SKOGSSTYRELSEN
SWEDISH FOREST AGENCY

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Market Statement 2018 – SWEDEN

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General Economic Trends

The Swedish economy will peak this year, and GDP growth will slow next year. Capacity utilisation in manufacturing is at historically high levels, and housing investment is high as a share of GDP. A strong labour market is also good for the households, who can expect wage growth to pick up somewhat. Next year, the economy will slow slightly as growth in both manufacturing and housing investment falls sharply, but external demand will limit the slowdown.

The strong investment climate in the US and the euro area is good news for Swedish exporters, many of which focus on capital and intermediate goods. Swedish exports are therefore expected to grow slightly faster than Sweden's export market next year and make a major contribution to GDP growth

The upswing in exports in the second half of this year and next year means that industrial production will continue to grow strongly during the period. Capacity utilisation in the manufacturing sector has increased gradually in recent years to historically high levels

Housing investment has soared in recent years to its highest since the early 1990s as a share of GDP. In the second quarter, however, housing investment fell back somewhat in the wake of the drop-in housing prices that began in the autumn of last year. Although housing prices seem to have bottomed out, housing investment is expected to continue to decline during the rest of this year and next year, with lower prices reducing the profitability of new developments. The decline will be limited, however, partly because there is still a strong demand for new homes. There is a not insignificant risk that housing prices will fall further.

Employment growth is forecast to continue to slow for the rest of this year and next year. It is worth noting that the service sector will account for virtually the whole of the increase in employment next year. The slowdown in job creation and a major influx of immigrants into the labour force mean that unemployment will not fall much further from the current level of 6.2 percent. The combination of major shortages of labour with the desired skills and a very high number of vacancies suggests clear matching problems in the labour market and that resource utilisation in the labour market is high.

At the time of writing Market Statement, there is no new government after the election in place and the current government is continuing as caretakers, A budget bill for 2019 will be presented by the new cabinet when it takes place. Therefore, in this year's Market Statement there is more focus on the new Swedish Strategy for National Forest Programme (NFP).

Strategy for National Forest Programme (NFP)

On the 17th of May 2018 the Swedish government adopted strategy for NFP. At the core of the programme is broad stakeholder dialogue about the role of forests in a sustainable society and a growing bioeconomy. Sustainable management and conservation of the country's forests should not only be a domestic issue, but also a priority for Swedish-international cooperation.

The Government's vision of the NFP is "Forest the green gold shall contribute to employment and a sustainable growth throughout the county and development of a growing bioeconomy".

The new strategy, which is the first of its kind, focuses on five target areas[1]:

1. Sustainable forest management integrated with climate change policy.
2. Multi-faceted use of forests for more jobs and sustainable growth across the country.
3. Innovation and world class processed raw forest materials
4. Sustainable management and conservation of forests as key areas for Swedish international cooperation.
5. An expansion of the knowledge base for sustainable management and conservation of forests.

Developing the strategy of the Forestry Programme has been a work in progress since 2015, and different stakeholders have contributed to developing a cohesive vision. In July 20018 the Government decided on an action plan to implement the Swedish forest Programme. The action plan comprises a total of 75 actions. A detailed description of major actions could be found in annex 1.

Progress Monitoring and Development

The action plan will be updated on regular basis. Regular follow-up and evaluation of strategy and Action Plan to be made until 2030.

One of the world's first fossil fuel-free countries

The Government has announced that Sweden will be one of the world's first fossil fuel-free welfare nations. To this end the Government has launched an initiative that brings together stakeholders from industry, municipalities, regions and organizations from across the country. They have also taken several measures to reduce emissions, speed up the transition to a sustainable society and achieve the environmental quality objectives. Among other measures, the Government proposes increased support to climate investments and urban environment agreements that strengthen public transport and promote cycling. The Government is also raising its level of ambition in the climate area by buying and cancelling emissions allowances and pushing for EU policies striving for greater reductions of fossil fuels.

[1] Official translation of the strategy and targets are not final at the time of drafting the market statement, hence this is the Swedish Forest Agency's initial translation.

Eco-tourism on the rise

The tourism sector is one of the fastest growing economic sectors in Sweden. Tourism accounted for SEK 317 billion in Sweden in 2017. Tourism's share of the Swedish economy was largely unchanged at 2.8 per cent of GDP but continued to grow in relation to Sweden's total exports and employment. The main driving force is a strong continued increase in foreign consumption. The sector is expected to continue to grow at a rate of about 3 % per year until 2030. In 2017, the effects of tourism on people in employment in relation to total employment trends in Sweden were also strengthened. The number of employed increased due to tourism by almost 10,600 persons to a total of 175,800. This corresponds to an increase of 6.4 percent, which compares with Sweden's total employment increase for 2017 of 2.3 percent. Even though nature-tourism only represent a minor part of the total tourism sector (6 %) it has big untapped potentials and is an important contributor to regional development and community employment. Several operators report on a steady increase.

One barrier has been the increasing conflict between tourism operators and landowners. This is spurred by increasing pressure from tourism entrepreneurs to use private land for their activities. This goes beyond what is recognized in the ancient Swedish right of public access which entitles people to pick berries, gather mushrooms, camp and pursue outdoor recreational activities regardless of forest ownership. To overcome this barrier, a national project including both tourism entrepreneurs and landowners has recently been established. The aim is to developing guidelines and contractual models that can be used when settling agreements between entrepreneurs and landowners. The contract could include provisions for compensating damage, sharing profits or combining both entrepreneur and landowners' businesses, e.g. catering, lodging etc.

Climate

Sweden's climate strategy consists of objectives, policy instruments and measures, together with regular follow-up and evaluation. In June 2017, a new National Climate Policy Framework, ensuring long term order and stability in climate policy, was adopted by the Riksdag (Swedish Parliament).

The Swedish government are active in the international climate negotiations and in the EU to produce regulations that benefit the forest's long-term role in climate efforts. Use of forest raw materials for wood products as well as bioenergy (incl. biofuels) while increasing uptake of carbon in growing forests can be achieved by sustainable active forest management as e.g. in Sweden.

A long-term growth in the forest is a prerequisite for higher removals to meet demand for renewable bio-based products. It is also important that the increased removals do not cause negative effects on biodiversity and that further acidification of forest land are avoided. However, it is more likely that biodiversity will be affected if we do not reduce, mitigate and adapt to climate change effects.

The Climate Act

The new Climate Act was introduced on 1 January 2018. The Climate Act legislates that the Government's climate policy must be based on the national climate targets and specifies how the work should be carried out.

In its Budget Bill, the Government must submit a climate review to the Parliament every year. The climate review must contain:

- A report on emissions development.
- A report on the key political climate decisions taken during the year.
- An assessment to identify the need for additional policies and measures, and when and how decisions about such policies and measures can be adopted.

Every fourth year, the Government must develop a climate policy action plan which provides information on planned policies and measures to achieve emission reductions.

Climate Policy Council

The climate policy council will provide independent assessments of how the overall policy presented by the Government is compatible with the national climate goals.

National objectives and targets

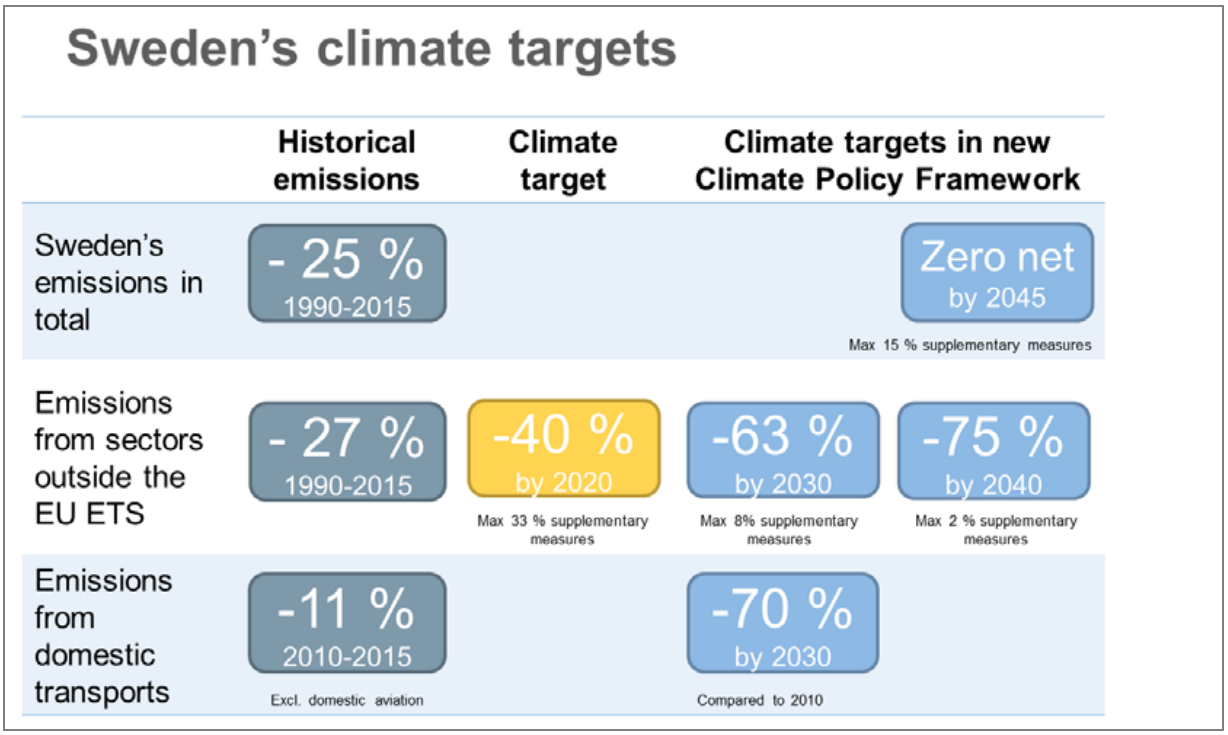
GHG emissions and removals (for the plan covering the period from 2021 to 2030, the 2030 Framework target of at least 40 % domestic reduction in economy-wide greenhouse gas emissions as compared to 1990).

