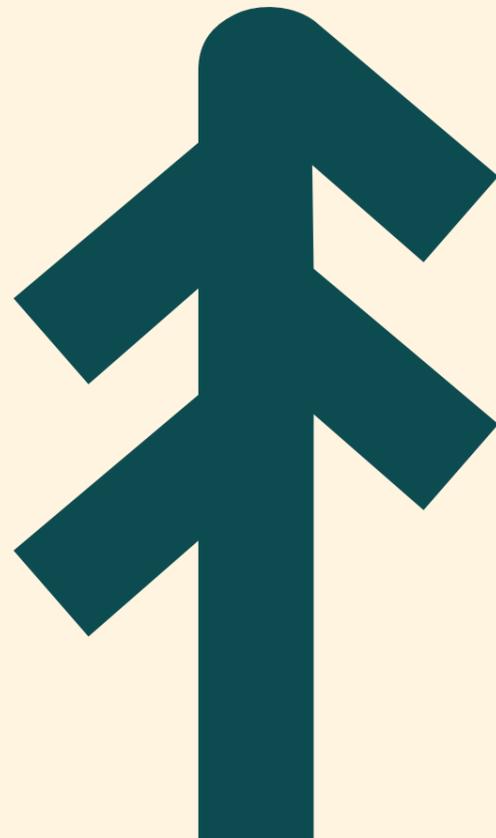




SUSTAINABILITY REPORT  
2021

The future  
is built with  
wood

 Moelven



In October 2021, Moelven launched its new value platform, including the mission, vision, values and human resources ideal, as well as graphical branding. We chose to roll out the new identity gradually. For example, it means that we will replace workwear, packaging and marketing materials after we have used up what we already have in stock. In this report, you will therefore see pictures that contain both the old and the new branding.

	<b>06</b> This is Moelven
	<b>26</b> Climate-smart products and services
	<b>48</b> Safeguarding our natural resources
	<b>62</b> Focus on people
	<b>78</b> Local value

<b>INTRODUCTION</b>	
Remarks from the CEO	4
This is Moelven	6
Sustainability work at Moelven	8
The big picture	12
Climate-smart, sustainable value creation	18
Priority areas, results and goals	20
Climate risk	22
<b>CLIMATE-SMART PRODUCTS AND SERVICES</b>	<b>26</b>
Climate accounts	30
Climate benefits from the forest – Carbon storage and bioenergy	32
What does it mean for me that the products I buy are certified?	33
The path to a fossil-free home	34
Climate-smart design	36
Tools for making climate-smart choices	38
Transport of goods	40
Breathing new life into old machinery	42
Energy consumption in our own production	44
Production of bioenergy	46
<b>SAFEGUARDING OUR NATURAL RESOURCES</b>	<b>48</b>
Resource-efficient design and packaging	52
Waste management	54
Resource optimisation	56
Artificial intelligence and people make the difference – together	57
Water consumption	58
Sustainable materials	60
<b>FOCUS ON PEOPLE</b>	<b>62</b>
Health, safety and the environment	66
Safe chemical use	70
Diversity and equality at Moelven	72
Employees make a difference	74
Taking responsibility together with SOS Children's Villages	76
<b>LOCAL VALUE</b>	<b>78</b>
The local environment	81
Creating economic value in local communities	82
A reliable partner	84
Key figures for the last five years	86

## Together, we make the difference

We are Moelven, you make the difference! This is our new human resources ideal. The new ideal is especially apt when it comes to sustainability.

In order to achieve the sustainable development goals that have been set at Moelven and in the wider community, we will be dependent on the big and small choices each and every one of us make every day. At Moelven, this involves sorting our waste correctly, carrying out less and larger-scale transportation, not idling, buying local or switching to recycled plastic for the materials we use to protect our products.

Sustainability has become a buzzword, but essentially it is all about behaviour. Your behaviour and my behaviour. In order to succeed, we need everyone to assume responsibility and utilise the opportunities that surround us. Like Stefan and Anders, our colleagues at Moelven Årjäng Såg AB, did when they took the initiative to install a camera at the timber intake. The camera assesses the shape of the log so that the root is reduced only for the logs that require reduction. This helps us to decrease wear and tear in machinery and streamlines the working day for our colleagues. Another example is the Health & Safety Committee at our head office in Moelv, which took the initiative

to repair their office chairs instead of buying new ones. Ideas and suggestions like these fill me with pride and joy!

The UN Intergovernmental Panel on Climate Change has sounded the alarm and is warning of a code red for humanity. The message is that we need to change course immediately. At Moelven, we have an important role to play in this. By producing sustainable products and solutions from wood, we are part of the solution. But it is not enough. We must always focus on the areas in which we are not good enough, seek out new and better ways in which to solve things and, not least, share these with one another.

We need to do our part and we hope that those involved with other parts of the value chain will also focus on all of the big and small choices that are made each and every day. As a forest owner, seller, warehouse manager, project manager or consumer, you have great influence and you can help make a difference by demanding sustainable solutions. Together, we are building a sustainable future from wood.



Morten Kristiansen,  
Group CEO





### Vision

Opportunities grow on trees – we grow with opportunities

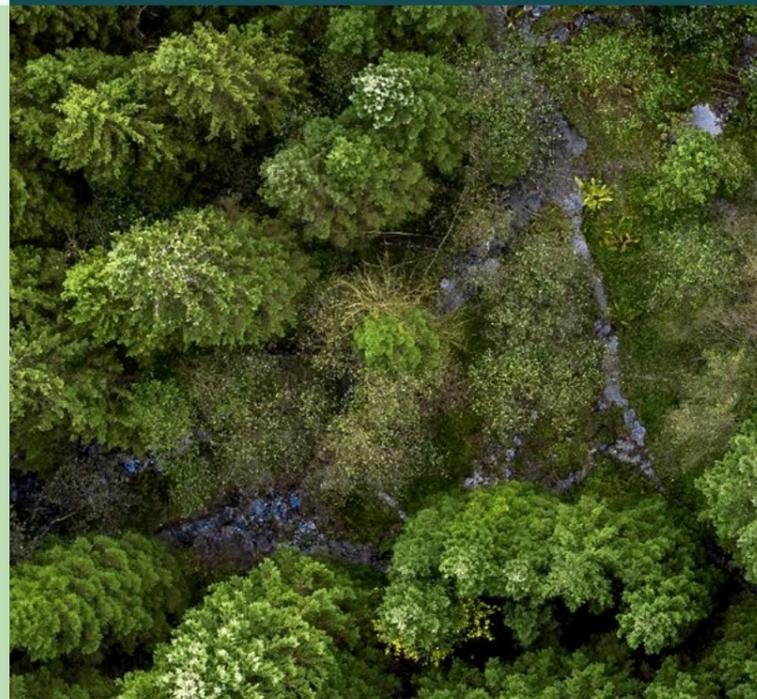


### We make use of our opportunities

We reach for the opportunities that surround us, just like the branches of a tree. We think out of the box and adapt to our environment, so that we can grow and remain viable under all conditions.

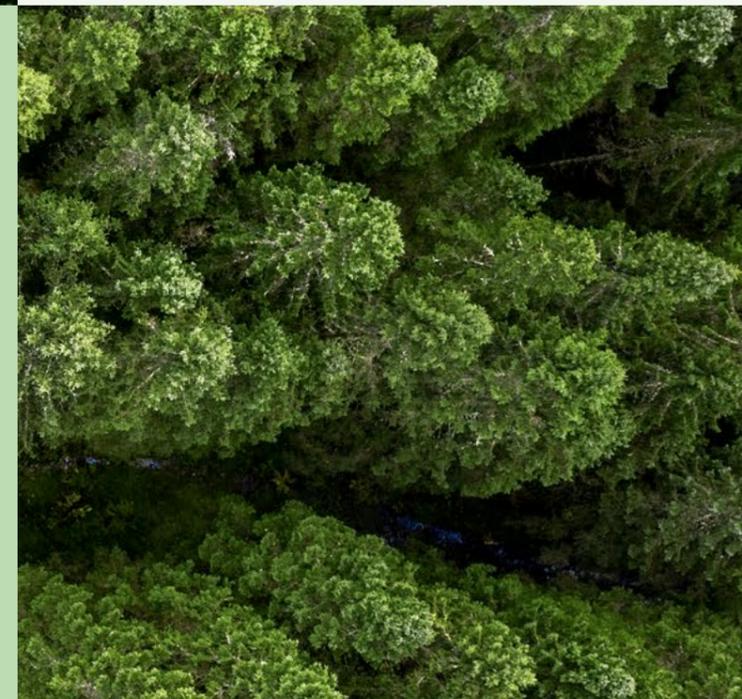
### Mission

We harvest our raw materials from the forest and create products and solutions that the world needs.



### We deliver

Moelven is reliable, and we keep to our promises. We build trust by cooperating and communicating with everyone around us. This means that we stand steady in both calm and stormy weather.



