

08.02.2017

Project INTBIOCHP

Protocol 1/2017

Date and time:

08.02.2017 from 11:00 Uhr to 17:30 Uhr

Participants:

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Agenda

- 01 Introduction of Partners
- 02 German part of the project
- 03 Polish part of the project
- 04 General project structure & conditions

01. INTRODUCTION OF PARTNERS

Silesian University of Technology: Professional experience in plant optimisation. Competence in the field of energy generation technology from combustion systems to nuclear technology. Coordinator, Polish consortium

HFT Stuttgart: Diverse Project activities in the field of research and development. Main competence in building technology and infrastructure management. Proven project experience in the field of renewable energies. Coordinator, German consortium

BIOP GmbH: More than 20 years of experience in the optimisation of biomass plants. Management activities at more than 100 bioenergy plants. Project partner, German consortium

APOS GmbH: Manufacturer of hardware components for optimisation of bioenergy plants. Project partner, German consortium

PROEN Engineering office: Development and design of plant systems and components of plant equipment.

DLR: Project promotion, financial support and project management.

02. GERMAN PART OF THE PROJECT

The pilot plant in Scharnhäuser Park is a biomass CHP plant which works in heat driven mode and supplies an urban area with 10,000 inhabitants with electricity and heat. In such plants in the medium performance range, only controlling equipment which works rather suboptimal can be implemented. As a result of this, the aim of the project is to improve the performance of the controlling system at the plant. For this purpose, a system for the automatic monitoring of fuel parameters will be developed and implemented at the plant. This should lead to an efficiency enhancement of the plant and the perspectives of the system in the free energy market should be improved. In order to achieve this goal, a model predictive optimisation of the controlling system will be carried out in cooperation with polish partners.

An innovative aspect of the project approach is the consideration of the urban area infrastructure analysis within the targeted objectives. The methodology developed within the framework of the project will enable comprehensive analyses of the infrastructure characteristics. Furthermore, the infrastructure weak points can be recognised and upgraded on this basis. Finally, the tool developed in the framework of the project will make it possible to predict future development characteristics of the heat demand.

03. POLISH PART OF THE PROJECT

The pilot plant of the Polish project partners is located in Krosno. The plant is already equipped with the SCADA system for data acquisition. The ORC-module was manufactured by the firma TURBODEN. Some signals and operational parameters seems to be not measured correctly, which may point to deficits in the interaction between the individual systems components. Generally, the plant is an integrated system with individual components based on an interconnection between the biomass plant and coal firing plants, whereby the plants are operated in heat driven mode. The challenge of the project activities is related to the development of a model predictive control system which will take into account the requirements of the individual system components as a part of the overall plant infrastructure.

Historic data from the past 4 years is available at the Krosno plant and can be used to analyse the plant operation conditions and develop models for MPC applications. Epsilon models will be developed for the sensitivity analysis and Matlab models (complete physical models) will be applied for the system simulation.

04. GENERAL PROJECT STRUCTURE & CONDITIONS

Financing

The project financial support can be distributed to the German and Polish partners only if the project managing agency NCBiR officially approves the changes in the project consortium. All necessary documents were submitted by the SUT to the project managing agency on 9 February. The application is currently being reviewed by experts of the project managing agency NCBiR. The entire procedure can take about 6-8 weeks. However, the official approval for the partner exchange can be available already after two weeks.

Annexes to the national (Polish) and international agreements (Consortium Agreement) will be introduced to the project documentation to communicate the partner change.

UAS has the reporting obligation if something changes in the bilateral project consortium, time schedule, objectives and financing conditions.

Reports

The German project reports should be send to the project managing agency DLR semi-annually in German.

Polish partners have to submit annual report to the project managing agency NCBiR.

Joint publications

Joint publications of the bilateral consortium are planned. In this respect, the two universities, which coordinate the project, are in regular exchanges.

Meetings

Regular project meeting are planned as integral part of the project. The project meeting in Poland is expected to take place in Krosno at the plant.

There is another Project at SUT which was founded within the STAIR initiative.

Therefore, there would be a possibility to combine our meetings with another project consortia.