Outlook on the Nordics and Baltics
wood chip and wood pellet markets - challenges and opportunities
The outlook for biomass consumption and production is strong in the Nordic and Baltic areas, with the geographical proximity of the Baltic producer region to the mainly consumer area of the Nordics supporting international trade growth.

Net exports of wood pellets from the Baltic region — principally Estonia, Latvia and Lithuania — climbed to 2.91mn t in 2017 from 2.62mn t a year earlier, despite severe raw material shortages in the latter part of the year.

The bulk of the export growth was in the third quarter of 2017, particularly driven by Estonia. But by the fourth quarter last year, the Baltic region’s exports had fallen compared with year-earlier levels, and the decline continued into the first quarter of 2018.

Flooding in the forests from around August onward hampered access to logging sites, and the ground did not freeze as early as it had in some previous winters, further delaying access. Once the ground had frozen and raw materials were accessible again, there was competition from other wood fibre industries including pulp and paper and fibreboard. And such, raw materials that were available to the wood pellet and wood chip-for-energy producers were heavily waterlogged, requiring significant time and energy to dry sufficiently.

The problems accessing the forests meant that raw material prices rose sharply last winter. The raw material price for biomass was 19.4pc higher year on year at the end of March 2018, according to Estonian state-owned forest management centre RMK. This in turn helped to support fob Baltic spot prices in winter 2017-18. The Argus fob Baltic spot price averaged €125.19/t during that period, compared with €96.68/t the previous winter. Baltics producers have said that raw material prices have grown stronger year on year into the summer.

But the higher fob Baltic pellet spot price was in line with rising wood pellet prices in other regions, amid growing European demand. Virtually all exports from the Baltic region are shipped to European markets, where demand has risen over the past year because of new demand projects, especially in Denmark, which is well positioned for Baltic shipments. A colder winter across much of Europe compared to recent years also lifted heating demand. Heating demand is particularly relevant in Nordic markets, especially Denmark, whereas projects in western Europe tend to be focused on power generation.

Wood chip prices have also been supported by last winter’s feedstock shortages. Wood pellet and wood chip producers compete for raw materials in the Baltic region and elsewhere, meaning higher prices in one market are likely to lead to higher prices in the other.
Nordic countries' net wood pellet imports reached 2.72mn t in 2017, up from 2.1mn t in 2016, with much of that supply coming from the Baltic region. That is on top of a combined installed wood pellet production capacity of around 3mn t/yr across Denmark, Finland, Sweden and Norway.

Biomass demand is also expected to increase. In the Nordic region, at least a further 600MW of wood chip demand capacity is scheduled to become operational by the end of next year, with further projects planned for the coming years. Among the largest are Hofor’s 150MW Amager heat and power plant and Orsted’s 142MW Asnaes heat and power plant, both expected to be operational next year.

Domestic biomass consumption has been rising in the Baltic states. At least 136MW of biomass demand capacity is expected to come on line by the end of 2019, principally wood chip demand in Lithuania.
What are the trends for recycled wood to energy in the biomass industry and where do you see future opportunities?

Structural changes in the waste wood industry are creating a huge impact on the sourcing strategy of production plants. In light of large-scale legislation changes in terms of subsidies and other strategic European energy directions, the need for an alternative fuel in biomass is critical because of expected high demand in the biomass sector within the next few years. The huge increase in demand in a number of European countries and the traditional import sourcing into Scandinavia from one or two countries is no longer possible. The sourcing of recycled wood in Europe will become more complex and depend on logistical costs.

The opportunity will be driven by many factors on pricing of waste but also legislation. We will see a trend of strategic sourcing points in Europe, which are logistically accessible and have a long-term waste framework.

Where do you see competition for waste wood from other industries?

Most competition is from the panel board industry, which is building large-scale plants in eastern Europe.

Recycled wood waste has four dimensions so we can apportion a number of waste streams to a number of industries. As Europe has no clear definition on waste wood grades and the markets are mostly defined by quality there are different competitors in the market.

Clean wood is directed to the panel board industry, which takes most of the material for processing. Demand is growing in eastern European countries but at the same time demand is decreasing in traditional markets such as Italy and Belgium. Some quantities are delivered to power plants depending on location.

Hazardous waste wood mostly goes into cement kilns or combined heat and power (CHP) plants. We have seen legislation changes to expand capacity in western Europe. Also, trials have begun for existing plants that normally burn fuel-grade waste wood.

In between these two are a further two grades, which depend on sorting at recycling centres in the country of origin. Industrial feedstock is used in the panel board or energy industry. Demand for this material is increasing. And new furniture manufacturers try to feed 100pc waste wood into their production. Also, a number of plants have already been commissioned in different EU countries in new and traditional markets, as well as increased capacity of existing plants. In this energy fuel, depending on the quality, competition is rising from the panel board industry in eastern Europe.

Do you face any unique challenges in the region?