### HR concept

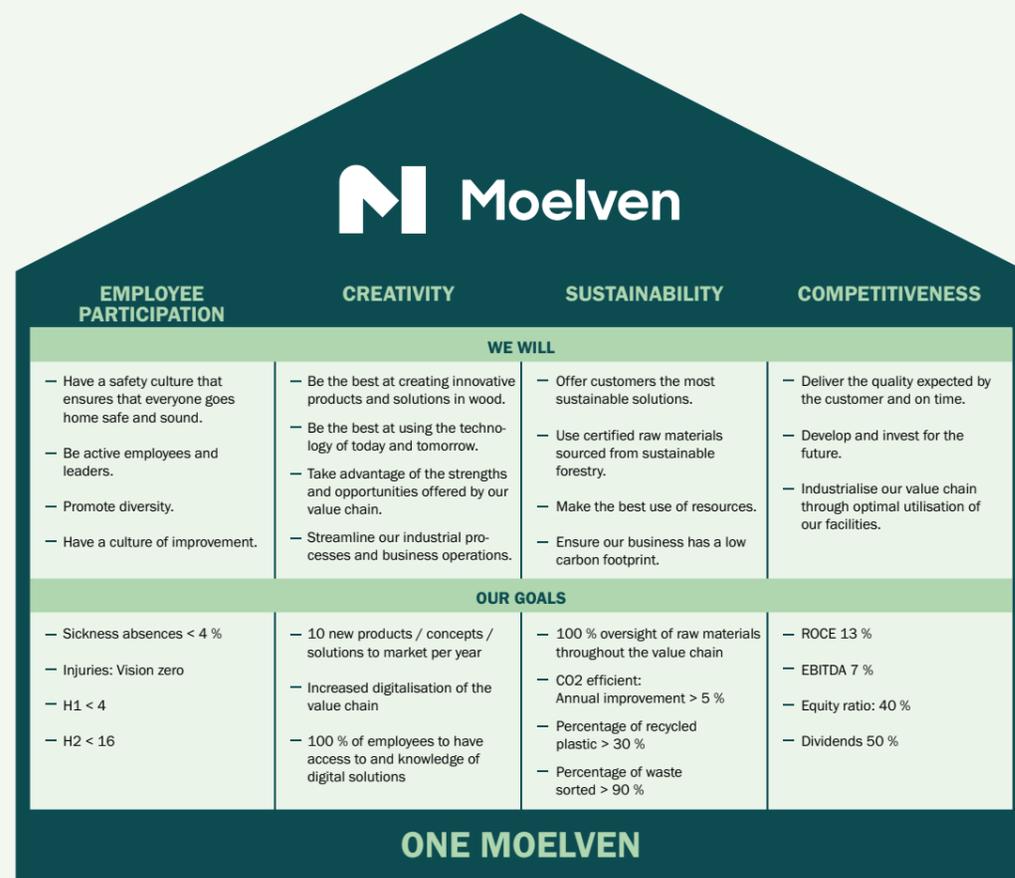
You make the difference!  
Moelven is the result of all the smaller and larger choices we make every day. Together we create a workplace based on trust, well-being and a sense of belonging. Since 1899, Moelven has seen opportunities, developed new ideas and built better climate-smart solutions for the future. We're going to keep on doing that.

We are Moelven – You make the difference!



### We take responsibility

We manage the renewable resources we live on with respect and care. We're all responsible for creating a safe workplace where we take care of people and the environment. These are our fundamental values.



## Our strategic framework

### Vision

Opportunities grow on trees  
- we grow with opportunities.

### Mission

We harvest raw materials from the forest and create products and solutions that the world needs.

### Values

We make use of our opportunities  
We deliver  
We take responsibility

### HR Concept

We are Moelven  
- You make the difference!

Our strategic framework summarizes the company strategy and is a useful tool for clarifying what we should do and how we prioritize to achieve our goals.

## Sustainability work at Moelven

Moelven harvests raw materials from the forest and creates the products and solutions the world needs.

The forest and the raw materials found in the forest are at the heart of the vast majority of Moelven's activities. Wood is a natural renewable raw material, which is also a carbon sink. Saw logs from spruce and pine are refined and transformed into a number of different products, from bioenergy raw material, chip products and sawn timber for the woodworking industry to finished construction materials, load-bearing structures, interior products, complete buildings and building interiors. The world needs construction materials and good methods for capturing CO<sub>2</sub> from the atmosphere. At Moelven, there is no doubt that materials made from wood form part of the solution, but this requires us to do our part of the job correctly and to ensure that we safeguard and utilize both the climate benefits and the other positive qualities of wood throughout the entire value chain. We have therefore made sure that sustainability is one of the pillars of our business strategy.

This strategic framework forms the basis for our sustainability policy, which provides guidance on how the strategy must be implemented in our business. The sustainability policy is reviewed and adopted annually by the Board of Directors.

Business activities will be based on certified raw materials from sustainable forestry and Moelven will contribute to climate action by being a low-carbon business that contributes to value creation for customers by offering the most sustainable solutions within the industries in which we operate.

Sustainability is one of the decision criteria for new investments and we actively work on innovation and product development in order to identify more sustainable processes, products and solutions. Nevertheless, Moelven's operations also include a number of production facilities where timber processing activities have been carried out for decades. This places different demands on the sustainability efforts to the development of new activities. In addition to emphasising sustainability in connection with investments and upgrades, everyday improvements also play an important part. One important aid in relation to this is the use of modern, digital tools. This is a cost-effective way in which to gather and analyse information about production processes and resource consumption, which can be used as the basis for improvement efforts.

We have split our sustainability efforts into four focus areas, which are also reflected in the main chapters of this report:

- Climate-smart products and services
- Safeguarding our natural resources
- Focus on people
- Local value

In turn, these focus areas have been split into sub-topics that are also described in further detail later in this report. The following sections will provide a summary of how these topics are linked to specific measures intended to develop our existing activities so that they become even more sustainable:

### People

The people who work at Moelven are the Group's most important resource. Developments in the industry are in the direction of increased automation and mechanical processing of the products and the use of constantly more technologically advanced equipment. At Moelven we believe that the greatest potential for increased value creation is in optimising interaction between man and machine. To achieve this, we depend on the commitment, expertise and diversity of our employees who will manage and operate the technology in a workplace where the risk of injury has been eliminated. It should be safe to work at Moelven. For this reason, the use of personal protective equipment is mandatory at all Moelven facilities:

- Helmets must be worn in all loading and unloading zones
- Protective goggles
- High-visibility clothing
- Protective footwear

### Certification and product documentation

Certification is important, both as part of our quality assurance routines and when it comes to providing our customers with enough information to make sustainable product and material choices. This is why we want to communicate openly about how we affect the outside world through our activities and we have a clear goal that our customers can be confident that Moelven products have been created using raw materials from sustainable forestry and that the climate and environmental footprint from our activities is well documented through product declarations and sustainability reporting. A complete list of certifications and approvals can be found at [moelven.com/certificates](http://moelven.com/certificates)

These are our most important certifications, product declarations and reporting schemes.

#### Raw material certification

The basis for the certification of Moelven's products starts in the forest with the certification of the raw materials that are harvested. PEFC™ and FSC® are the relevant certification schemes in this field. Moelven does not own forests, but works to promote forest certification. In Sweden, where Moelven buys timber directly from the forest owner, the efforts to highlight the advantages of certification form an important part of the purchasing organisation's marketing work. We also place great emphasis on playing an active role in the development of certification standards, based on our knowledge of Scandinavian forestry.

#### Raw material supply chain

The PEFC™ Chain of Custody and FSC® Chain of Custody certification schemes ensure traceability of certified raw materials throughout the value chain. It must be possible to trace raw materials back to certified sources in order for Moelven to sell certified products.

#### Product certification and product documentation

Product documentation requirements are constantly increasing both as a result of legislative requirements and due to increased demand from customers. In addition to adhering to all legislative requirements, Moelven also places great emphasis on the products' environmental documentation. An EPD (Environmental Product Declaration) is a third-party verified document that provides transparent and comparable information about the product's environmental performance throughout the entire life cycle. Both EPDs and the underlying LCA (Life-Cycle Assessment) are always based on international standards.

#### Environmental certification of buildings

Developers decide whether finished buildings should be certified and under which certification scheme. In recent years, there has been a clear increase in the demand for certified buildings. Those who will be using the building often request certification and the financing opportunities are often greater for certified buildings. In order to help create value on the part of those of our customers seeking to certify buildings that include Moelven products, Moelven works to produce and document products with environmental benefits that provide customers with the best possible starting point when the finished building is ready for certification.

The most common building certification schemes used by Moelven customers are

BREEAM and the Nordic Swan Ecolabel.

#### External reporting

An increasing number of market participants are demanding standardised sustainability reporting. The fact that sustainability reporting is becoming standardised, transparent and publicly available is important both in order to assess individual parties' sustainability efforts, but also in order to more easily identify areas in which parties can collaborate to achieve improvements, together. Moelven reports sustainability data to the following voluntary reporting bodies:

- Carbon Disclosure Project (CDP)
- EcoVadis
- Global Compact

#### Transport

Transport constitutes the largest individual cause of CO<sub>2</sub> emissions at Moelven, both within our own industrial activities in the form of internal transport and upstream and downstream in the value chain in the form of transport from suppliers and transport to customers. Our most important measures for making transport more sustainable include:

- Requirement for modes of road transport to meet EURO class 6 from 2022.
- The use of modular vehicle combinations, leading to fewer transport operations and less emissions per transported unit.
- Digitalised logistics planning to optimise driving routes and minimise driving when empty.
- Electrification of internal transport.
- Use of rail and sea transport where feasible.
- The procurement of biogas-powered lorries to trial technology and practical application.
- A project has been started to trial electrified local distribution in cities and urban areas.

#### Resource optimisation

Moelven is a resource-intensive industrial company. The timber processing part of the Group consumes around 4.5 million m<sup>3</sup> of saw logs as raw material in its own production each year. In order to say that our products are climate-smart, we cannot only use natural renewable and sustainable raw materials, in fact it is crucial that we optimise production to ensure that nothing goes to waste. In this way, we help ensure that natural resources are not wasted through unnecessary deforestation. Our most important measures when it comes to optimising raw material use include:

- Optimisation of raw material acquisition by ensuring that the felling machinery used in the forest cuts saw timber to lengths that corre-



- spond to the products they will later become.
- The use of modern optimisation equipment such as cameras and X-ray sorting.
- LEAN principles and projects.
- Detailed KPIs linked to resource optimisation.

