeljeklaus@uni-due.de
Leimkugelstr. 10, 45141 Essen

Univ.-Prof. Dr.-Ing. habil. K. Görner

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