Sweden's national targets

By 2045, Sweden is to have no net emissions of greenhouse gases into the atmosphere and should thereafter achieve negative emissions. This means emissions from activities in Swedish territory are to be at least 85 % lower by 2045 compared with 1990. Supplementary measures may count towards achieving zero net emissions, such as increased uptake of carbon dioxide in forests and land, and investments in other countries. International accounting guidelines will be followed for this.

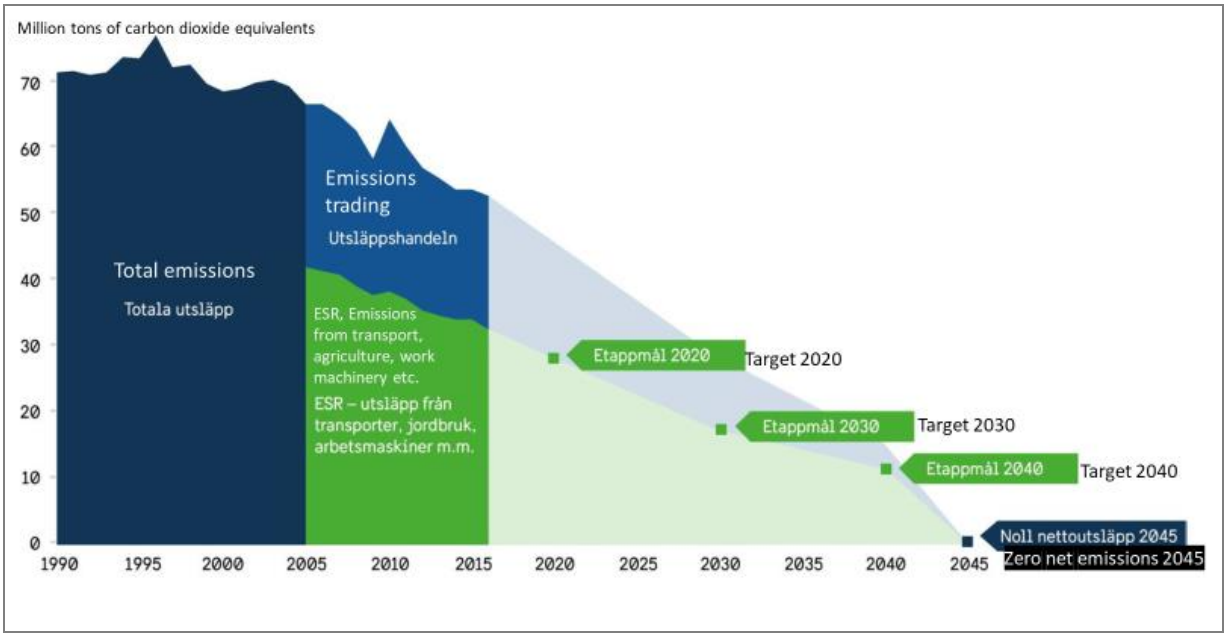
- Emissions in Sweden outside of the EU ETS should, by 2030, be at least 63 % lower than emissions in 1990, and by 2040 at least 75 % lower. To achieve these targets by 2030 and 2040, no more than 8 and 2 percentage points, respectively, of the emissions reductions may be realised through supplementary measures.
- Emissions from domestic transport are to be reduced by at least 70 % by 2030 compared to 2010. Domestic aviation is not included in the goal since this subsector is included in the EU ETS.

Figure 1 Sweden's national climate targets



Source: Swedish Environmental Protection Agency.

Figure 2 Long term emissions of Sweden



Source: The Swedish Climate Policy Council

Policies promoting Swedish forests role in climate change mitigation

Swedish forest policy has two overarching objectives, a production objective and an environmental one. According to the latter biological diversity in the forests must be preserved. At the same time, the cultural heritage must be safeguarded, and social aspects must also be taken into consideration. Though government initiatives such as the national

forest programme a process for dialogue regarding forest matters have been created. One many question raised in the dialogue concern sustainable forest management and how to meet the growing demand for renewable bio-based products from the forest. Existing legislation also indirectly affects trends in carbon removals in various ways, through provisions on forest management in the Forestry Act, the land drainage provisions of the Environmental Code, site protection and nature conservation agreements. Furthermore, because of the sectoral responsibility that applies in Sweden, most of the country's forest owners have joined voluntary certification schemes, which are designed to raise the level of ambition about the ecological, economic and social aspects of forestry. More land being set aside, resulting in increased carbon storage in forest.

Renewable energy

Agreement on Swedish energy policy

The climate target described above naturally has consequences for the share of renewable energy, but Sweden has no explicit target for renewable energy by 2030**.**
However, the Energy Policy Commission has proposed a sector specific target of

- By 2045, Sweden is to have no net emissions of greenhouse gases into the atmosphere and should thereafter achieve negative emissions.

- By 2040 Sweden is to have 100 per cent renewable electricity production. This is a target, not a deadline for banning nuclear power, nor does mean closing nuclear power plants through political decisions.

- By 2030 Sweden is to achieve the goal of 50 per cent more efficient energy use.

The Swedish level of electricity interconnectivity is 26 %, as of 2017, and is expected to increase to approximately 28 % by 2030, i.e. well above the Union objective of 15 %.

Sweden is to reach its 2030 renewable energy target of 18 TWh on wind energy by the end of the year 2018.

Renewable energy policies and their impacts on forest products markets

Most important for the on-going replacement of fossil fuels with bioenergy are the carbon tax and the renewable electricity certificate system. Energy policies will have an impact on biomass demand and its competition in different energy sectors. Renewable technologies are being used in Sweden across all sectors, and there is a strong correlation between economic growth and reductions in waste and greenhouse gases

Carbon dioxide tax and energy tax in agricultural, forestry and aquaculture sectors

The agriculture, forestry and aquaculture sectors pay 30 % of the general energy tax rate. The sectors have also had reductions in the carbon dioxide tax, which have been reduced in steps and will be totally rescinded by 2018.

A special reimbursement for carbon dioxide tax on diesel for machinery in agricultural, forestry and aquaculture activities were lowered in a stepwise manner from SEK 2.10 per litre (2011) to SEK 0.90 per litre in 2015. However, in 2016 the repayment was increased to SEK 1.70 per litre for the period until the end of 2018, when the repayment will be SEK 1.43 per litre.

Government stimulus: ROT

New regulation for ROT from January 1, 2016

The tax deduction on labour work repair, renovation, extension and maintenance on houses (ROT) is still applying. Though the government passed a new regulation which reduced the possibility to deduct of labour cost (30 percent as opposed to 50 percent which was the earlier upper limit).

The ROT deduction also serves to reduce energy use through covering several measures for saving energy in households. The measures have mitigated the effects of the economic crisis and improved the conditions for a gradual recovery of construction sector. The ROT deduction measure is also a part of the government's efforts to enhance labour market policies, reduce illegal employment and improving demand in the construction sector. ROT payments have increased steadily each year since their introduction in 2009. The ROT payments, increased last year, much higher than previous years, which is assumed to be due to the deduction of the ROT was reduced from 50 to 30 percent at year-end.

Generally, there is more wood used in ROT. A possible effect of the deterioration in ROT deduction should not be ignored, even if small reductions mean relatively large volumes of wood. According to Swedish Forest Industries Federation wood consumption in Sweden overall continues to increase.