#### Bioenergy

Moelven has set itself a target of providing at least 95 per cent of the thermal energy needed for the heating of premises and drying of timber from self-produced bioenergy. When bioenergy replaces fossil energy sources, this helps reduce greenhouse gas emissions. This means that it is also important that we streamline our own bioenergy consumption so that as many bioenergy fuels as possible from timber processing can be converted externally to replace fossil sources of energy.

Our most important measures within the area of bioenergy include:

- The investment programme to streamline energy consumption for timber drying.
- The phasing out of fossil sources of energy for thermal energy and replacing these with bioenergy.

#### Electricity consumption

Moelven consumes a considerable amount of energy. Although around 75 per cent of this is covered by self-produced bioenergy, the Group still uses around 235 GWh of electrical energy each year. Not only does this represent a large cost, it is also a source of CO<sub>2</sub> emissions. Our most important measures to reduce electricity consumption include:

- The investment programme to streamline energy consumption for timber drying.
- Digitalisation and the use of BI systems to optimise operations.

- Transition to LED lighting.

#### Waste

By sorting as much as possible and by facilitating reuse and recycling, Moelven helps create a more sustainable and circular material cycle. Our most important measures to reach our target of a sorting ratio exceeding 90 per cent for the Group and individual entities over time include:

- Group agreements with waste management companies to facilitate better sorting in more fractions.
- Collaboration with the supply chain on return schemes for purchased raw materials that can be recycled.
- KPIs linked to waste volumes and sorting ratios.

#### Plastic consumption

Moelven uses large volumes of plastic in its activities. Most of this is used as packaging in order to maintain the quality and characteristics of products and to protect them against weather and wind. Plastic has many good qualities when used as a packaging material, but also represents an environmental challenge when it goes astray in nature as waste or microplastics or as a source of CO<sub>2</sub> emissions when burned. Moelven has a target to reduce plastic consumption and make this more sustainable. Our most important measures to achieve this include:

- Transition to plastic types based on a higher proportion of recycled plastic.
- Trialling plastic types manufactured from biological materials.
- Collaborations with customers and suppliers to create supply chains that reduce or eliminate the need for packaging.



# The big picture

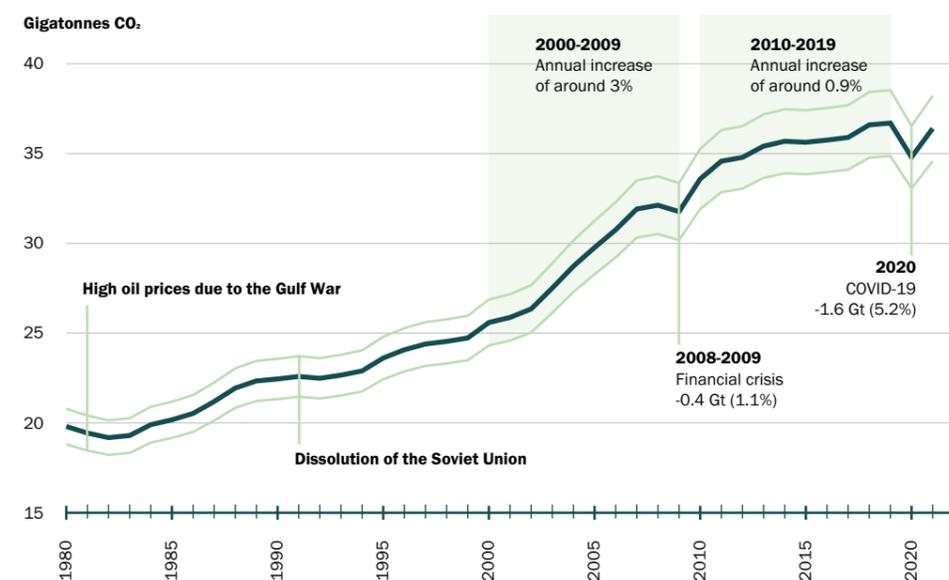
## 2022 – the year for climate action?

2021 became another year of climate records in a negative sense. Extreme weather and flooding in both Norway and Sweden served to show how vulnerable we are to climate change even in our part of the world.

In the latest climate report from the UN, researchers state that the 1.5 degree increase limit set down in the Paris Agreement will undoubtedly be surpassed before 2040. The average temperature has already increased by 1.1 degrees since pre-industrial times. Depending on how well the global community succeeds in reducing greenhouse gas emissions, the temperature increase will, in certain scenarios, be partially reversed so that the 1.5 degree limit can be met in the slightly longer term. However, if we

fail in reducing emissions, researchers believe that we are heading towards a temperature increase of no less than 2.7 degrees. Such a temperature increase will have drastic consequences for the Earth's ecosystems, with the Secretary General of the UN, António Guterres, referring to the report as a "code red" for humanity. The UN estimates that 3.3 to 3.6 billion people and a high proportion of biodiversity on Earth are extremely vulnerable to climate change.

Thankfully, the goal of limiting global warming to 1.5 degrees can still be met, but it requires world leaders to act immediately. While the evidence shows that the climate crisis is both man-made and very much real, the pressure on politicians to solve the climate crisis we face is also increasing worldwide.

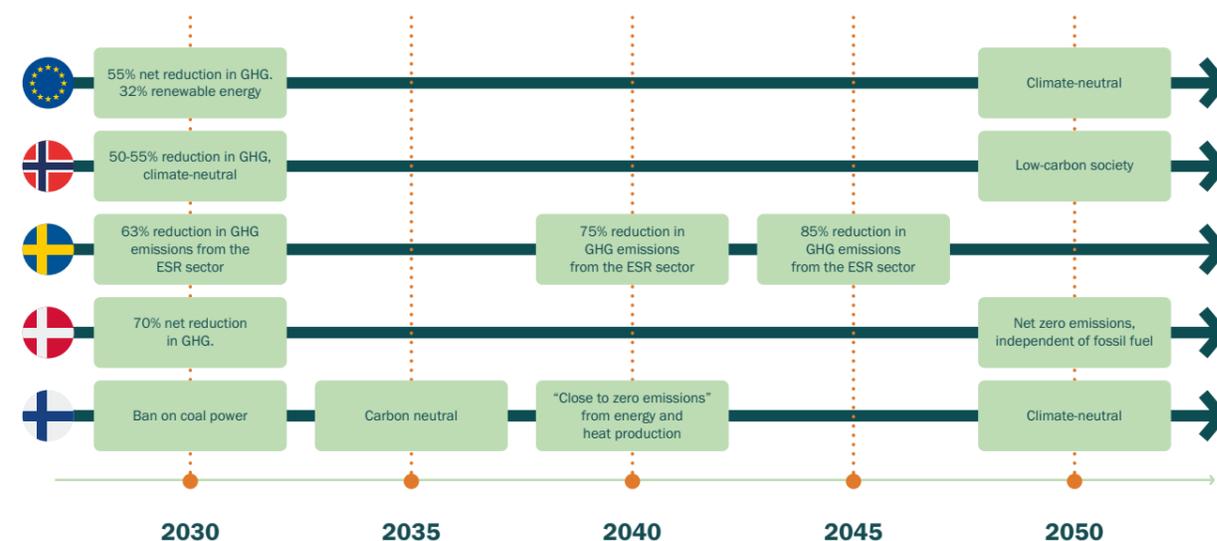


Global CO<sub>2</sub> emissions from fossil sources. Narrow lines indicate 5% uncertainty in the calculations. In order to achieve net zero emissions by 2050, the world is dependent on annual emissions being reduced by at least as much as during the COVID-19 pandemic each year as an average from 2022 to 2050. Source: Global Carbon Project, worldometers.info

The global community has repeatedly demonstrated a formidable ability to take action. Both the COVID-19 pandemic and now also the Russian attack on Ukraine have been met with significant action from the global community.

While there is great momentum during urgent crises, the same is not always the case when we look at the challenges we will face in the future. The climate crisis has developed slowly over

several decades, but has now reached a scale that requires action. An increasing number of countries are adopting climate acts to enshrine ambitious improvement targets. These targets relate not only to greenhouse gas emissions, but also to areas that affect the other UN Sustainable Development Goals, such as the protection of land, use of plastics, waste management and the circular economy.



This is great news and provides a basis for some optimism for the global community. For us as individuals in Scandinavia, this may lead to certain products and services becoming more expensive and some may even be completely lost. Nevertheless, this is a small price to pay if this is what it takes for future generations to also benefit from a planet that is as similar as possible to the one we know today. For companies like Moelven, it is not only the regulatory changes, but also the demands set down by stakeholder groups such as customers, suppliers, employees, the local community, etc. that will have a major impact on the direction of future operations and strategic development. Many framework conditions will undoubtedly change in a direction that means

that operations will become more demanding and costly. Already, the increase in energy prices and transportation costs are evident. These changes will also lead to opportunities for those companies that have the conditions and ability to make use of these. At Moelven, we are convinced that a sustainable and renewable material like wood, with its natural ability to absorb and store carbon, provides us with a fantastic starting point for being part of the solution to the climate crisis. Our most important task is therefore to manage and refine the raw material we harvest from the forest with minimal climate footprint so that we and our products remain climate-positive.

