

# SecureChain: Report from the third Learning Lab in Småland, SE

The third Learning Lab workshop in the model region of Småland, SE was carried out on October 17 2017. Seven persons attended the meeting were three of the four accepted IV-applications was represented by one or two persons. The meeting focused on finetuning of two of the regional initiatives and on presentation and discussions on how to go on with the third initiative. We also focused on further activities and actions for continued fostering of the various investments during the remaining lifetime of SecureChain.

The meeting started in the morning with a guided tour round the main plant for heat and electricity production in Värnamo. The facility is equipped with two hot water boilers which are feeded with forest fuels, mostly chips. These two boilers have a production capacity of 14.3 MW and 10 MW. In addition, it is further extracted 5.5 MW by a flue gas condenser. The third boiler is a combined heat and power generation plant, constructed 2014. It is also feeded with forest fuels and has a heat production capacity of 17.7 MW<sub>th</sub> and additionally further extracted 4.9 MW<sub>th</sub> heat by flue gas condensation. The facility is, in addition provided with a generator with a power generation capacity of 3.6 MW<sub>el</sub>.



Figure 1: The plant in Värnamo. Photo: Värnamo Energi.



Figure 2: Some of the attendees at the RLL 3.

## Introduction

The Regional Lead Partners (RLPs) Göran Gustavsson and Jimmy Johansson started the meeting with a reminder of some basic facts of the initiative SecureChain, the SMEs obligations and what the initiative may offer them, e.g. background, purpose, consortium partners and methodology. The RLPs described other relevant activities going on in the region and invited the SMEs to take part of some seminars during the autumn, e.g. the Bioenergy day Nov 29 and a study visit to a plant for two technologies for small scale co-generation, ORC and wet steam turbine. The RLPs gave a short description of experiences from the recently conducted benchmarking visit, in the framework of the granted third country participation initiative, to the Carpathian region in western Ukraine. Some of the participants of this RLL were involved in the visit the Ukrainian team carried out last spring in Småland.



Figure 3: Swedish stakeholders on benchmarking visit in Carpathia, Ukraine.

The RLPs described the main discussions and conclusions from the partner meeting in Western Macedonia, e.g. the possible prolongation of the initiative.

## Regional status

The present regional status for the initiative was presented with the following main activities:

- All four enterprises have used their approved innovation voucher in 2016 and some of the initiatives have received an additional, smaller, voucher.
- Progress reports have been submitted for all four SMEs.
- Business plans, or similar, have been submitted for the three remaining enterprises.
- Life cycle Analysis have been reported by BOKU for the three initiatives.
- The annual seminar “The bioenergy day” has been conducted and is planned for 2017 on November 29.
- We have organized a regional international partner meeting (April -16) and taken part of other partner meetings e.g. in the Netherlands.
- We have attended, together with a regional stakeholder, a benchmarking trip to Austria.
- Videos for effective extraction of forest residues from clear cutting areas were produced in the beginning of 2017 and have been disseminated in different ways.
- We have applied for, and been granted, means to include the Ukrainian partner FORZA, into the partnership of SecureChain.

## Life Cycle Analysis

The RLPs handed out the full LCA report from BOKU and presented the main findings. The enterprises are eager to know that their initiatives are environmentally sustainable. The findings were clear and expected by the attendees of the meeting.

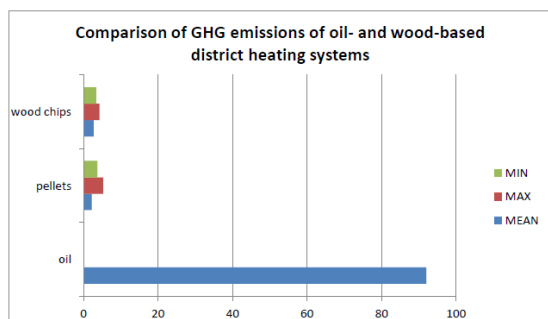


Figure 4: LCA for various fuels for middle scale heat plants.

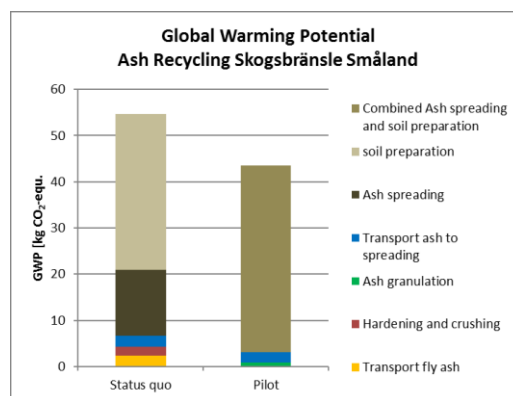


Figure 5: LCA for various options according to the initiative of Skogsbränsle Småland.