Swedish Tax Agency office paid SEK 9.3 billion in 2017 for tax reduction for ROT. This was a decline by 13 percent compared to 2016 due to ROT reduction from 50 to 30 percent in 2016. During the first eight months of 2018, compared to 2017, there is a very slight increase in ROT payment by 0.4 percent. ROT has a positive effect on the domestic demand of sawn wood.

Rural Development Programme (RDP) 2014–2020

The European Commission has adopted a "Partnership Agreement" with Sweden setting down the strategy for the optimal use of European Structural and Investment Funds throughout the country. Today’s agreement paves the way for investing €2.1 billion in total Cohesion Policy funding (from the European Social Fund and the European Regional Development Fund) over 2014-2020 (current prices, including European Territorial Cooperation funding and the allocation for the Youth Employment Initiative). Sweden also receives close to €1,763 million for rural development and €120 million for fisheries and the maritime sector. The EU investments will help tackle unemployment, boost competitiveness and economic growth through support to innovation, training and education in cities, towns, rural and coastal areas. They will also promote entrepreneurship, fight social exclusion and help to develop an environmentally friendly and a resource-efficient economy.

The total budget for the forestry in RDP for the period 2014 - 2020 is some SEK 280 million. The three-forestry support is included; i) skills development, ii) forest environmental values and iii) way of cooperation. Support for training and advice has a budget of some SEK 100 million and focuses on efforts that contribute to sustainable forest management, including forest's impact on water, prevent the effects of climate change and reducing the environmental impact of the forest. In support of the environmental values of forests the budget amounts to some SEK100 million and include measures to thinning for broadleaved and deciduous forests, management of natural and cultural values in management-intensive stands and clearing around paths and trails. Within collaborative support with a budget of SEK 80 million for example, planned collaboration on forest roads, border issues within forest, wildlife management and adaptive forest management. In addition, there is a further support, "Prevention and restoration of damage to forests" without a set budget. It's a "backup support" that can be activated on special occasions, such as forest fires and natural disasters.

Wood products in green buildings

Modern building regulations have contributed to the increase in construction of multi-storey timber buildings. The dramatic increase can be attributed to several important factors. First, the new law (from 1994) that made it possible. Another factor is the lower cost of building with wood compared to constructions using other materials. Wood has shown itself to be the best raw material for use within industrial building methods, enabling costs to be reduced. Another factor is growing environmental awareness, where the choice is motivated by the fact that wood is a renewable material and that its use reduces CO2 emissions, provided that the wood is harvested in forests from sustainable managed forests, where e.g. replanting is practiced. Wood is also the only structural building material with third-party certification systems in place to verify that products have come from a sustainably managed resource.

Lifecycle analyses show an advantage for wood-framed houses compared to other materials. The Swedish Green Building Council programmes and code development include Leadership in Energy and Environmental Design (LEED) green building standard and Building Research Establishment’s Environmental Assessment Method (BREEAM). More and more companies and organisations are demanding information on the quantities of fossil carbon created by different products, their “carbon footprints” and this contributes to building with wood.

Trade policy issues affecting forest products markets

European Union Timber regulation

Trade policy is managed by European Union. The European Union Timber Regulation (EUTR), which became effective on 3 March 2013, is intended to prevent the entry of illegally logged wood into the 27 EU Member States. The Regulation prohibits placing on the EU market wood and wood products illegally harvested and obligate operators to exercise due diligence and use a due diligence system. Operators can develop their own system or use one developed by a monitoring organization. The Member States are responsible for laying down effective and dissuasive penalties applicable to infringements. Competent authority shall carry out checks on operators and monitoring organisations to verify compliance with the requirements in EUTR.

The Swedish Forest Agency (SFA) is assigned to be the competent authority for EUTR implementation in Sweden. Since the first of August 2014 Sweden has a national legislation

laying down rules concerning infringements of the provisions of the regulation and rules on carrying out checks on operators by the competent authority.

So far 144 checks on operators importing timber products have been conducted in total. 24 checks on operators placing harvested timber from Swedish forests has been conducted and are integrated and coordinated with ordinary supervision to Swedish forest owners.

Corporate Social Responsibility (CSR)

The Swedish Government has a policy for CSR. The objective of Sweden's industrial policy is to strengthen competitiveness and create more jobs and growing companies. CSR is a self-evident part of a modern industrial policy. In line with this, the Swedish Government has drawn up a more ambitious CSR policy.

CSR has been strong driving force within the forest sector for several years. The interest is primarily demonstrated through the involvement in FSC and PEFC forest certification schemes. The involvement appears stable over time. Swedish global pulp, paper, and packaging producers often include sustainable forestry among the CSR activities are also mentioned in financial and sustainability reports.

Research and Development 2018 and beyond

Sweden has strategically aligned energy-related RD&D policies with its energy and climate objectives. These are strongly geared towards market deployment and build on the country's comparative strength, including smart grids and biofuels. Innovation and business sector commitment are a key factor for the success of the Swedish energy RD&D policy.

The NFP strategy contains proposed of activities in these five areas.

Development of sustainable biofuels for airplane

Support research and development of sustainable biofuels from Swedish forest raw material for flights as well set up an innovation cluster that brings together the entire value chain and which brings forth a common needs analysis to cope with transition to fossil-fuel freedom within aviation. Swedish Energy Agency is allocated SEK 100 million evert year 2018-2020

Innovation clusters for fossil fuel-free heavy traffic

Set up an innovation cluster for liquid biogas from among others forest raw material Swedish Energy Agency is allocated SEK 28 million 2018, SEK 32 million 2019, SEK 25 million 2020 and SEK 115 million 2021.

Regional innovation clusters

The work of innovation of Sweden's Innovation Agency (Vinnova) together with regional co-financiers, invests SEK 130 million during ten years on regional innovation clusters. Exiting structures for innovation are the National Research Agenda, the state-owned company Research Institute of Sweden AB (RISE) and the industry-wide venture BioInnovation.

Development of sustainable forestry

On further development of sustainable forestry and its utility to society. Research Council for Environment, Area of land use sector agriculture, forestry and fisheries and Social issues. During 2017-2020 allocated SEK 356, 000.

The National Research Platform- Treesearch

Government’s cooperation program circular and biobased economy and aims to build new knowledge and expertise in research on new materials and specialty chemicals from wood raw material. For 4 years period total allocated SEK 70 million.

Market drivers

Sweden is a small and export-oriented and export-dependent country. More than 90 % of pulp, paper and paper production is exported and almost 70 % of sawn softwood is exported. Hence, Sweden is depending on demand from export markets, both in EU and globally. Of total export of pulp, paper and paper products 30 % were exported outside EU and for sawn softwood 45 % were exported outside EU. As an export-dependent country maintaining free trade is crucial. In times of weaker economic performance protectionism tends to increase.

Increased migration, urbanization, rising prosperity and higher fertility rates means growing urban areas and increased demand for new housing, renovation of existing buildings and reconstruction after natural disasters and in addition maintenance of the existing housing stock. At the same time, there is greater demands on recycling, climate-friendly materials and increased sustainability, both during the construction and living phase.

An increased need for resources globally, driven by population growth and increased prosperity, makes resource efficiency increasingly important. At the same time, the climate threat demands limited use of fossil raw materials. The fossil raw materials are used globally today 90-95 % directly as energy, especially in transport. Fossil fuels represent 81 % of the world energy. The forest provides a double benefit to the climate, the growth of trees capture carbon from the air and forest-based products can substitute fossil-based products. These drivers create more needs for and new possibilities for products based on the forest resources

The bioeconomy is becoming increasingly important as a driver and requires a strong transformation of the society. This development is primarily driven by a need to reduce the use of fossil raw materials and the fact that the earth has limited natural resources. The main driver for development is the incentives created to increase the cost of fossil-based CO2 emissions and which creates opportunities for bio-based alternative to be economically competitive.

New needs and demand among customers', globalized trade and technology sharpens competition and change markets. Competition concerns customer utility, raw material, energy, human capital, logistics and transport, financing and rules. Substitution may be both positive (from fossils to renewables) as short-term negative for some companies (from paper to digital media) in the forestry sector. Sweden’s access to a sustainable, efficiently managed forest raw material that contributes with a high-quality wood in value chains should be seen in this perspective.

Digitization and automation are universal trends that will affect the forest industry's opportunities for value creation and competitiveness, thus increased customer utility. Rapid technological developments open new opportunities in the forest industry. Technology to convert forest biomass and its components to various new products in areas such as energy and chemistry, is underway with great intensity. Nano-technology and 3D - printing are two materials related areas undergoing rapid development which provides opportunities for new processes and products.

Through globalization, digitalization and increasingly interdependent the world becomes increasingly fast changing and complex. The need to build capacity for change and quickly be able to renew activities and products, is growing in pace with the changing of outside worlds requirements and conditions. To keep up with these changes companies and organizations becomes increasingly more specialized and focused in their value creation. In the industry, there is a trend that companies must choose between low cost and high volume or high price and small volumes.