Source: The Danish Ministry of Climate, Energy and Utilities, the Finnish Ministry of Environment and Climate Change, the Norwegian Ministry of Climate and Environment, the Swedish Ministry of the Environment, Danske Bank, the European Commission

## The EU's green deal, the taxonomy and corporate reporting

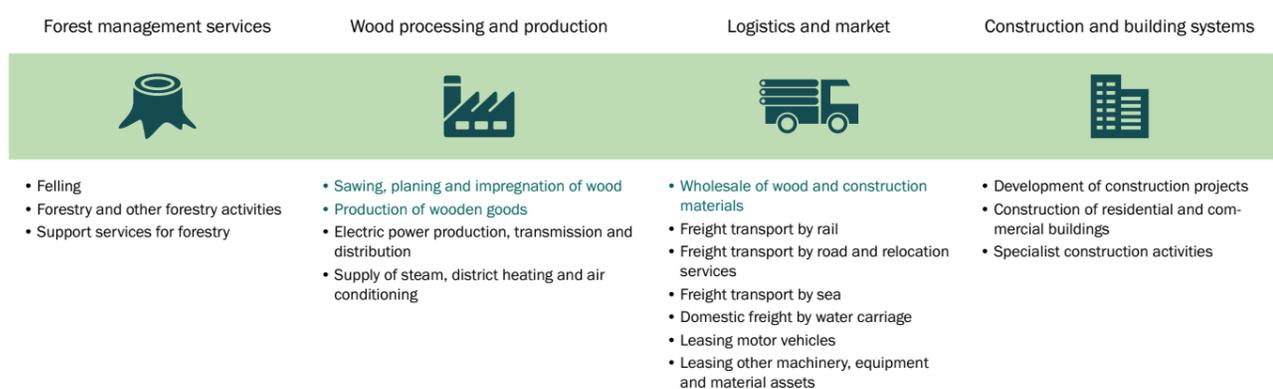
The European Green Deal was launched by the European Commission at the end of 2019 and is a strategy for the EU to transition to a modern, competitive zero-emission economy in which economic growth is linked to the extraction of natural resources by 2050. In April 2021, the EU member states agreed on a climate act for the EU, which sets down in law that net greenhouse gas emissions will be reduced by at least 55 percent from 1990 levels by 2030. In July 2021, the Commission presented a series of bills under the "Fit for 55" heading relating to changes to most

aspects of the EU's climate and energy policy. This package was supplemented with new proposals in December 2021. Action plans and strategies are being launched continuously within industry, building renovation, biodiversity, food production, transport and energy production. New jobs will be created in sectors such as renewable energy, production of electric vehicles and a sustainable construction sector.

The taxonomy is an important tool in the EU Green Deal and the main aim is to utilise finance as a tool to steer societal development in a



### Moelven value chain



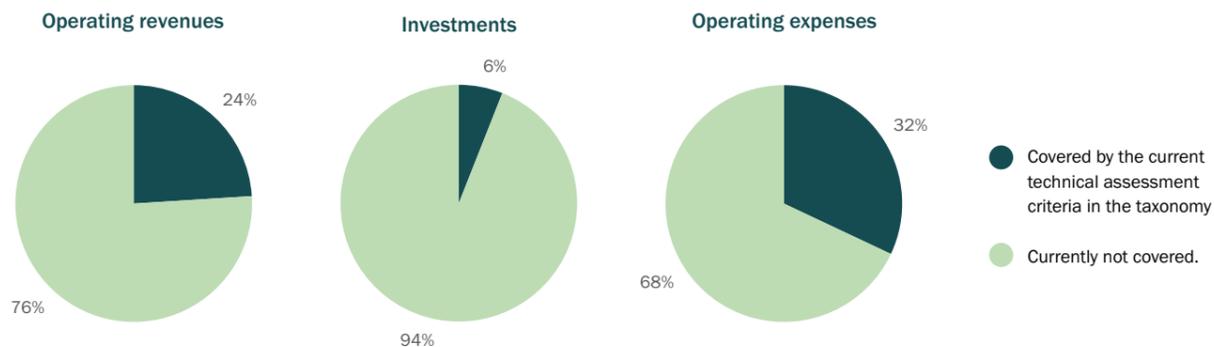
These items represent financial activities in the Moelven value chain. The items shown in black represent taxonomy-eligible activities and for which assessment criteria have been developed. The items shown in turquoise represent activities for which no assessment criteria have been developed yet.

sustainable direction. Simply put, the taxonomy comprises a set of assessment criteria that will form the basis for defining what constitutes a sustainable activity. Accommodations will be made to ensure that activities that satisfy the criteria for sustainability have access to better capital, more favourable taxes, easier access to the market, etc. than activities that do not meet the criteria.

In recent years, there has been a clear trend for financial institutions and investors to prioritise sustainable companies.

In order for an activity to be classified as sustainable, the activity must meet the following criteria:

1. Substantially contribute to at least one of the six environmental objectives:
  - a. Climate change mitigation
  - b. Climate change adaptation
  - c. Sustainable use and protection of water and marine resources
  - d. Transition to a circular economy
  - e. Pollution prevention and control
  - f. Protection and restoration of biodiversity and ecosystems
2. Do no significant harm to any of the other five environmental objectives
3. Comply with minimum safeguards



The figure above shows how large a proportion of the Group's operating income, operating expenses and investments are covered. No assessment has been performed to establish whether the criteria can be classified as sustainable in accordance with the strategy. This work will take place during 2022.

Using the assessment criteria that are currently in force, the largest individual areas covered by the taxonomy are Moelven's activities within construction and civil engineering, as well as forest management. Construction and civil engineering activities largely take place within the Building Systems division. Forest management falls under the Other Businesses area, where it is linked to timber purchases and forest management assignments that Moelven assumes in connection with this.

Currently, assessment criteria have been drawn up and approved covering 13 sectors and 101 activities.

Based on these, Moelven conducted a survey in 2021 to identify which activities within the Group's value chain would be covered by the taxonomy as of 2021.

The EU has issued a proposal for a new reporting directive, the Corporate Sustainability Reporting Directive (CSRD), which requires listed companies and large corporations in the EU to publish extensive information about their business models, strategies, corporate governance, objectives, guidelines and internal control in relation to sustainability, risk assessments and how social and environmental challenges are managed. Although the requirements have so far been aimed directly at large corporations and

financial players, smaller organisations may also be indirectly affected through requirements from e.g. financial stakeholders and customers that are covered by the regulations.

Frameworks such as the taxonomy and CSRD will hopefully help clarify the direction of sustainability work, thereby making it easier to work together to achieve the sustainable development goals and, not least, lead to the necessary changes being implemented more quickly. It must also be expected that national rules and requirements will be adapted to developments within the EU. For Moelven, this means that we will perform a more thorough review of our objectives to ensure that we are working in line with the framework and actively playing our part in working together to achieve the sustainable development goals.

### Stakeholder analysis



### Moelven's priorities and objectives

At Moelven, we have prioritised our sustainability efforts based on the impact they have on the world and on us. We have also emphasised the areas in which we can make the greatest difference. In order to prioritise, we have conducted a stakeholder analysis in order to identify

which stakeholder groups are impacted the most by our activities and what these stakeholders care about. We have also conducted materiality analyses in order to determine which areas have the greatest impact for both Moelven and the stakeholder groups.



To help further prioritise this work, the different topics under each focus area have been classified as follows:



Most of our activities are based around a natural, renewable raw material, which is also nature's own solution for carbon capture and storage, namely wood.

The most important aspect of our sustainability strategy is therefore to work to refine the raw material with the smallest possible climate footprint and to work to ensure that the highest possible proportion of our finished products become part of permanent buildings and structures so they can continue to store carbon for as long as possible. Around five to six times as much carbon as the company releases is bound by the Group's annual production of sawn timber.

The electricity we buy in Scandinavia is largely environmentally friendly and renewable compared to many other places around the world. Increasing transmission capacity to and from abroad does, however, mean that the power systems are interconnected. An important aspect of the Moelven sustainability strategy is therefore to streamline electricity consumption. This work is ongoing, with a primary emphasis on the use of modern control systems to eliminate waste and prioritising energy efficiency when buying new production equipment. Nevertheless, there are areas in which increased electrification is considered the most important measure to reduce direct CO<sub>2</sub> emissions. For Moelven, this primarily relates to internal transport, which is the single largest cause of Scope 1 emissions from business activities. By replacing diesel-powered trucks and construction machinery, emissions can be reduced, but this would also lead to an increase in electricity consumption. Nevertheless, the reduction in CO<sub>2</sub> emissions due to lower diesel consumption will be greater than the increase in CO<sub>2</sub> emissions due to increased electricity consumption. For this reason, Moelven is prioritising reducing direct CO<sub>2</sub> emissions from business activities.

The main focus areas of the Group's sustainability work are described below. In order to ensure that this work has a clear direction and in order to place our efforts into a global context, we have linked these focus areas to those of the UN Sustainable Development Goals that Moelven has the greatest opportunity to help influence and make a difference to.

• **Climate-smart products and services**

In order for Moelven and the materials we produce to be climate-positive, we need to continuously work to reduce CO<sub>2</sub> emissions, improve the efficiency of the energy consumpti-

on in our production and optimise raw material consumption. The higher the proportion of our products that are included in permanent buildings and structures, the more CO<sub>2</sub> we help remove from the atmosphere.

• **Safeguarding natural resources**

In order to ensure that our company contributes to safeguarding natural resources, we must ensure that we use renewable resources and that we take full advantage of them. Safeguarding natural resources also means looking after biodiversity. We do this by ensuring certifications and quality assurance in the supply chain, all the way from the forest to the market. Through the documentation work required by the certifications and the reporting of environmental data, we ensure that we are able to prioritise the work and direct our efforts to the right areas, while also ensuring that our customers and the general public know what it means for the climate and the environment when you buy and use products and services from Moelven. As well as optimising production with regard to efficiency and the exploitation of raw materials, residual raw materials and waste must also be sorted and managed in such a way as to facilitate reuse and recycling.