The UK as a traditional exporting country has built plants that increase consumption by an additional 2mn t. This is causing a major change in sourcing strategy for importers to Scandinavia. The UK has started to accept first vessels and has entered the European market but at the same time decreased export volumes. This is a challenge for the overall import market.
How is Returflis improving trading and logistics across the supply chain?

As an innovative leader on trading in Europe in recycled wood we continuously try to find new sourcing partners and countries. Having back-up storage in a number of strategic locations to cover the tonnages for our end customers sets an inventory challenge owing to fire prevention regulations set by the environmental protection agency. We also have an anti-cyclical buying behaviour that needs to be balanced during the year. Our strategy is to include our own storage areas in the country of source as well as the country of demand. Additionally, we have made strategic partnerships with municipalities and built up export markets in different EU countries.

Are there any new projects that Returflis is working on?

We particularly want to drive co-operation with institutions to establish a European network for exports of wood waste as generally the entities focus on either waste or biomass.

We have some projects under way with major plants in a number of regions. But these are confidential at present.
Can you tell us what exciting new projects AEBIOM is currently working on?

In February 2017 AEBIOM started a research with the purpose of investigating the state of solid biomass in Europe, in particular focusing on the quality aspects.

As for pellet, the certification ENplus significantly increased the quality of the product on the European market and, thanks to the network that has been built, AEBIOM has the possibility every year to elaborate accurate statistics on the pellet sector. The same cannot be said for wood chips, for which quality is not ensured by the European scheme. Similarly woodchip statistics are hardly available, except from some few national cases.

There is a lack of quality harmonisation in the wood chips production in Europe, but on the other hand market is very large, growing and becoming more international through trading. These were the reason for AEBIOM to initiate a quality certification for wood chips: GoodChips®. GoodChips® is the first European, common and recognised system for the certification of the quality of wood chips.

In line with AEBIOM’s mission, we want to develop and promote the technical quality of the European bioenergy industry and the growth of biomass consumption. We cannot seeing this growth happening without an harmonization of the understanding of quality in order to facilitate increasing cross-border trade.
What is your overall outlook for the wood pellet market in the Nordic region to 2020?
More than 4.5mn t of pellets were used in the Nordic countries in 2017, mainly in Sweden and Denmark. Denmark consumed 2.2mn t, with two-thirds going to combined heat and power (CHP) and one-third used for residential and commercial heating. In Sweden, usage in recent years has stagnated at around 1.7mn t, of which one-third is used as CHP and the remaining two-thirds as residential and commercial heating. Both Sweden and Denmark depend on imports to meet demand, taking product sourced mainly from the Baltic states and Russia.

In Norway and Finland, wood pellet use is still marginal. But the long-term perspective for these markets is positive thanks to growing pellet use with plant investments and a growing mid-scale sector.

The Nordic countries are forerunners when it comes to switching from fossil fuel energy to renewables. In Sweden, more than half of all use of energy comes from non-fossil fuels. Bioenergy is by far the largest energy source, accounting for 37pc of all energy used. This includes heating, cooling, transport and lighting.

Although market development has slowed in recent years, there is a political unity about continued conversion to renewable energy. Within the next few years, we see a growing demand for bioenergy in commercial heating and as a combination system with heat pumps in the residential market.

Why is Sweden at the forefront of renewable energy?
Although Sweden from the beginning was high in renewable energy use, we have been able to increase substantially beyond the goal. There are several explanations. We have a great expertise, especially in bioenergy, which allows us to move from residential heating and district heating to conversions in the industry and the transport sector. We have had a broad political consensus, and that is obviously supporting the companies and municipalities to work on the climate issue.

Our success is based on the fact that Sweden put a price on fossil fuel carbon emissions as early as 1990. The introduction of a high-carbon tax was supported by brave politicians from both the right and left wings standing up for this decision. Our carbon tax today is €110/t CO2, which is four times higher than in any other country and 25 times higher than the price of emissions in cap and trade.

It was a smart move to give priority to increasing fossil fuel energy costs. By investing in the "polluter pays" principle, money flows into the government instead of grants causing money to flow out. High pricing on fossil fuel energy provides competitor advantages for all renewable energy.
This act gives the result that all renewable energy competes on equal terms, which develops
the whole renewable industry. Using locally produced energy creates lasting jobs and
money stays in the local economy.

Are you facing any unique challenges in the region?
We face two major challenges for the future. The biggest challenge is in competition with
electricity-based heating systems, as electricity prices in Sweden in particular are extremely
low at present. And there are policy instruments aimed at increasing the use of electricity for
heating, cooling and transport. The second challenge lies in increased competition for raw
materials and environmental groups’ criticism of the use of biomass for energy purposes.

In terms of future electricity price developments, we can predict rising prices in the next few
years, as electricity consumption will increase while Sweden has decided to shut down four
nuclear reactors by 2022. This is particularly true of electricity used for heating during our
cold season.

As regards the availability of biomass for energy purposes, we experience increased
competition from the petrochemical industry as well as from alternative uses such as
textiles. This competition drives up the price of prime raw material sawdust, but at the same
time opens up for pellet production of other biological residues.