In a fast-moving and complex world where both individuals and companies become more specialized, but also more interdependent, there is a growing importance of cooperation and strategic collaboration with other stakeholders, both within the forest sector as well as actors in other industries, such as in the textile and petrochemical industries. Both in business and in the public, private and non-profit organisations, this becomes increasingly crucial for success.

Development in the forest products markets sectors

Wood raw materials

The high-water levels after the wet and mild autumn and more snow than normal in winter in 2017 and early months of 2018 created a tough situation for wood supply in Sweden. The weather situation was the same in Baltic countries. Therefore, imports were restricted due to this problem from Baltic countries to Sweden.

Sawlogs

Sawlogs removals is preliminary estimated to 36.5 million m^3 in 2017(solid volumes under bark). It is 2 percent more than 2016.The estimate for 2018 shows a slight increase and the forecast for 2019 is expected to rise marginally compared to 2018. The demand for softwood sawlogs is expected to remain high in 2019. This is mainly due to improved markets for sawn softwood globally

Average price of sawlogs (only statistics for delivery timber is available which represents some 15 percent of total sales) fell by 3 percent in 2017 compared to 2016. There are regional price variations. In the Central and North regions, the prices were unchanged while the prices fell in the region South by 1 percent.

Sawlog prices rose by 2 percent in the second quarter 2018 compared to first quarter 2018. On the regional level there is very small changes in sawlog prices. Prices rose by 1 percent in Central region, while prices remained unchanged in both South and North regions.

Prices of sawlogs is expected to be stable with small rise during the autumn of 2018 due to increasing demand in sawmills.

Pulpwood

In 2017 preliminary removals of pulpwood is estimated to 28.2 million m³ (solid volumes under bark) a decline by 10 % compared to 2017.A estimate for 2018 shows an increase by 5 percent and forecast for 2019 further rise by

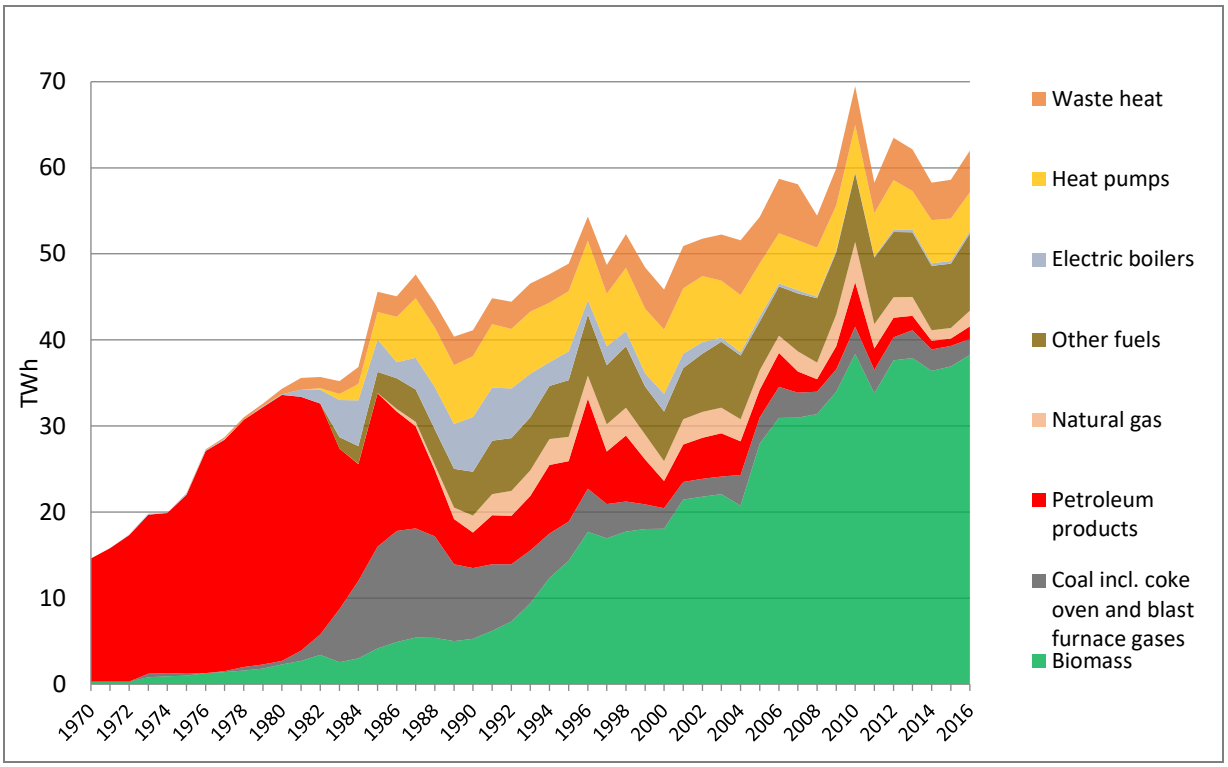
From surplus a few years ago to shortage wood supply of pulpwood in 2017 driven by increase demand and due to weather as mentioned in the capital. Large investments are made pulp industries and pulp capacity is expected to increase.

The stocks of pulpwood are at the lowest level since 2004. The stocks of pulpwood decreased by 34 % in 2017 compared to 2016. Average price of pulpwood (only statistics for delivery timber is available which represents some 15 percent of total sales) increased by 1 percent in 2017 compared to 2016. The pulpwood prices have been on upswing in second quarter 2018 and rose by 4 percent compared to first quarter 2018.

Wood fuels

The supply of renewable energy in the energy system has increased steadily since the 1970: s mainly through use of bioenergy. Renewable energy accounts for half of the domestic energy consumption (excl. transformation losses). By far the greatest contributor to Sweden’s renewable revolution has been bioenergy. Biomass, such as firewood, wood chips, pellets, briquettes, ethanol, methanol, biodiesel, bio-oil, bio-gas, dimethyl ether and biomethane accounts for most of Sweden’s renewable energy. The use of biomass in the Swedish energy system has increased over the years. Biomass accounted for 11 per cent or 52 TWh of the total energy supply in 1983. In 2016, the use of biomass has increased to 139 TWh, which is equivalent to 25 per cent of the total supply. The district heating sector and the industrial sector are the major users of biomass, but some 17 % of share is also used as transport fuel, which is increasing more rapidly. The use of biomass has grown steadily over the last 40 years. Swedish industry primarily uses biomass and electricity as energy carriers. In 2016, these respectively constituted 40 and 35 percent of industry's final energy use

Figure 3 Input energy used in the production of district heating 1970-2016



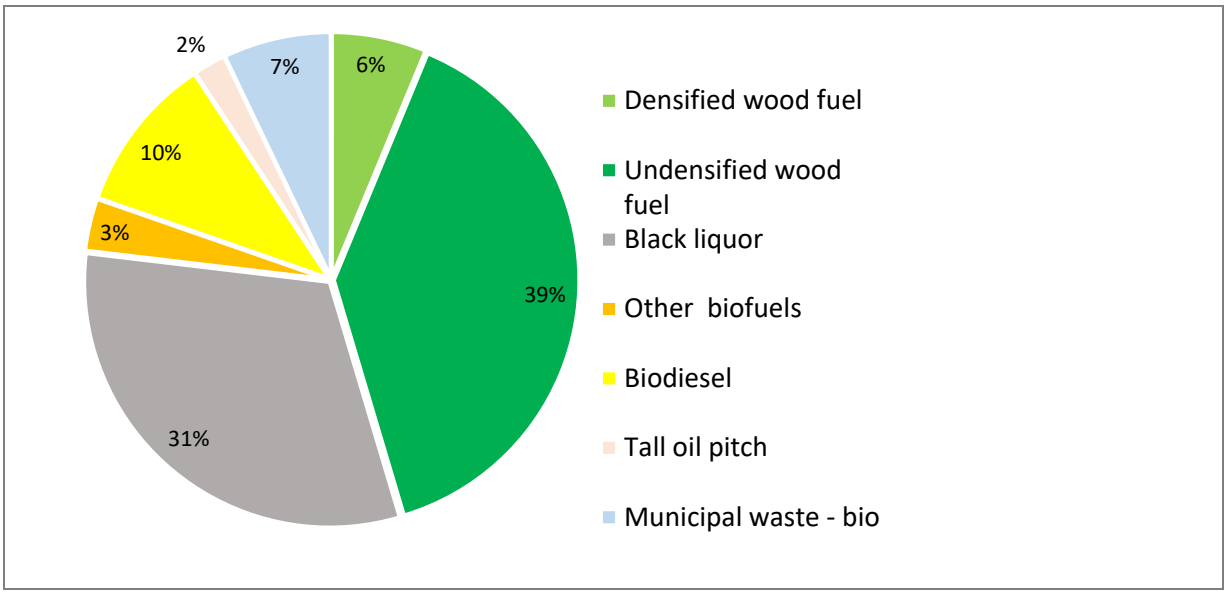
Source: Swedish Energy Agency

Several different fuels can be used for district heating production, and a major transition towards renewable fuels has taken place since the 1970s. In 2016, biomass accounted for 60 %, other fuels accounted for 15 % and waste heat for 10 % of the input energy in district heating production. The use of heat pumps has decreased in the district heating system in recent years and the use of electric boilers has almost completely disappeared since the early 2000s. The use of waste has increased in the past decade. The heat from incinerating waste is used as the basis for district heating in several Swedish cities. The increase is due to the ban in EU on dumping combustible waste in effect from 2002 and the ban against dumping organic waste in effect from 2005. Import of waste has rapidly increased from Norway and United Kingdom.

