

## **Report on BACID Activity**

### **District Heating Plant on Biomass in Titel, Serbia**

### **Case Study Analysis, Evaluation and Financing Possibilities**

SA Consulting GmbH in cooperation with

- The Municipality of Titel, Serbia,
- The Provincial Secretariat for Energy, Construction and Transport, Vojvodina, Serbia and
- The Faculty of Technical Sciences, University of Novi Sad, Serbia

worked during a three-day event intensively with participants on the topic: „District Heating Plant on Biomass in Titel, Serbia, Case Study Analysis, Evaluation and Financing Possibilities“. The event was carried out in the period from January, 30<sup>th</sup> 2017 to February, 1<sup>st</sup> 2017, at the premises of the Faculty of Technical Sciences of the University of Novi Sad and at the National Assembly of Vojvodina. In total the Event had 37 participants over 3 days.

For details on the Agenda please refer to Annex 1 a to this Report. A list of participants is attached as Annex 2 to this Report.

Our local partners organised the event according to our agreement and worked with us together with the participants. They also organised translators for the presentations on day 2, which were given at the premises of the National Assembly of Vojvodina.

The event was organised in the way of a mixture of lessons and discussions on the one hand and work on the concrete biomass district heating project on the other. The presentations given on day 2 of the Event covered the following topics:

- Introduction Session Project Development
- Investment Preparation Approach
- Bank Institutions and Financing of Investments
- Introduction and Overview of PPP
- Structuring of PPP Models

For details to the presentation material please refer to Annex 3-7 to this Report

Additionally to the presentations and discussions we worked with the participants especially on the District Heating Project for the Municipality of Titel.

The following gives a short summary and description of the project and the main topics discussed:

The Prefeasibility Study for this project has been carried out in 2012 by the University of Novi Sad, Faculty of Technical Sciences. The Study is attached to this Report as Annex 8.

The main idea of the project was to describe and analyse the conceptual design of biomass heating plant and a district heating system. Two possible solution have been discussed: a pure biomass heating plant and a cogeneration plant. It was planned to include 37 building in the centre of Titel into the district heating system, including public, commercial and residential buildings. The proposed investment based on the study is EUR 2,4 Mio for the biomass heating plant and EUR 8,7 for the CHP plant.

The Study is based on data from 2008-2010 and since then no data updates have been done. In the meantime the municipality has taken some energy efficiency measures, such as changing of public lightning or the renewal of windows in public buildings. Anyhow there is no overall energy efficiency plan in place and an overall strategy is missing. The Calculation needs to be updated. The municipality currently has no district heating network. In the meantime also a connection point to natural gas has been established by the national gas provider.

The installation of a biomass plant should help solve 2 open issues in the municipality/region:

- at the moment farmers typically have no idea how to use the available biomass
- biomass power plant is seen as an energy efficiency measure

A new industrial zone is planned that should be also connected to the DH network. A missing link in the project is the possibility how to use produced heat during summer time. An industrial complex in need for heat would be favorable.

Main open topics:

- Energy Efficiency plan missing; focus could be on energy efficiency in public buildings first
- update of Study necessary considering latest data and technological developments
- evaluation of natural gas usage; a combination of gas and biomass could be possible and should be evaluated
- currently buildings are individually heated and there is no DH network
- project could be done in steps starting with energy efficiency measures in public buildings and based on that decide on new heating system
- available biomass needs to be analyzed
- farmers need to be included in biomass considerations

Discussed Next Steps:

- a study on energy efficiency measures of public buildings in Titel shall be carried out
- a study on a possible DH network for 7-10 public buildings in Titel that shall evaluate as fuel biomass, gas or a combination of the two possibilities

- the Faculty of Technical Sciences will estimate cost for such studies

## **Annexes**

Annex 1: Agenda of the 3 day seminar/workshop

Annex 2: List of Participants

Annex 3: Presentation on Introduction on Project Development

Annex 4: Presentation on Investment Preparation Approach

Annex 5: Presentation on Bank Institutions and Financing of Investments

Annex 6: Presentation on Introduction and Overview of PPP

Annex 7: Presentation on Structuring of PPP Models

Annex 8: Pre feasibility Study

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## Pictures taken during the Event