• **Focus on people**

We aim to be a safe and attractive workplace and we will ensure that our business activities and products are not harmful to people, biodiversity or ecosystems.

• **Local value**

We will create more green jobs. We do this not only by ensuring long-term and green value creation in our own business. We also contribute to the green transition through our community contributions in the form of the taxes and charges we pay and the ripple effects that are created in local communities through our use of local subcontractors.



**GLOBAL REPORTING INITIATIVE**

We used the Global Reporting Initiative's guidelines as the basis for conducting the analysis that formed the basis for the selection of the priority areas, important topics relating to the priority areas and in drawing up the sustainability report.

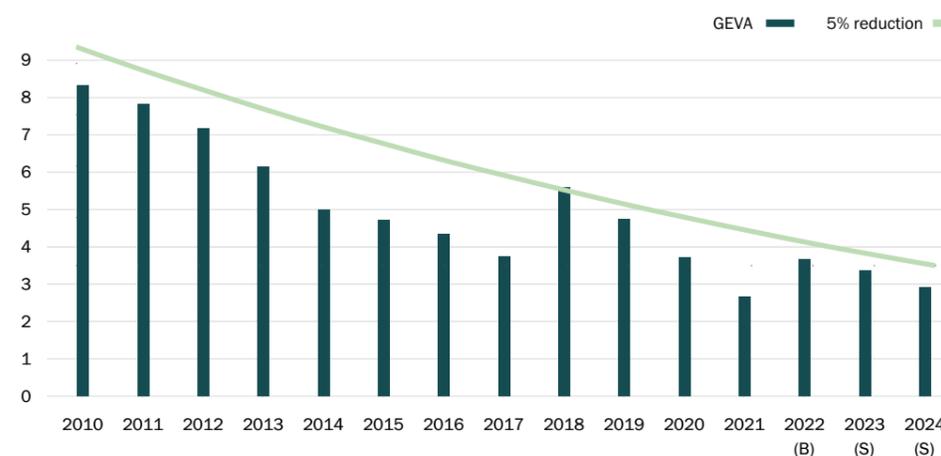
We have established specific targets for the sustainability work in the short-term. These are described in more detail under each topic in this report.

The same period applies to the targets that applies to the current strategy plan, i.e. up to and including 2024. One of the means Moelven uses to monitor developments in the longer term, up to 2030 and beyond, is greenhouse gas emissions measured by GEVA (greenhouse gas emissions per value added). This is an expression of the relationship between greenhouse gas emissions and added value. Research show that if we achieved an annual global reduction of five per cent, i.e. that greenhouse gas emissions would be less compared to value added, it would be

possible to achieve several of the goals set down in the Paris Agreement at the same time. Reducing the carbon footprint benefits the climate and environment, while value creation is necessary in order to generate financial growth and opportunities to achieve the other sustainable development goals, such as increasing levels of education, improving health and combating poverty. Moelven has tied its sustainability strategy to the sustainable development goals set down in the Paris Agreement and is thus committed to working towards such a reduction.

**Moelven Group**

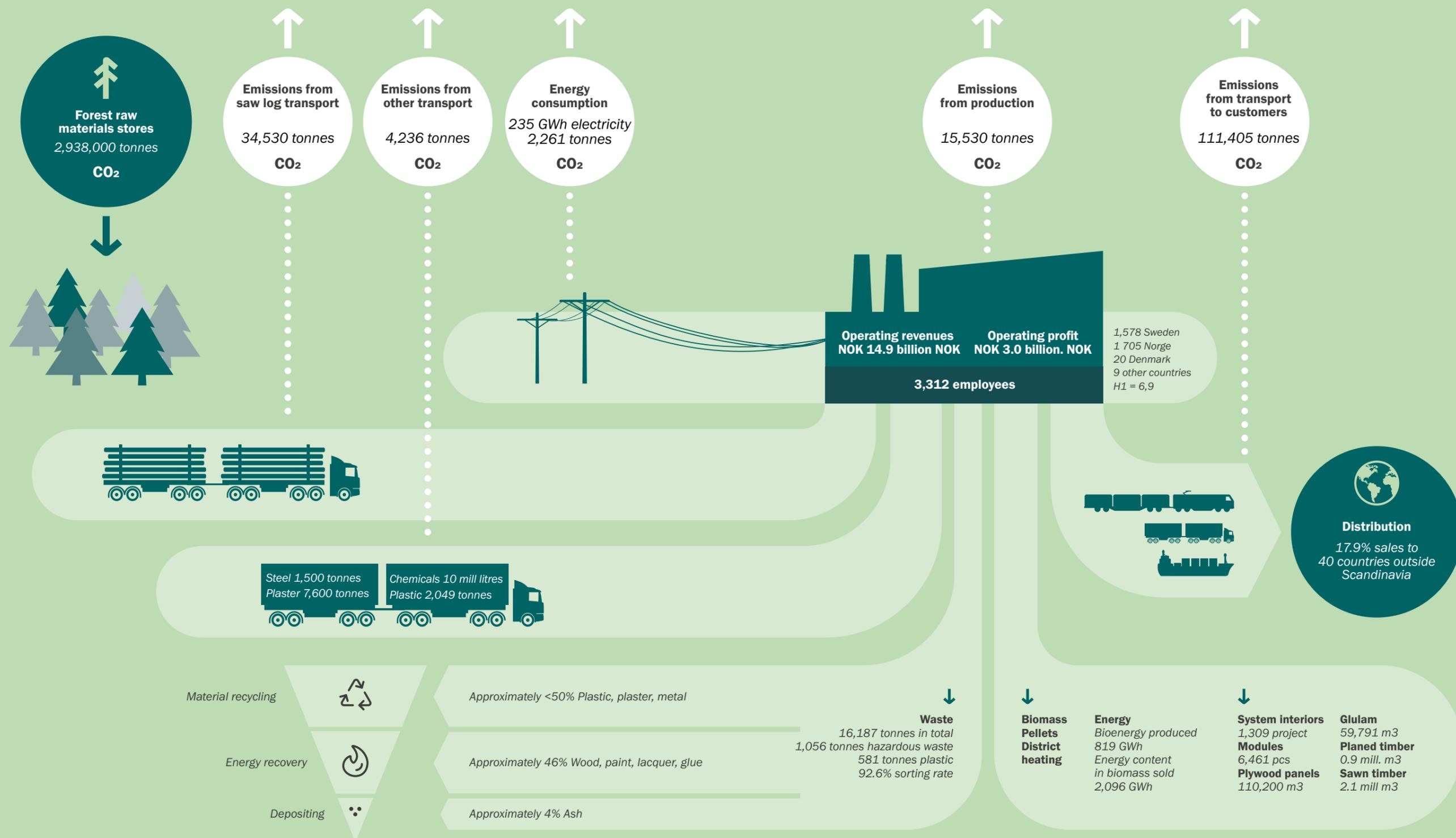
Realised GEVA for the period 2010-2021  
Budget and strategy 2022 - 2024



The columns show the GEVA value for Scope 1 emissions from Moelven's business activities. The green line shows the long-term target of an annual reduction of 5 per cent. In 2021, this value decreased significantly, despite the fact that the direct emissions from activities actually increased. This is because the increase in value creation was significantly greater than the increase in emissions. The GEVA value is expected to increase again in 2022 as a result of lower value creation. Nevertheless, the total value will still fall within the long-term target of an annual reduction of 5 per cent.