District heating demand is anticipated to decrease because of energy efficiency improvement measures and global warming. At the same time, the market share for district heating will increase, and a large proportion of the future cooling demand is produced by district heating by absorption cooling. It is vital that the district heating sector can contribute to recover the surplus heat from industry and future biofuel production.

Figure 2 shows the use of biomass by fuel type in 2016. Undensified wood fuel in 2016 reached its highest figure since 2005. The two largest segments consist of undensified wood fuel and black liquor (black liquor is a by-product of the pulp and paper industry which formed when boiling wood chips into pulp))

Figure 4 Use of biomass per fuel category 2016



Source: Swedish Energy Agency.

The residential and services sector has nearly doubled its use of wood fuels in 10 years. In 2016, the use of biomass accounted for 10 per cent of the total use in the residential and service sector.

The paper and pulp industry will, in near future continue to play a key role in both biofuel and heat production. The future builds on the idea that biorefineries can supply a range of energy and industry products based on biomass resources. The biorefinery can do this in an efficient manner provided that excess heat and residues are handled properly.

Certified forest products

Certified area of productive forest land, 1000 hectares

	FSC certified	PEFC certified	Double certified	Sum
Large-scale forestry	8,750	4,753	4,753	8,750
Small and medium forestry	3,086	5,269	2,728	5,627
Total	11,836	10,022	7,481	14,377

Source: Swedish Forest Agency. A study on forest land voluntarily set aside report 4, 2017.

The share of certified area of productive forest land amounts to 63 % (excluding double certified area).

Value-added wood products

Sweden's prefabricated wooden houses industry comprises 538 companies with 5,840 employees, of which 111 companies has more than five employees in 2016. Production value was SEK 17.8 billion. Total exports of prefabricated wooden houses increased by 19 % and amounted to SEK 682 million in 2017 compared to 2016. Imports also increased by 121 % to

SEK 982 million. Swedish exports were mainly to Norway, Japan, Finland, Germany and United Kingdom. Swedish imports were mainly from Estonia, Lithuania, Norway and Finland.

The Furniture industry in 2016 comprises 2,286 companies, of which 1,452 are companies with null employees. Total number of employees in 2017 were 13,045, a decline by 3 percent compared to 2016. In 2016 the total production value of furniture amounted to SEK 27.1 billion. Exports of furniture rose by 4 percent to SEK16.6 billion in 2017 compared to 2016. Norway, Denmark, Finland, Germany, USA, United Kingdom and France are the main market of export. Total imports of furniture increased by 8 percent to SEK 18 SEK billion in 2017 compared to 2016. Swedish imports were mainly from Poland, Norway, China and other EU countries.

Sawn softwood

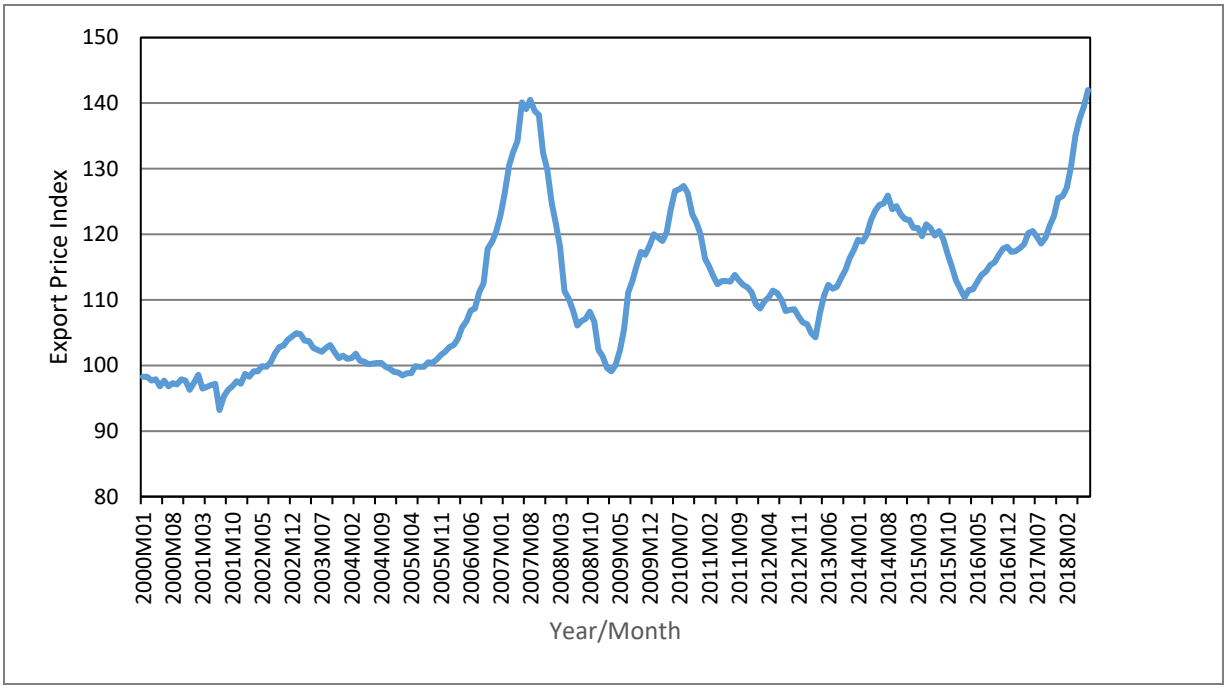
The Swedish market for sawn softwood has been strong but has been hampered by wood supply due to mild weather and increased competition with the expanding pulp industry has also influenced the supply negatively, as well as shortages in transport capacity. Construction of wooden multi-storey apartment and commercial buildings is increasing steadily as well as 90 % of all small houses are built in wood. There is also greater demand globally. The strong domestic demand is underpinned by building activities level and ROT -work repair, renovation, extension and maintenance on houses. Building with wood is more often preferred. Today, the capacity in wood construction is a limiting factor but new projects such as new CLT-production sites are coming up to meet the increasing demand.

The production in 2017 reached 18.3 million cubic metre and is estimated to be at the same level in 2018 and the forecast production is expected to increase in 2019 to 18.7 million m^3.

The export volume in 2017 was second highest ever, only in 2006 Sweden exported more sawn softwood. In 2017, the total export of sawn and planed softwood rose slightly by one percent to 13.1 million m^3 compared to 2016.The largest export market is around 60 % to Europe and 40 % is shipped outside Europe. The export value in 2017 of sawn and planed was record high of SEK 26.7 billion.

The total exported volume of sawn and planed softwood decreased two per cent during the first half of 2018compared with last year. Total export volumes to European markets were unchanged up to first half of 2018.Export to the Netherlands, Denmark and Poland rose by respective 8, 5 and 9 percent. Exports to UK, Sweden’s largest export market, decreased with 3 % during the first half of 2018.

Figure 5. Export price index for sawn & planed wood, 2000- July 2018. Price Index 2005=100



Source: Statitics Sweden

After a peak in average export prices in 2007 prices fell during 2008 and reached bottom in the second quarter of 2009. The average prices then peaked up again in late 2010 because of very low supply during the years after 2007. The prices have declined throughout 2011 and 2012. The downward trend changed in March 2013 and the prices have steadily increased in 2014 up to October. The prices have declined in 2015 and recovered and since April 2016 the prices have continuously risen to reach a new peak level in August 2018.

Much depended, however, on the currency exchange rate fluctuations. The Swedish krona SEK has depreciated against all three main trading currencies EUR, GBP and USD.

Wood-based panels incl. Parquet industry

According to Statistics Sweden the wood-based industry and parquet industry consists of 68 companies with some 1, 500 employees in 2016 and output accounted for approximately SEK 3.9 billion and value added amounted to SEK 1.2 billion. Most are inputs in the furniture and joinery industries and the construction industry. Although manufacturing of packaging and packaging are significant uses. There was a rise in overall production of wood-based panels increased slightly by 1 percent to 631,000 m³ in 2016 compared to 2015. Exports of wood-based panels increased marginally, and imports increased in 2016.