## Further possible activities

The RLPs presented possibilities for further activities and actions for continued fostering of the various companies planned investments, like:

- Financial advice to investigate financing opportunities of the investment.
- Certification.
- Knowledge and experience building by the help of conferences, seminars, study trips, etc.
- Take part of other experiences from other model regions in Europe by e.g. a study trip.

## Status of each regional initiative

The representatives of the SMEs have got to learn each other well, which has created an atmosphere of openness to discuss their individual cases and to learn from their experiences during this period of facing various obstacles on their way to a decision for an investment. They gave feed-back and ideas how to facilitate for each of the companies to realize their plans. This learning between enterprises has been extra strong between Värnamo Energi and Lessebo Fjärrvärme during the conducted three sessions of Regional Learning Labs.

Each SME representatives were asked before the meeting to present their individual plans with the main topics:

- How has the innovation voucher been used?
- Result of the consultant voucher?
- Investment plans?
- Obstacles for the investment?
- What means are desirable in order to realize the investment plans?

Värnamo Energi: The project at Värnamo Energi concerns replacement of 14 small boilers with four biofuel (pellets) boilers and expansion / renewal of the grid. The boilers are installed in the smaller communities around Värnamo. The meeting discussed opportunities for connecting new customers, which has been proven to be difficult for Värnamo Energi. The representatives from Lessebo Fjärrvärme said that they offer one year free heat deliveries when new customers are connecting to the grid. For Lessebo, this has meant about 25-30 new customers since the offer was introduced a few years ago. Värnamo Energi was grateful for this idea. The company has received about 29 million Swedish kronor, about Euro 2,9 million, from the Swedish funding scheme for co-financing "Klimatklivet" so they will be able to convert from fossil fuel to pellet burners in four communities around the city of Värnamo. The voucher has been used by a consultant that has made specifications about what kind of burners can be used in each of the communities. The enterprise has applied for a prolongation of the dead-line for the investment. According to the conditions in "Klimatklivet" the implementation must be carried out during 2017, but the decision for co-financing for Värnamo Energi will be valid until the end of 2018. The new grid is already laid out in Bor and Lanna. The new boiler to Lanna will be delivered in the end of October and later on, probably January 2018, in Bor. Värnamo Energi has still the need of a consultant that can help to gain more costumers to the new district heating systems.

Lessebo Fjärrvärme: The enterprise has received another voucher in order to strengthen their knowledge base before a decision on how to secure heat deliveries to the clients of heat in Kosta. The community is growing and a big client, a hotel, is on their way to construct new facilities, e.g. swimming pools. The voucher has been used to hire a consultant for an investigation of the most appropriate ways to solve the problem and to detect constraints in the existing boiler and other equipment. The goal is to avoid to use mineral oil or fossil gas in the fuel mix. The deliveries of heat are complicated because of the big varieties of heat demand from the Christal factory in the community, the demand has a high peak in the morning. The most appropriate way to secure the heat deliveries without any fossil fuels is, according to the consultant, not an installation of a new boiler but instead to install a flue gas condenser. Calculations show that the pay-off time will be approximately 2.5 years. The company is close to a decision for an investment in a flue gas condenser.

Discussions at the meeting concerned procurement issues. The enterprise was offered support from Värnamo Energi regarding this, because of this company's high experience in this regard. The Swedish funding scheme "Klimatklivet" or the county administrative board can be possible sources to

get co-financing for the investment. This possibility is further investigated by the enterprise. Lessebo Fjärrvärme has, in addition to the consultant, got some help from students at the Linnaeus University for the task to detect leaks in the pipes in the heat grids.

Skogsbränsle Småland: The project is about studying the possibilities of making granules of soluble ash from combustion processes. The granules are then thought to be returned to the forest to provide nutrition. A trip to Germany was conducted to study granulation techniques. The current status within the project is to overcome difficulties in finding a product disposal without the possibility of producing the product. Implementing the investment in the production equipment is described as a major risk without the existence of a secured disposal. The consultant has written a rapport about fly-ash to the forest from wood-fuel, how the ash affects the soil and has calculated the expenses for various investments and for various ways to run the granulation / pelletizing equipment. They need means for an enhanced knowledge – and experience base.

### Next steps:

The RLPs stressed the up-coming steps in the project, beside activities previously discussed during the meeting:

- Progress report from each of the enterprise.
- The RLP may contact the enterprises for other documents.
- The various enterprises contact the RLP for their needs to conduct the planned investments.

### Visit in the community "Bor"



Figure 6 Digging under the main road in Bor, for the new grid. Photo: Värnamo Energi.

We took part of a joint lunch and travelled after that to the small community "Bor" to take part, hands on, of the present facility there. The small existing boilers most of them feeded with mineral oil are located to various sites in the community, e.g. the school. The new boilers, feeded with biofuels will be connected via a new grid in the community.

/Göran Gustavsson

Växjö\_SE 20171101