# Climate-smart, sustainable value creation



# Priority areas, results and goals

**Basic premise**  
- we are a reliable partner

Four priority areas	Important topics	Results			Goals and priorities	
		2019	2020	2021	2025	
 <p><b>13 CLIMATE ACTION</b></p> <p><b>We and our materials shall be climate positive</b></p>	<ol style="list-style-type: none"> <li>1. Energy consumption in own production</li> <li>2. Goods transport</li> <li>3. Production of bioenergy</li> <li>4. Climate benefits from the forest</li> <li>5. Climate-smart design</li> </ol>	<p>Electricity consumption (GWh)</p> <p>Carbon footprint (tCO<sub>2</sub>e)</p> <p>Carbon stored in finished goods (tCO<sub>2</sub>)</p> <p>Transport</p>	<p>229</p> <p>138,570</p> <p>1,469,283</p>	<p>249</p> <p>159,888</p> <p>1,576,605</p>	<p>235</p> <p>168,862</p> <p>1,484,288</p>	<p>Reduce CO<sub>2</sub> emissions per unit produced. 95 % of needs for thermal energy covered by self-produced bioenergy.</p> <p>156,500</p> <p>5 % annual reduction in carbon intensity.</p> <p>Digitalised logistics planning to optimise driving routes and minimise driving when empty. Trialling of transport methods based on renewable energy sources. Electrification of internal transport.</p>
 <p><b>15 LIFE ON LAND</b></p> <p><b>We shall use renewable resources and utilise the entire resource</b></p>	<ol style="list-style-type: none"> <li>1. Sustainable materials</li> <li>2. Resource optimisation</li> <li>3. Resource-efficient design and packaging</li> <li>4. Waste management in production</li> <li>5. Water consumption</li> </ol>	<p>Controlled raw material</p> <p>Recycled plastic (tonnes)</p> <p>Plastic consumed (tonnes)</p> <p>Sorting ratio</p>	<p>100 %</p> <p>387</p> <p>1,651</p> <p>85 %</p>	<p>100 %</p> <p>392</p> <p>1,909</p> <p>87.6 %</p>	<p>100 %</p> <p>581</p> <p>2,049</p> <p>92.6 %</p>	<p>Certify raw materials from sustainable forestry. 100 % controlled raw materials throughout the value chain</p> <p>Share of recycled plastic &gt; 30 %</p> <p>Collaborate with customers and suppliers on concepts to minimise the need for packaging. Development and testing of alternative packaging materials.</p> <p>90 % sorting rate for Group and all units</p>
  <p><b>3 GOOD HEALTH AND WELL-BEING</b></p> <p><b>4 QUALITY EDUCATION</b></p> <p><b>We shall be an attractive and safe workplace</b></p>	<ol style="list-style-type: none"> <li>1. HSE</li> <li>2. Involved and competent employees</li> <li>3. Safe chemical use</li> </ol>	<p>LTI</p> <p>TRI</p> <p>Rate of absence due to injury</p> <p>Risk reports</p> <p>Absence due to illness</p> <p>Employees</p> <p>Apprentices</p>	<p>11.3</p> <p>34.8</p> <p>207.5</p> <p>3,208</p> <p>5.40 %</p> <p>3,399</p> <p>31</p>	<p>11.7</p> <p>25.1</p> <p>256</p> <p>3,843</p> <p>6.20 %</p> <p>3,391</p> <p>30</p>	<p>6.9</p> <p>21.2</p> <p>184.6</p> <p>7,265</p> <p>5.6 %</p> <p>3,312</p> <p>31</p>	<p>&lt; 4</p> <p>&lt; 16</p> <p>&gt; 1.2 per employee</p> <p>&lt; 4.0 %</p>
 <p><b>8 DECENT WORK AND ECONOMIC GROWTH</b></p> <p><b>We shall create more green jobs</b></p>	<ol style="list-style-type: none"> <li>1. Economic value creation in local communities</li> <li>2. The local environment</li> </ol>	<p>Total tax contributions in Norway and Sweden (MNOK)</p> <p>Estimated social contributions (MNOK)</p> <p>Direct jobs</p> <p>Violation of the Pollution Control Act or equivalent legislation</p>	<p>828</p> <p>4,235</p> <p>3,399</p> <p>None</p>	<p>931</p> <p>5,004</p> <p>3,391</p> <p>None</p>	<p>1,450</p> <p>7,308</p> <p>3,312</p> <p>None</p>	<p>Sustainability is one of the four cornerstones of the Moelven strategy and will be included as a decision-making criterion in connection with investments and the development of the Group.</p> <p>Moelven shall not be responsible for any violation of the Pollution Control Act or equivalent legislation. Moelven shall continuously work to improve its environmental footprint in the local community</p>



# Climate risk

The landscape of risk is changing both for Moelven and society at large. The climate and environmental crisis has been a central issue for several years and climate risk is now high on the agenda of both businesses and public authorities. The social changes that will come to the fore as a part of the work to limit negative climate change may entail severe negative consequences for those that fail to take part in the transition. At the same time, great opportunities are arising for those that contribute to the green transition. In 2020 and 2021, the world experienced how a pandemic can quickly have major consequences, not only for life and health, but also the world economy. Population groups have been differently affected, often with the most severe consequences for those who initially were weakest. Industries and companies went from a boom to a virtual full stop in activity in a matter of months, while others thrived. Climate change could affect the world community in the same way, but over a longer period of time, which makes us more capable of limiting the impact.

## Management

### The Board of Directors' role

The Board of Directors' responsibilities and tasks follow current legislation and the rules of procedure for Moelven Industrier ASA. The Board of Directors has the overall responsibility to ensure competent control of the company's operations. The relationship to climate risk and climate opportunities falls within this. In accordance with the current rules of procedure, the Board annually reviews and adopts the company's policy for sustainable operations and code of conduct. These provide guidelines for how Moelven shall integrate considerations to the outside world in value creation. The sustainability policy also stipulates that Moelven shall publish its results and progress in the area through an annual sustainability report. The Board of Directors considers and adopts the sustainability report. No separate board committees have been established with regard to climate risk and sustainability.

### The role of management

The CEO is responsible for the day-to-day management of Moelven's operations and follows the guidelines provided by the Board.

Monitoring and control of climate and sustainability issues is organised under economy and finance in corporate management, where responsibility for internal control and risk management is otherwise located. In addition group- and/or division-wide functions for control

and follow-up have been established where this is appropriate. Examples are raw materials supply, the raw materials certification schemes PEFC™ and FSC®, energy follow-up and HSE.

There are also examples of climate related issues that are closely integrated in the day-to-day operational activities. This applies in particular to product certifications, operation permits, etc. Moelven has a decentralised organisational model where most of the operative units are independent legal entities. The local boards and company management have independent responsibility for the follow-up of climate and sustainability issues at the unit level.

## Risk management and strategy

During 2021 Moelven established a new risk policy for the Group, which will strengthen efforts to work systematically on managing the Group's key risks and opportunities. Sustainability and climate risk fall under this.

In this area, international reporting recommendations have also been presented by the "Task Force on Climate-related Financial Disclosures (TCFD)" initiated by the G20 countries' "Financial Stability Board" in order to help companies and owners better understand how climate change affects management, strategy, risk and objectives. Moelven has taken inspiration from these recommendations in its analysis of climate risk and opportunities.

When assessing climate risk, Moelven applies the following short-term, medium-term and long-term time perspectives: Short-term 0-5 years, medium long-term 5-10 years and long-term 10-30 years. The definition follows the time frame stipulated by the IEA in the World Energy Outlook. The short-term viewpoint is in line with Moelven's current strategic period. In the medium term, the business and assets are considered in terms of potential trends and risks towards 2030, with a change in global policy and markets relating to climate action. The long-term view is also relevant as several European countries have existing targets of virtually zero emissions in 2050. Both Norway and Sweden have committed to emissions cuts through the 2015 Paris Agreement. In June 2017, Norway adopted the Climate Act and in 2021 the central target for reducing net greenhouse gas emissions by 2030 was raised to at least 55 per cent from the reference year of 1990. In addition, Norway shall be a low-emission society in 2050 with a reduction in greenhouse gas emissions of 80-95 per cent. In 2021, the EU also adopted climate legislation that established that net greenhouse gas emissions must be reduced by at least 55 per cent from 1990 levels.

The results of the assessment of climate risk and opportunities have been evaluated by the Group Executive Board and the Board of Directors and these assessments help form the basis for strategic and operational discussions. Further work on risks associated with the climate and other sustainability issues will be carried out and developed in line with the Group's risk policy and international recommendations.

## Identified risks

Moelven's climate risk generally relates to physical risks or transitional risks resulting from the transition to a zero emission society.

Physical climate risk arises from changes to the weather and climate. With regard to Moelven, this will mainly affect raw material access and the frequency and severity of flooding. Raw material access may be influenced by extreme weather, which could potentially harm standing forests, which in turn could have an impact on quality, price levels and access to timber. One example is hurricane Gudrun in 2005, which felled forests equivalent to one year of ordinary harvesting in Sweden. Harvesting can be influenced by mild and wet winters due to accessibility challenges in the forests. This risk has affected Moelven in the past and it is assumed that the risk level will increase in line with climate changes. Forest fire is a risk factor that increases in line with increased average temperatures and drought periods. More extreme weather can also cause challenges for outdoor storage of materials and leads to increased requirements for certain end products. Flooding can also damage several of Moelven's sawmills that are situated in close proximity to rivers and waterways. These are known problems that have been subject to strategic work for many years.

Transitional risk constitutes a risk to Moelven in several areas. Changes to policy regulations and the increasing demands for sustainable solutions in society and markets alike lead to changed framework conditions for the business.

Moelven also faces a potential reputation risk, where there are great expectations that the forestry industry and bio-economy shall act as an accelerator for the green shift. In order for this to materialise, it is important that the instruments made available by the authorities help the industry to further develop through appropriate and long-term framework conditions. New requirements are being considered at EU level with regard to sustainable management and harvesting of forests and these could potentially have consequences for Moelven's access to raw materials and operations, as well as external

stakeholders' views of Moelven.

Moelven's activities entail a significant transport requirement for raw materials into the production units, and finished goods and by-products out from the production units and to the markets and customers. Moelven has, for a long time, been building up a significant logistics operation to handle this via road, rail and sea. Moelven undertakes ongoing work to streamline logistics and to be at the forefront of sustainable developments. Environmental requirements may nevertheless put pressure on parts of this business, both in the form of orders and restrictions, as well as price changes and fees. The transport industry is affected by international conditions and changes to international framework conditions for the transport industry may also have an impact on Moelven's logistics operations.

The timber processing industry requires large amounts of energy, especially for the drying of timber. The majority of these energy needs are met through self-produced bioenergy, but we also purchase around 235 GWh of electricity each year. Changes to electricity prices resulting from increased demand for energy and the transition from fossil to renewable power will therefore affect Moelven.

Today wood materials are perceived to be among the most sustainable construction materials, but Moelven can risk increased competition in the area due to technology developments in other sectors. Examples are the use of carbon capture in the cement and concrete industry or the use of sustainable hydrogen in steel electrolysis. Moelven has little impact on this risk, but already has a well-established brand as a manufacturer of sustainable building materials. The risk is already present, with competing products that are clearly marketed as sustainable. The risk is expected to increase if carbon capture within the cement industry and emission free production of steel becomes more common in large scale.