In recent years the cost of wood raw material, energy and chemicals has affected wood-based panel industry negatively. The industry will continue to face growing competition for wood from renewable energy sector.

Paper, paperboard and wood pulp

The paper production increased by 1.6 % in 2017 to 10.26 million tons compared to 2016. The production varies for different segments but in total there has been a growing production. The combined production of graphic papers continued to decline in 2017 by 0.6 % to 3.58

million tons. All segments showed a retrogression, newsprint fell by 0,5 % while printing and writing paper fell by 1.0 %.

The combined production of packaging materials grades was stronger in 2017 and production increased by 2.8 % to 6.2 million tons compared to 2016. The various subdivisions have risen by 0.5 to 3.6 %.

The trend continues in 2017 with slight weaker growth of graphic papers and strong growth for packaging material grades. The total production of paper and paperboard in 2018 is estimated to rise to 10.3 million tons. The forecast for 2019 is projected to rise by 1 % to 10.4 million tons compared to 2018.

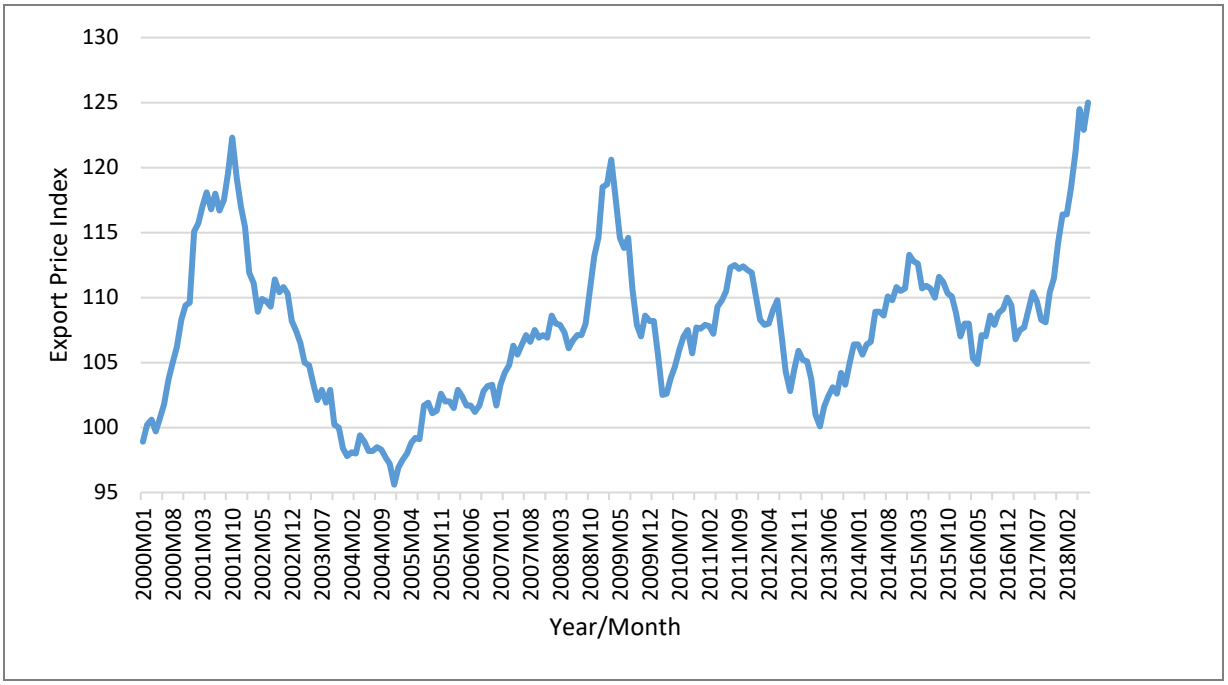
Exports of paper and paperboard in 2017 increased by 3 % to 9.4 million tons compared to 2016. Exports by assortments shows newsprint and mechanical printing paper increased by 4.3 respective 3.0 percent, while exports of wood free printing paper declined by 8 % Exports of packaging material grades increased by 26 % compared to 2016. The Swedish export share varies depending on assortments. Packaging materials and printing paper has an export share of over 90 %, while newsprint, tissue and other paper have lower export share. Europe is the largest market with export of 80 %. The total exports of paper and paperboard in 2018 is estimated to remain at same level 2017 and forecasted in 2019 to rise slightly.

The production of wood pulp rose by 4.9 % to 12.2 million tons in 2017 compared to 2016. Chemical pulp has the highest share of more than 70 percent of the total pulp production. All product groups within wood pulp increased in 2017. Bleached sulphate softwood increased by 5 % to 4.1 million tons and production of combined mechanical pulp and semi chemical pulp increased by 3.8 % to 3,4 million tons Other chemical pulp increased by 6.1 % to 4.7 million tons. The changes of wood pulp production are partly that within paper production there have been changes in quality, the production of graphic paper and printing paper is decreasing while packaging is increasing. The total production of wood pulp is estimated to rise by 1 % in 2018 and forecasted to rise by 4 % in 2019 compared to 2018.

Exports of wood pulp increased by 15 % to 3.7 million tons in 2017 compared to 2016 Exports of largest wood pulp assortment of bleached sulphate softwood amounted 2.6 million tons, an increase of 9 % compared to 2016. The estimate exports of 2018 show a slight decline in 2018 and a forecast for 2019 is expected to increase again in 2019 compared to 2018.

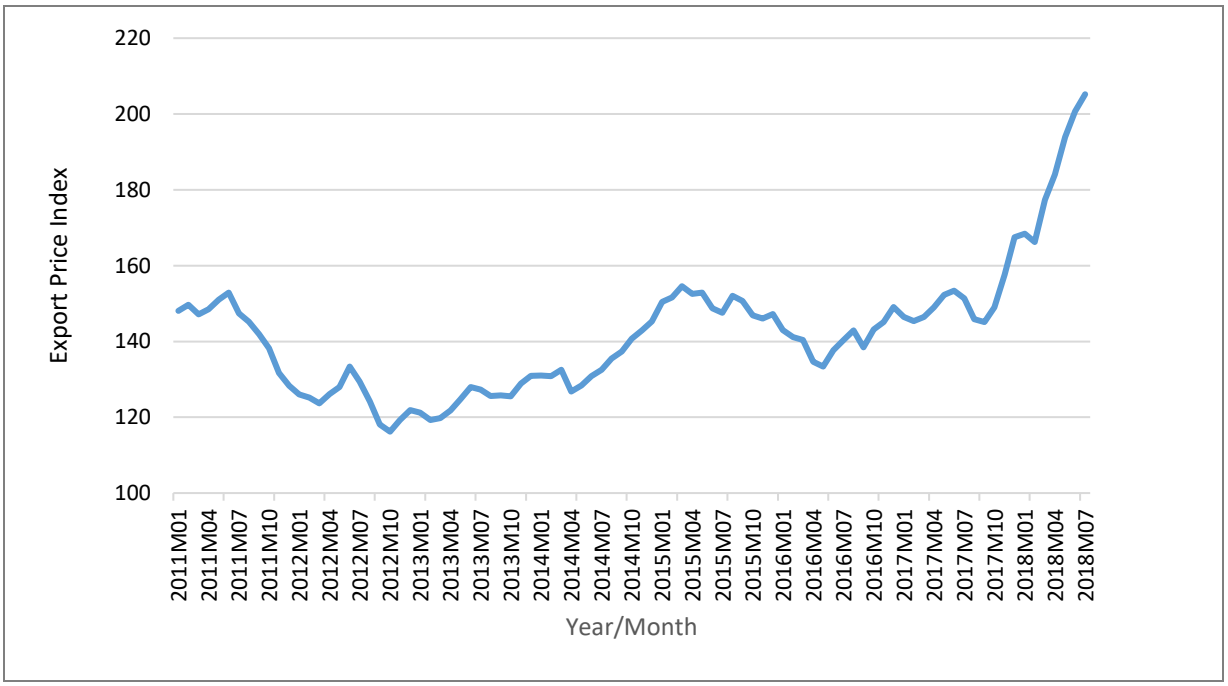
Price fluctuations are closely tied to global stocks and changes in balance between supply and demand. Export prices remain dependent on the exchange rate of USD and SEK.

Figure 6. Export price index for paper and paperboard, 2000- July 2018. Price Index 2005=100



Source: Statistics Sweden

Figure 7. Export price index for pulp, 2011- July 2018. Price Index 2005=100



Source: Statistics Sweden

Export price index is available from 2011. There been a continuous step rise in export prices since September 2017 and prices reached new record levels in 2018. Bleached sulphate softwood has risen mostly, and bleached sulphate hardwood is increasing modestly.