Scandinavian countries are forest-rich and almost all uses of biomass for energy purposes
are sourced from residues falling within the forest industry, but bioenergy is questioned by
environmental groups. Their lobbying about biodiversity, deforestation and hesitant use of
climate has led to increased use of bioenergy being questioned by leading politicians.

How can ÄFAB and the Swedish Pellet Association affect supply chains
in other countries?
No country in Europe has been so successful in transitioning its energy supply to
renewables as Sweden, according to the EU’s renewable league. This is based on recent
statistics from Eurostat on how EU countries are succeeding in efforts to achieve the
renewable targets formulated in 2009 and those for 2020. The report comes from 2015, the
last year for which the EU has complete statistics.

Sweden is by far the best in terms of the share of renewables in total energy use, and in
relation to the target. Already in 2012 we exceeded the EU target of 49pc, and in 2015 we
were at 53.9pc, according to Eurostat. In May 2018 the International Energy Agency reported
that it expects Sweden to have a 57-59pc share of renewables in energy use by the year
2020. That is up 10% above target.

Sweden is also the best in terms of renewable energy in the transport sector. We stayed at
18.6pc last year.

We can prove that it is possible to make a difference. And if we can we make a difference
in Sweden, many other countries should be able to do the same thing, if only the will and
political courage exists.

www.argusmedia.com/biomass-nordics-baltics
Argus Nordics and Baltics wood chip and wood pellet markets 2018 survey results: Opportunities and challenges in 2018 and beyond

Company type of survey participants

- Utility/District heating company: 26%
- Trading company: 18%
- Wood chip supplier: 12%
- Pellet producer: 10%
- Technology/Equipment company: 9%
- Association or government: 8%
- Broker/Exchange: 5%
- Forestry owner: 4%
- Consultancy: 3%
- Pellet boiler manufacturer: 3%
- Logistics (Shipping, Storage, Ports): 2%

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Q2

In your opinion, what is the biggest challenge facing the biomass industry in the region?

- Difficulty in accessing raw material from forests: 14%
- Competition for raw materials from other industries: 33%
- The recent increase in wood chip and pellet prices: 5%
- The need for better infrastructure for biomass trades across the region: 5%
- Lack of clarity over regulations and sustainability: 24%
- Lack of standardisation within the region and wider Europe: 6%
- The need for competitive technology: 13%
Q3

How is your company tackling this issue?

27% Looking at new sourcing strategies

25% Looking to build new long-term partnerships

19% Working more collaboratively across the supply chain

12% Identifying new wood chip or pellet demand across the region

10% Investing in new technologies

7% Evaluating M&A's and/or joint venture agreements

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Where do you see the most investment in the market?

- New greenfield plants for production and biomass facilities: 31%
- Increasing capacity for biomass production: 24%
- New technologies for biomass conversion: 19%
- Joint venture agreements and/or M&As: 16%
- Commercialising black pellets: 10%
Q5 What is the 1 critical success factor for growth in the region?

- Higher electricity prices and better understanding of bioenergy additional uses
- Competition with pulp industries and competition with renewable liquid fuel manufacturing
- Stable supply of raw material: Decrease the price and increase quality of the biomass, Access to cheap feedstock, Avoid dual market as per SBP compliant and non-compliant
- Political/regional measures for forest cleaning in an economically sustainable way
- Availability of pellets
- Increase transparency
- Avoid overlapping between procurement activities of wood chips and the raw materials sourcing by pellet
- Political decisions in favour for biomass instead of other energy sources
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<tr>
<th>Question</th>
<th>Answer</th>
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<td>How do you see the new and planned pulp and bio-product mills in the region impacting the pricing of raw material in the region over the next 5-10 years?</td>
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<td>How do we deal with the negative criticisms from the environmental movement?</td>
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<td>What is the lower target price for wood chips?</td>
<td>When will regulations across the EU be aligned to avoid five different laws and strategies in five different EU member states?</td>
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<td>What’s the business case for power stations running on wood chips if GJ per mt surpasses pellet one? Will they burn pellets or are there storage / logistical / operational limitations for a switch?</td>
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<td>How can we reduce the energy consumption and the cost of logistics in the biomass supply chain?</td>
<td>How can we improve the public image of biomass?</td>
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Argus Biomass Nordics and Baltics 2018

29-31 October, Copenhagen, Denmark

An esteemed panel of expert speakers including:

- Michael Christensen, Chief Operating Officer, CM Biomass Partners
- Māris Ziediņš, Managing Director and Board Member, SBE Latvia
- Søren Alsing, Head of Fuel, Bioenergy & Thermal Power, Ørsted
- Valentas Rutkauskas, Project Manager, UAB Vilniaus Kogeneracinė Jėgainė
- Shamsher Khan, Vice President, Asset Optimisation and Energy Trading, Stockholm Exergi
- Michael Persson, Head of Secretariat, Danish Bioenergy Association
- Vilma Gaubyte, Director, Litbioma
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Promoting long-term regional partnerships across the biomass supply chain

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