Many claim that climate and environmental change may contribute to the increased prevalence of diseases that we are unable to effectively treat with current medicine and which will thus develop into pandemics like the one we are currently experiencing. This has not been taken into account in Moelven's climate risk and opportunity mapping.

Moelven works actively to mitigate identified risks, as summarised in the table on the following page:



#	Risk	Risk type	Risk description	Risk level	Ability to impact	Time perspective	Risk-mitigating measures
A	Unpredictable access to raw materials	Acute physical climate risk and chronic physical climate risk	Physical climate risk in the form of increasing droughts, storm and extreme precipitation levels in the Nordic region. The market balance in the entire value chain is disturbed as a result of supply side shock in the raw materials market. Increased risk of forest fires in the Nordic region. Unpredictable outbreaks of pests and fungus.	High	Low	Short-term/long-term (0-30 years)	Centralised and competent purchasing organisation with a solid market position and a presence in a large geographical area. Ability to manage the raw material flows between units for the best possible utilisation.
B	Extreme weather damage to industry and infrastructure	Physical acute climate risk	Larger and more frequent extreme weather events in the Nordic region. Damage or need for preventive measures that e.h. are limited to a geographical area will impact competitiveness.	High	Medium	Short-term/long-term (0-30 years)	Flood embankments, contingency plans to both maintain deliveries and protection of plants and machinery. Strategic and continuous work for good quality and scaling of infrastructure (road and rail)
C	Changed raw material quality	Physical chronic climate risk	Increased temperature contributes to better growth conditions for trees, but also poorer quality.	Medium	Low	Long-term (10-30 years)	Contact and engagement with research communities. Internal competence development and product development.
D	The final product cannot withstand a more extreme climate	Physical chronic climate risk	Extreme weather requires more robust materials. Access to use effective impregnation agents may be limited to a greater extent.	Medium	Low	Long-term (10-30 years)	Product development, development of construction methods, cooperation with e.g. paint manufacturers.
E	Changed requirements for the storage of materials	Physical chronic climate risk	More extreme weather creates challenges in storing materials outdoors.	Medium	Low	Short-term/medium-term (0-10 years)	Building of climate storage, umbrella roofs, development of packaging materials.
F	Increased electricity prices	Market	Phasing out fossil sources of energy and transitioning to renewable energy. Increased transmission capacity to other countries and increasing demand for energy lead to increased electricity prices in Scandinavia	Medium	Low	Short-term/long-term (0-30 years)	Purchasing and hedging strategy.
G	Increased prices of fossil fuels	Statutes and regulations	Norwegian authorities increase the CO <sub>2</sub> tax to achieve goals of emission reductions in the transport sector.	Medium	Medium	Short-term/medium-term (0-10 years)	Build expertise on and exploit alternative energy sources.
H	Fossil fuels subject to emissions restrictions	Statutes and regulations	New regulations that impose requirements on the restructuring of operational forms or investments in new plants and equipment.	Low	Medium	Long-term (10-30 years)	Adopt new and improved technology for the production of biomass for energy purposes.
I	Construction materials from other industries become eco-friendly	Technology	Other sectors adopt new technology, for example CCS in concrete production.	High	Low	Long-term (10-30 years)	Work for constant improvement of own climate footprint and documentation of the overall climate footprint. Participation in research and development of objective and good calculation methods for climate footprint over time.
J	Changed perception of the role of forests in the green shift	Reputation	Increased knowledge and commitment to the role the forest plays in the green transition, as well as potential new management requirements lead to increased costs and place new demands on documentation and communication.	High	Medium	Medium-term (5-10 years)	Contribute to research and social enlightenment, active participation in industry and stakeholder organisations.

### Identified opportunities

The climate changes and the green shift provide significant new opportunities for Moelven. Sustainable forestry and the use of wood as a construction material are considered important instruments for the green transition. This leads to an increased demand for timber and excellent opportunities to expand the market and offer new

sustainable products and services. It is, however, difficult to quantify the opportunities, as these must be assessed on a case-by-case basis. Nevertheless, on a general basis, it is still assumed that the opportunities outweigh the risks.

#	Opportunity	Opportunity type	Description of opportunity	Financial impact
A	Increased energy efficiency in own production	Resource efficiency	Technology developments make it possible to increase the utilisation of resources in production processes. Note! Thermal and electricity.	Lower production costs. Income from sale of surplus heat
B	New regulations and improved infrastructure enable increasingly sustainable transport	Resource efficiency	Use of up to 74 ton road transport in Norway on the entire road network, including the forest truck roads will trigger a major rationalisation potential.	Reduced costs linked to transport
C	The use of renewable energy for own production	Renewable energy	Technology developments make renewable energy more efficient. Statutes and regulations facilitate the use of renewable energy	Lower production costs
D	Increased demand for bioenergy for heating	Market, products and services	Increased awareness among consumers about climate footprint for heating	Increased value of Moelven's products
E	Increased demand for wood-based products and materials	Market, products and services	Stricter requirements and expectations of climate-friendly buildings. Increased demand for raw materials that replace fossil fuels (e.g. fuel, plastics, etc.). Forest fires and pest damage disrupt market balance and lead to increased demand in certain regions in order to compensate for reduced access to products in other regions.	Increased market share and sale of Moelven's products. Increased income from a broader portfolio
F	Restrictions on imported wood	Market	Norwegian authorities implement restrictions on imported wood due to increased risk of the introduction of foreign pests	Less competition from foreign players. Increased market share
G	Increased growth of forests	Market	A warmer climate improves the growth conditions for forest in Norway and Sweden	Increased access to raw materials and lower prices
H	Changed raw material quality	Market	Increased temperature contributes to better growth conditions for forests, but also changes in quality. Depending on geography and customer segment, this may entail development opportunities.	Increased revenues from a more diverse product portfolio and/or greater volume.
I	Increased access to expertise and labour	Reputation	Increased attractiveness as an industry	Increased competitiveness



With its glulam roof from Moelven Töreboda AB, Arena Billingen is an impressive landmark in Skövde. The arena is home to an ice rink in winter and will for the rest of the year be a venue for exhibitions, concerts, sports competitions and other events. Photo: Søren Håkanlind

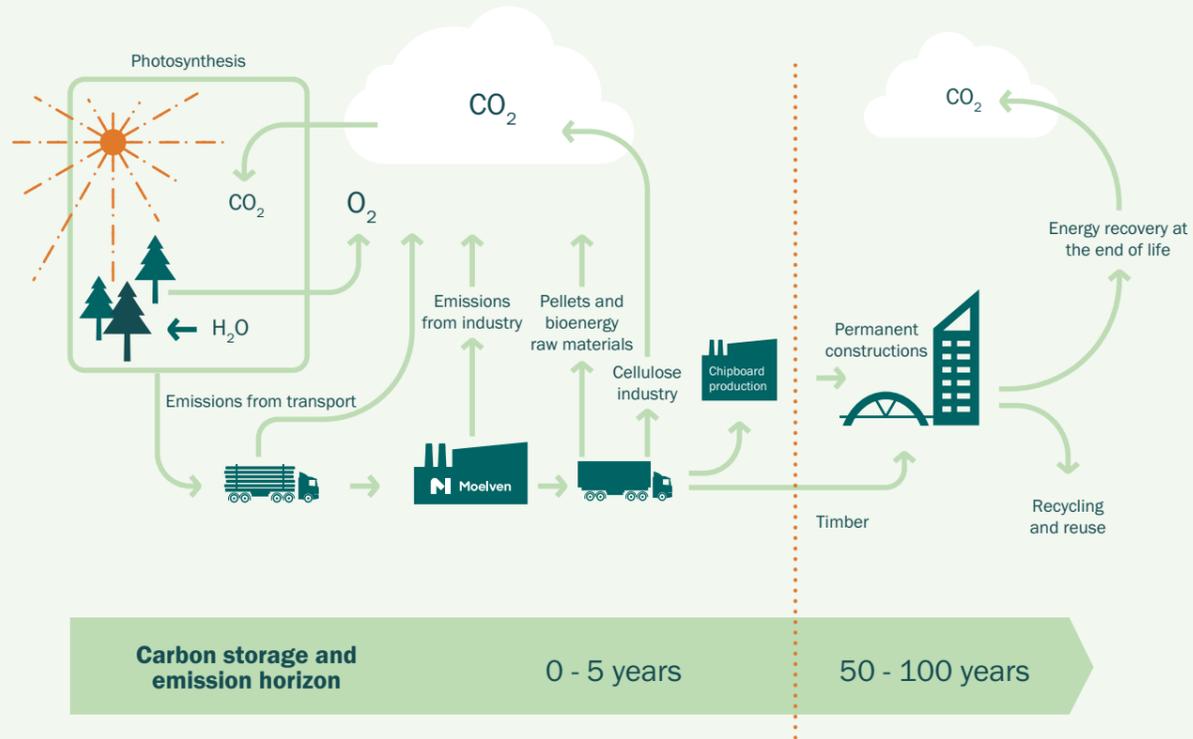


# Climate-smart products and services



## Ambition

We and the materials we produce shall be climate positive.



FOCUS AREA

## Climate-smart products and services

### UN Sustainable Development Goals



**Relevant sub-goals**  
**13.3** Strengthen the ability of individuals and institutions to counter, adapt and reduce the consequences of climate changes and their ability for early warning, and strengthen knowledge and awareness of this.