Housing and construction

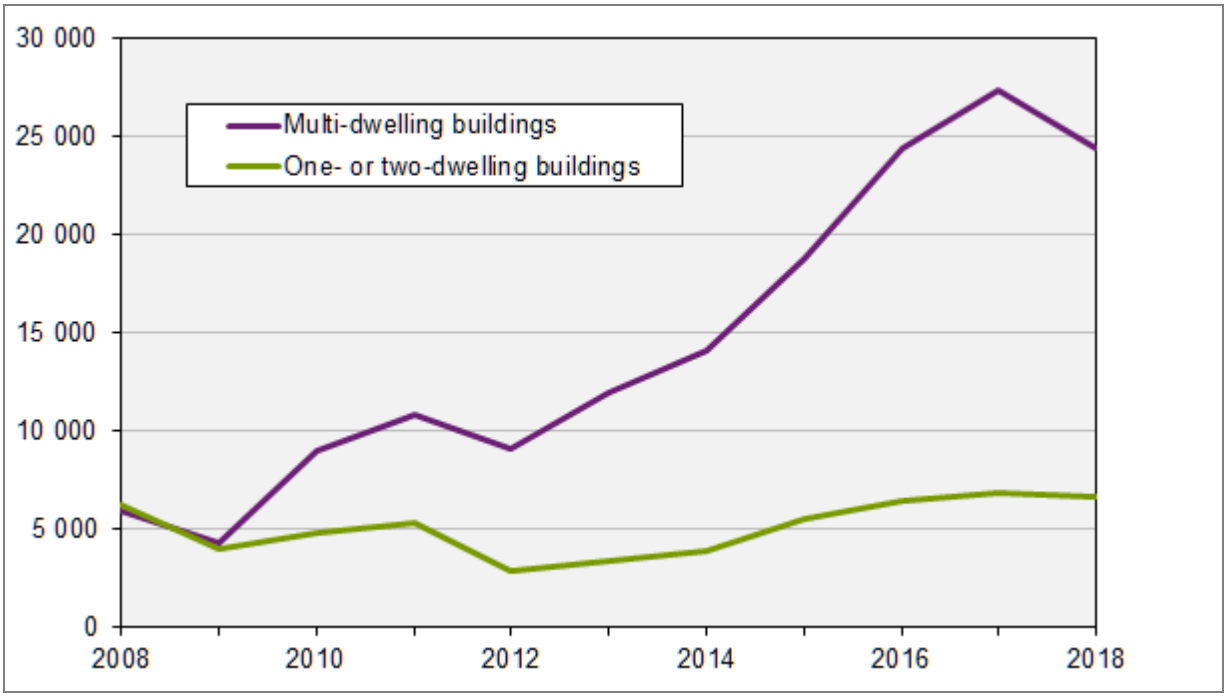
To boost investment in infrastructure, improve mobility and thus alleviate the housing shortage, the government introduced a new SEK 622.5 billion infrastructure bill for 2018-2029. Sweden is also a leader in research and innovation, with several initiatives to strengthen the link between academia and the construction industry to actively promote the commercialisation of research and research into sustainable construction. Schemes to support the energy efficiency and renovation of the housing stock are also available, including a 30 % tax deduction (ROT) and a SEK 778 million programme for the energy efficient renovation of rental housing in socio-economically disadvantaged areas.

Much of Sweden is facing a housing shortage, primarily in its metropolitan regions. Sweden has one of the highest levels of urbanization in the EU. Construction in housing has increased sharply in recent years. However, there is structural undersupply of dwellings in Sweden and despite the high levels of dwelling construction in 2016 and 2017, these were not sufficient to address the housing shortage, which requires the construction of 600,00 new homes by 2025.

In the first half of 2018 according to preliminary figures, there is fewer new construction of dwellings. In the first half of 2018, construction of approximately 24 350 dwellings was started in one- or two-dwelling buildings, which is 11 percent lower than in the same period in 2017. In one-to-two dwelling buildings, construction of 6 600 dwellings was started, down by 4 percent compared with same period in 2017. In addition, conversion of multi-dwelling buildings resulted in 1 250 dwellings in the first half of 2018, compared with 2 395 dwellings in the corresponding period in 2017.

Despite risks and warnings for a possible real estate bubble and the high level of household loans housing construction will probably remain strong. The main reason for increased construction on the housing market is higher prices and employment, low interest rates and faster planning processes.

Figure 8. Number of started dwellings 1st half 2006-2017



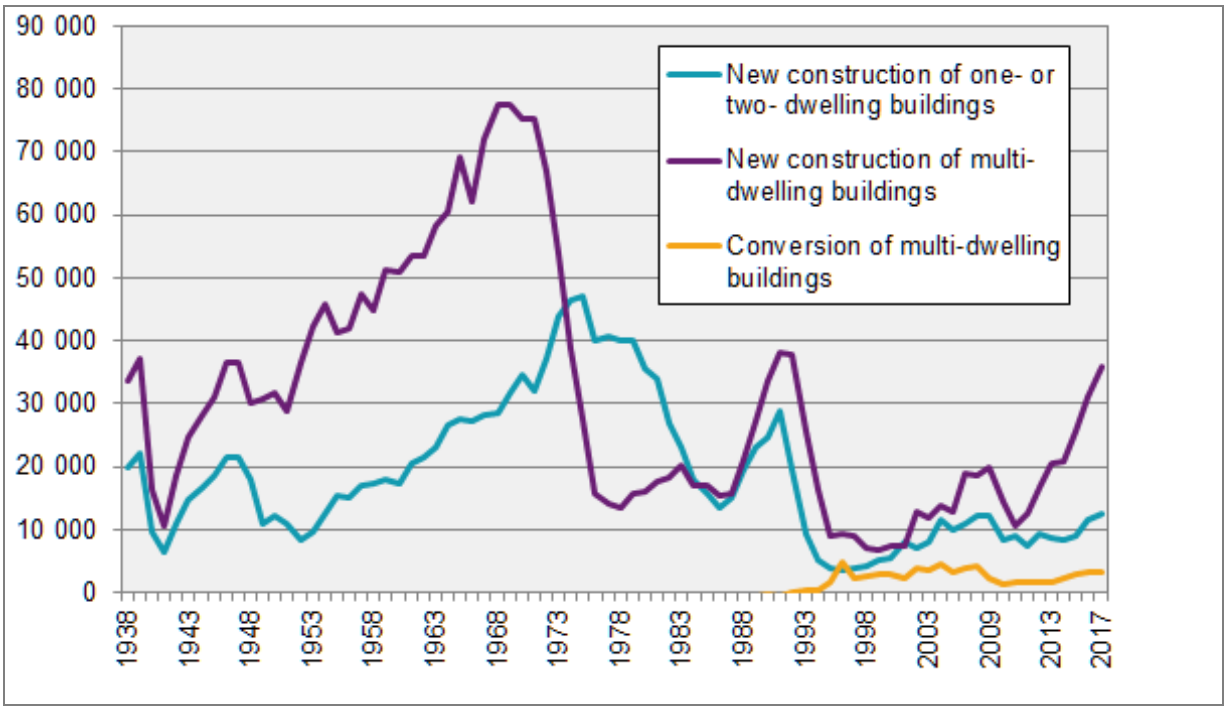
Source: Statistics Sweden

Last year a total of 48,227 newly built dwellings were completed. This is the highest number of dwellings completed in new construction since 1992, when 57,319 were completed.

The completed dwellings comprised 12,444 dwellings in one-or two-dwelling buildings, and 35,783 dwellings in multi-dwelling buildings. In addition, 3,368 dwellings were completed through conversion of existing multi-dwelling buildings. As a result, there was an increase of 51,595 dwellings in total in 2017

In addition to the 48,277 dwellings completed through new construction, 3,368 dwellings were completed through conversion of existing multi-dwelling buildings. About 80 percent of those dwellings came from premises that have been converted into dwellings, and about 10 percent came from attics converted into dwellings.

Figure 9. Number of completed dwellings in new construction 1938-2017, Conversion of multi-dwelling buildings 1989-2017



Source: Statistics Sweden

The National Board of Housing, Building and Planning has in July 2017 adjusted its forecast regarding construction in the future. The need for new housing for the next nine years, until 2025, is estimated to be 600,000. A major part of these, 320,000, is necessary up to 2020, which means an average annual rate of 80,000 new dwellings per year. The construction has increased in recent years, but not at a rate needed.

