Business model description

All companies builds upon creating a customer value perceived bigger than the cost for the service/product. To be able to profitable create this value the company needs to control and guarantee that the production and distribution costs etc in total is less than the total sales revenues. The figure below illustrates the issues that have to be addressed within a business model*. The answer and outcomes of these issues should be handled within the company's business plan and priorities between actions and allocation of resources.

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<tr><td colspan="3">Internal issues/process</td><td colspan="3">External issues/process</td></tr>
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**See also PDF file: business model canvas.*

The business case – Lundby terminal for supply of mixed bioenergy resources

The demand for bioenergy is increasing and there is today untapped resources that has not yet been utilised to it´s full potential. This is due to high amount of forest residues and security of supply concerns of the buyers (heating plants). Resources like straw, agricultural residues and stumps etc can be utilised in heating plants if mixed with forest residues and stem wood etc. This utilisation would give the farmers and forest owners additional incomes and the heating plants a wider range of material and suppliers.

Lundby Maskinstation is a company with agricultural machinery and logistics as is services. It is situated in an area with resources both from forest and land. In addition they own a farm of 500 hectare forests and 100 hectare agricultural land. In addition they own and operate a number of trucks for transports of bulk material to end users such as heating and biogas plants.

Today the company has 3 terminal sites for storage of wood chips and limestone etc with space for expansion. They want to include new bioenergy resources such as straw, stumps and agricultural residues.

The business idea is to develop and demonstrate a fuel supply chain of mixed bioenergy supplies from forest/land to the consumer. The consumer shall be able to individually specify there needs and requirements on the fuel based on boiler type, fuel handling system etc.

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Key Partners

Key partners in the development and implementation in the business model are:

- Local land and forest owners
- Forest harvesting contractors

Their motivation for partnership and involvement is additional revenues from their forest and land as well as higher and more cost efficient outtake of bioenergy resources from the forests and land.

Their involvement is vital due to the end consumers wishes of longer contracts and quality criteria's on supplied fuel. It is also very important to involve them to ensure that outtake and handling of the fuel is made in consideration to sustainability and cost effectiveness throughout the value chain. For example to only retract stumps on suitable soils, utilising cost efficient methods to harvest straw for energy purpose (instead of as today – for animals) and also fertilisation through ash recycling.

Other parties that has to be addressed and communicated with are regional heat plants/utilities as well as authorities and advisors/consultant within the agricultural business.

All larger heating plants in the region has been mapped and contacted. Several of them are interested of additional suppliers and a wider scope of biomass resources and assortments. These pioneers are important for testing and validating the supply chain and also serve as reference cases.

The Machinery Ring is an important partner to be able to adapt to larger volumes during shorter period of time, e.g. the harvesting period for straw and chipping of forest residues in the forest.

Key activities

General activities to set up the supply chain includes:

- Develop and make the supply chain cost efficient
- Planning of activities on annual basis and budgeting
- Continuous evaluation and follow up
- Demonstration activities for suppliers and buyers

The key activities are to:

- address forest owners and farmers to be able to set up annual or longer contacts for different types of biomass such as straw. Volumes and prices as well as time for outtake/delivery from land and forest
- identify buyers and their respectively need and requirements of fuel in terms of moisture content, ash content etc based on their boiler an fuel handling systems. In some cases fuel and mixes has to be tested to prove functionality
- set up contracts with buyers based on fuel mix parameters, volumes and prices

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Key resources

The key resources are the following:

- Existing machinery and vehicle park
- Well- established communication and contracts/agreements with forestry harvester and farmers within the region
- Supply contract with regional heating plants and utilities incl. volumes and prices
- Well developed terminals suitable for mixing of fuels and storage until delivery

Cost structures

The cost structure for this business model involves:

- Purchase of the biomass
- Harvesting and transport to terminal
- Terminal handling and mixing of fuels
- Transport to customer
- Fixed cost for machinery and property

The most important of the above is the price of the different fuel categories

The success is strongly depending on utilising fuel that today is not considered as bioenergy assets based on no link between owner and consumer and/or difficulties of sales unmixed and not dried.

The business model is cost driven and characterised by economy of scale and cost efficient operations throughout the value chain. The activities involved has little impact on end costs.

Value proposition

The value proposition is the flexibility of buyers to purchase mixed bioenergy fuels at lower price than todays use of forest residues alone.

The deliveries are carried out on just in time basis avoid storage and handling costs on site.

Seasonal bioenergy outputs that has less price and lower possibilities to be used directly due to low heat load or fuel characteristics can be utilised over a longer period and suited for their situation.

This sector is more or less driven by lower cost on fuel and maintaining a high operational output without wear and maintenance on boiler and fuel handling system. The value thus has to be able to ensure:

- Lower cost than the current alternative
- Same O&M level at customer

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Costumer relationships

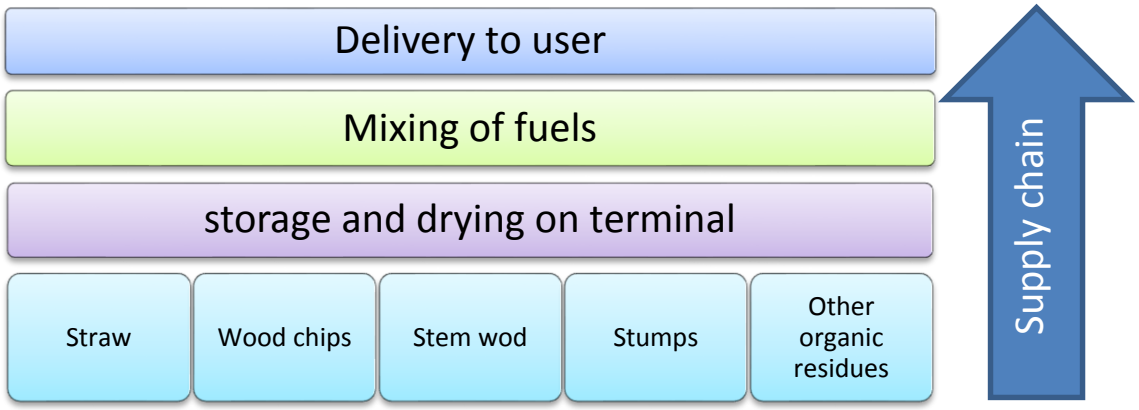
The costumer relationships have to built on security of supply and quality assurance. Thus the fuel mixes has to be proven and demonstrated before long term agreements can be made.

This means that it is more important to have fewer customers with higher volumes than more customers with lower volumes.

Transparency of the entire supply chain is crucial. Both in terms of quality assurance in fuel supply as well as sustainability and environmental concerns.

Channels

The distributions channels or supply chain is described in the illustration below.



All stages in the supply chain are handled by Lundby Maskinstation. The customer does not have to arrange for own storage, drying and the forest harvesting entrepreneur and farmer does not have to arrange with collection and delivery to user.

In addition ash recycling can be added as a further service to the user (heating plant).

Costumer segments

The costumer segmentation is based on the following:

- Geographical distance from the bioenergy terminal in Lundby (appr. within 100 km)
- Ability to used mixed bioenergy fuels (technical possibilities)
- No ability to use waste as fuel (technical and environmental permits)

Revenue streams

The revenue streams is based on dynamic pricing in terms of energy content within specified parameters of the fuel as moisture content etc. The end price includes all cost for transport, storage etc.

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