The new revision, however, means a reduced need for new dwellings until 2025 compared with the forecast from June 2016. The calculation then indicated a need for 710,000 dwellings, i.e. 110,000 more than the new forecast. The reason for this is that it was completed 46,000 dwellings in 2016 and that Statistics Sweden in its new population forecast from April 2017 adjusted down the population by 2025 with 135,000 people. Both These circumstances imply a lower need for new dwellings by 2025 compared with last year's forecast.

Tougher amortisation requirements have been introduced for homeowners as of 1 March 2018. All new mortgage holders who borrow more than 4.5 times their gross income will have to amortise at least 1 % of the debt, in addition to the existing requirement. The new requirement will have the most impact in Stockholm and Gothenburg, where property prices are highest. In Stockholm, 30 % of all new mortgage holders will be affected.

5.a Table on selected Economic indicators

Macro-Economic indicators (Annual percentage change and percent, respectively)	**2017**	**2018**	**2019**	**2020**
GDP at market prices	2.1	2.4	1.9	1.9
Current account[1]	3.6	3.3	3.8	3.8
Employment	2.3	1.7	0.9	0.5
CPI	1.8	2.0	2.5	2.5
Unemployment[2]	6.7	6.3	6.2	6.2
Repo rate[3]	-0.50	-0.50	0.00	0.50
Productivity in construction sector[4]	3.5	-0.1	-0.1.	
Housing investment, new construction[5]				
- Multi-dwelling buildings	15.4	2.3	-10.5	.
- One- or two-dwelling buildings	10.4	5.7	-2.1	.
SEK per Euro	9.6	10.3	10.3	10.1
SEK per USD	8.5	8.7	8.9	8.7
SEK per GBP	11.0	11.6	11.5	11.3

1. Percent of GDP
2. Percent of labour force
3. Percent at year-end
4. Constant prices, basic prices, percentage change
5. Constant prices, percentage change

Annex 1 Detailed National Forest Programme

Actions, objectives, and budget framework for focus area 1 from 2018. Sustainable forest management integrated with climate change policy.

Actions	**Objectives**	**Budget framework**
Design an effective education package for moose management	Contribute to increased understanding and reliable moose management system.	For the assignment implementation, Swedish University of Agricultural Sciences is allocated 1 million SEK during 2018

Actions	Objectives	Budget framework
Conduct a socio-economic impact assessment of the method of to protect valuable forests transactions for Sveaskog AB	The socioeconomic impact assessment shall contain an identification and comparison of all society's costs and the benefits of protecting valuable forests using the method used compensation field from Sveaskog (ESAB method). Costs and benefits for companies, individuals and other stakeholders and society in general to be calculated.	For the execution of the assignment the Swedish University of Agricultural Sciences is allocated SEK 500, 000 in 2018 and estimated SEK 500,000 in 2019
Forecasts for greenhouse gases	Forecast based on updated scenarios for Swedish forest and forest land emissions and uptake of greenhouse gases until 2030 in accordance with decisions and guidelines for reporting to the EU and the UN Climate Convention.	The Swedish University of Agricultural Sciences is allocated SEK 3 million in 2018.
Develop coherent and regular statistics on forest land area.	The assignment will include reporting areas divided by the forms of formally protected areas, voluntary provisions, consideration areas as well legislative protection of unproductive forest land, so that a transparent and comparable follow-up can be done. Other identified instruments like refers to regulation of land use can be included in the report for the assignment	The Swedish Forest Agency, the Swedish Environmental Protection Agency and the Swedish University of Agricultural Sciences are allocated SEK 500, 000 in 2018 respective 500, 000 in 2019

Additional measures that contribute to the focus area 1

Actions	Objectives	Budget framework
Nationwide inventory of key woodland habitats	Identify and register key woodland habitats	Swedish Forest Agency is allocated SEK 20 million per year during the period 2018-2027.
Protect and manage valuable forests	Purpose is to raise ambition in the work on the protection of valuable nature, management and management of protected nature, conservation of biodiversity, wildlife management and efforts for outdoor life.	Total allocated SEK 2.7 billion in 2018
Preserving protected and conservation forests	Compensation for forest owners with high share of registered key woodland habitats	250 million per year until 2027
Continuous-cover forestry	Develop new methods for continuous cover forestry	Swedish Forest Agency allocated SEK 6 million.

Actions, objectives, and budget framework for focus area 2 from 2018. Multi-faceted use of forests for more jobs and sustainable growth across the country.

Actions	Objectives	Budget framework
Obtain and communicate cross-disciplinary knowledge about multiple use of forests.	Scientific analysis and syntheses as well as carry out communicative work that further visualizes the potential multiple use of forests	Swedish University of Agricultural Sciences is allocated SEK some 5 million in 2018 and SEK 3.5 million in 2019
Measures for an equal forest sector	Evaluate the Government and forestry common strategy. Competitiveness requires gender equality. Gender equality strategy for the forestry sector, including the reports that have developed within the framework of the implementation and evaluation work strategy	Swedish Forest Agency is allocated SEK 800,000

Additional measures that contribute to the focus area 2

Actions	Objectives	Budget framework
Mission for green jobs	To work and cooperate for to utilize the jobs potential within the green industries. The assignment is aimed at new arrivals and people long from the labour market.	Different authorities are allocated SEK 910, 000 during the period 2018-2020
Rural Development Proposition	The policy covers various aspects of entrepreneurship, employment, housing and welfare and is characterized by a holistic approach line with the global goals in Agenda 2030	Parliament on proposals by the Government totalling SEK 1.5 billion in 2019-2020 and then SEK 400 million annually.

Actions, objectives, and budget framework for focus area 3 from 2018. Innovation and world class processed raw forest materials

Actions	Objectives	Budget framework
Promote industrial wood building and increase knowledge among municipalities and other actors within construction and real estate industry as a part of the work against a Swedish bio-based economy	Carry out knowledge efforts, disseminate good examples as well as stimulate innovation and development of new building systems based on wood	Allocated SEK 2 million in 2018 and eventually SEK 2 million in 2019

Additional measures that contribute to the focus area 3.

Actions	Objectives	Budget framework
Developing Nordic Industrial wood construction	The aim is to increase Nordic cooperation and cross-border cooperation to promote a developed Nordic industrial wood construction export and sustainable solutions	Allocated DEK 2 million per year up till 2020

Actions	Objectives	Budget framework
Support for innovative and sustainable housing construction	Residential buildings should be climate smart and take advantage of innovative and architectural solutions. The support will help to increase development and application of innovative and sustainable solutions within housing.	Allocated total of SEK 275 million for the period 2018-2020.
National Road Transport Interface Plan for Transport Infrastructure for period 2018-2029	The plan includes major investments on both new construction as upgrading and modernization of existing infrastructure. The decision also holds significant investments in shipping and road.	The economic framework amounts to SEK 622.5 billion, which together with revenues from among others rail charges and congestion tax and municipal co-financing. This means that investments in total comprise measures of more than SEK 700 billion for the planning period 2018-2029.

Actions, objectives, and budget framework for focus area 4 from 2018. Sustainable management and conservation of forests as a key area of concern for Swedish international cooperation.

Actions	Objectives	Budget framework
International Forest issues	Increase forest sector contribution to the implementation of Agenda 2030.	Swedish Forest Agency is allocated SEK 4.3 million in 2018 and SEK 1.7 million in 2019.
Conduct dialogue on sustainable forestry for decision makers in the EU	Prepare and implement a sustainable dialogue on forestry and forest industry for decision makers in the EU, in terms of annual forest excursions	Swedish Forest Agency is allocated SEK 700, 000 2018 and approximately SEK 1 million 2019

Additional measures that contribute to the focus area 4

Actions	Objectives	Budget framework
High Level Political Forum for the implementation of Agenda 2030	The Government actively participates in highlighting the role of forest in 2018, objectives 15 Ecosystems and Biodiversity and 2019 for the role of the forest for climate and economic growth (e.g. Objectives 8 and 13)	
Strategy for Sweden's development cooperation for sustainable economic development 2018-2022	Contribute to global conditions for sustainable economic development, including growth and sustainable livelihood for people living in poverty. This includes productivity and sustainable production in agriculture, forestry and fisheries, including secured food security	

Actions, objectives, and budget framework for focus area 5 from 2018. An expansion of the knowledge base for sustainable management and conservation of forests.

Actions	Objectives	Budget framework
Develop advice for sustainable forestry	Advice, communication and collaboration with forestry professionals and forest owners, and where appropriate researchers, environmental organizations and other parts of civil society, contribute to more varied forestry.	Swedish Forest Agency allocated SEK 2 million 2018 and SEK 1 million 2019.

Additional measures that contribute to the focus area 5

Actions	Objectives	Budget framework
Laser scanning of Sweden's forest land	Storage and provision of laser data where frames should be useful and available for different purposes. The result shall may form the basis for open and free digital knowledge of forest basic data.	Land Survey and Swedish Forest Agency allocated SEK 12 million yearly