### Moelven's policy

- Moelven shall actively work to reduce its climate and environmental footprint.
- The environmental impact of transport must be minimised through coordination and optimisation of the product flow. The environment shall be considered in the choice of transport method and the group's current objectives for environmental standards shall be taken into account when choosing partners.
- Moelven shall have a good understanding of its role in the carbon cycle and demonstrate that we and our products are climate-positive.
- Moelven shall actively participate in technology and market developments in the bioenergy sector, and investigate alternative energy sources at those plants which burn fossil fuels for heating.
- Moelven's products shall undergo environmental assessments and certifications that meet the customers' and market's needs.

Moelven has supplied load-bearing structures made from glulam for Gardermoen airport in Oslo. Biogenic carbon corresponding to approximately 4,000 tonnes of CO<sub>2</sub> is stored in the wood, which equates to the CO<sub>2</sub> emissions from driving a passenger car around the world 500 times.



# Climate accounts

As of 2017, Moelven's climate accounts have been prepared in accordance with the GHG Protocol.

(Tonnes of CO <sub>2</sub> equivalents)	Change %	2021	2020
<b>Scope 1 (Direct emissions from own activities)</b>	<b>27.6%</b>	<b>15,541</b>	<b>12,235</b>
Fuel oil		880	501
Biofuel oil		1	0
Diesel		13,620	10,844
Biodiesel		-	26
Petrol		16	13
LPG (gas)		1,014	845
Moelven-owned goods transport (from supplier)		11	5
<b>Direct biobased emissions (outside scope)</b>	<b>8.3%</b>	<b>365,451</b>	<b>337,448</b>
Bark		214,630	191,148
Sawdust		19,160	22,655
Dry wood chips		91,749	86,293
Wood shavings		6,738	5,712
Cellulose chips		4,720	4,809
Pellets		335	297
Firewood		28,119	26,509
Biofuel oil		1	0
Biodiesel		-	26
<b>Scope 2 (Emissions related to electricity consumption)</b>			
Location-based calculation		2,261	2,360
Market-based calculation		89,989	95,582
<b>Scope 3 (Emissions outside the company)</b>		<b>151,061</b>	<b>145,293</b>
Goods transport to customers performed by third parties		111,405	111,334
Third-party goods transport (from supplier to Moelven)		38,788	32,989
Air travel		81	109
Work-related car transport		786	861
<b>Total emissions (scope 1, scope 2 location-based, scope 3)</b>		<b>168,862</b>	<b>159,888</b>
<b>Total emissions (scope 1, scope 2 market-based, scope 3)</b>		<b>256,590</b>	<b>253,110</b>

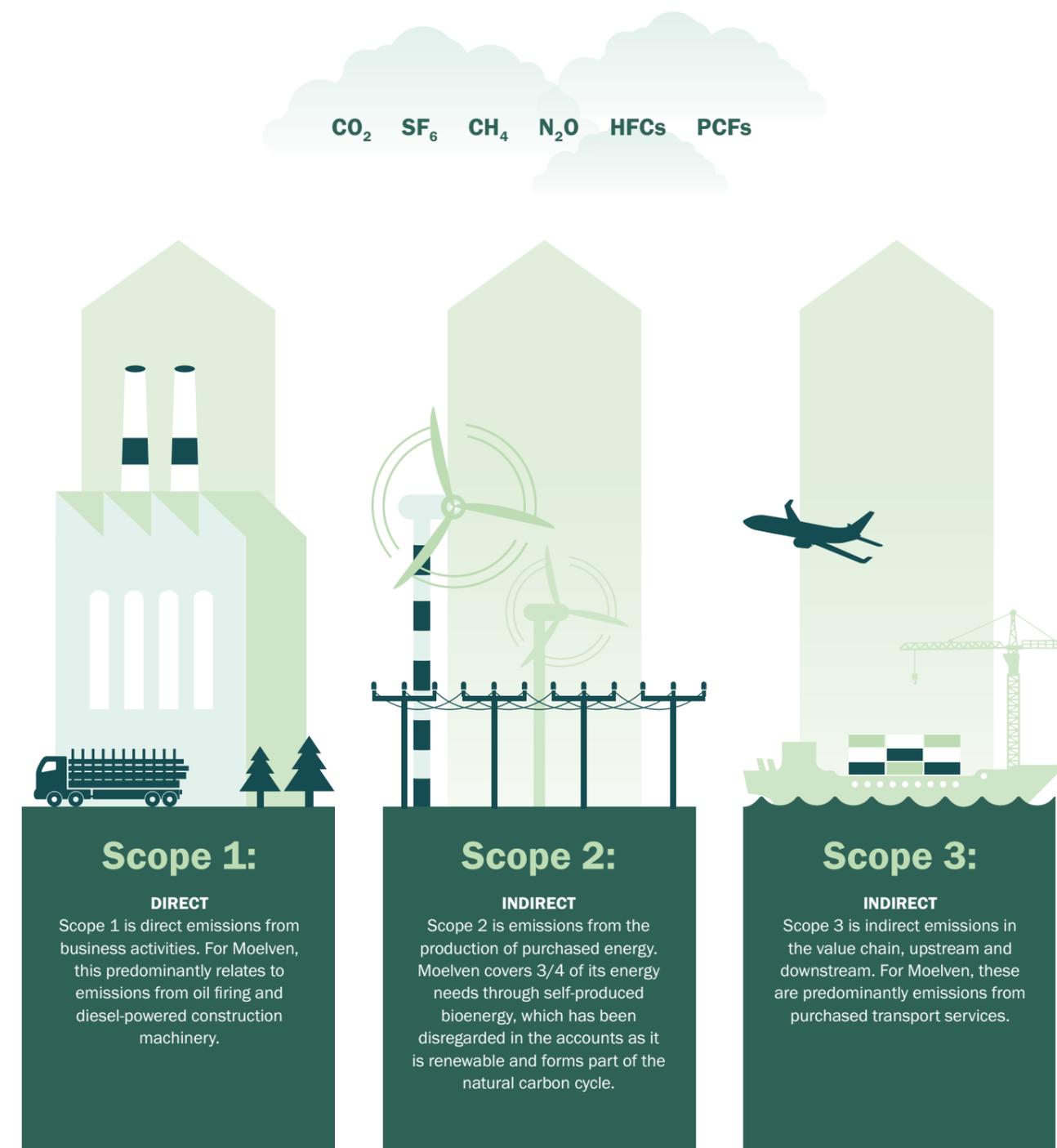
The Scope 2 figures for 2020 have changed compared to last year's sustainability report. This is due to a change to the conversion factor for CO<sub>2</sub> emissions from electricity, which constitutes a reduction of 1,254 location-based tCO<sub>2</sub>e /27,793 market-based tCO<sub>2</sub>.

The climate accounts are based on emissions of CO<sub>2</sub>, as no emissions of other greenhouse gases have been identified or quantified, such as CH<sub>4</sub>, N<sub>2</sub>O, HFC, PFC, SF<sub>6</sub> or NF<sub>3</sub>. Emission factors have largely been obtained from Defra (Department for Environment, Food & Rural Affairs, UK). Emission factors for electricity are based on NVE factors in Norway, Energinet.dk's factors in Denmark and Energimarknadsstyrelsen (EI) in Sweden. For location-based emissions from Swedish companies, IEA CO<sub>2</sub> Emissions from Fuel Combustion 2016 have been used.

For calculations of bio-based emissions, EN 16449 has been used, based on values from the Norwegian Institute of Wood Technology and Erik Eid Hohle (Bioenergi). The ownership principle, where Moelven is the invoice recipient for the activity, has been used for system delimitation.

# The climate accounts in brief

The GHG Protocol splits climate accounts into three focus areas: Scope 1, 2 and 3.



# Climate benefits from the forest – Carbon storage and bioenergy

## Where and why is it important?

A large proportion of Moelven's climate-smart products and materials are based on using wood as a raw material. Forests are part of the natural carbon cycle. The forest absorbs large amounts of CO<sub>2</sub> from the atmosphere through photosynthesis. Oxygen is released again, while carbon is stored in the wood until it rots or is burned. In this way, the forest acts as a natural carbon sink. The carbon that is released when raw materials from forests are used as a bioenergy source is part of the natural, short-term carbon cycle. This means that bioenergy does not add CO<sub>2</sub> to the atmosphere in the same way as fossil fuels, in which carbon has been stored for millions of years before it is released.

By contributing to efficient and sustainable forestry, Moelven can help increase the forest's ability to absorb CO<sub>2</sub> from the atmosphere and make the forest more productive, helping maintain the balance between annual harvesting and the growth of new forests. By optimising the utilisation of raw materials so that the largest possible proportion of timber becomes products that can be used in permanent buildings, Moelven contributes to ensuring that the carbon storage that starts in the forest continues even after the tree has been processed to become construction materials. The climate impact will therefore be positive.

## Policy and approach

Moelven's strategic plans and sustainability policy clearly state that the Group aims to use certified raw materials from sustainable forestry.

In Sweden, large proportions of timber are purchased directly from the forest owner. Moelven Skog AB is responsible for purchasing timber in Sweden and is one of the companies in the Group with the greatest opportunity to influence forestry operations. Moelven Skog AB's vision, "More TIMBER in forests", is about how the company can help maximise the potential of forests by working

with forest owners. This provides Moelven with access to more and better quality raw materials, while also providing forest owners with better returns. Moelven Virke AS is responsible for purchasing timber in Norway. Purchases are mainly made through forest owners' associations. Moelven Virke AS is thus not directly involved in felling or managing forests as Moelven Skog AB is. As a Group, Moelven nevertheless has a responsibility to its suppliers to treat and process the products in a sustainable manner and, irrespective of national borders, Moelven believes certification and traceability are very important when purchasing raw materials.

## Evaluation of results

The products manufactured by Moelven's timber-consuming units store 5-6 times as much CO<sub>2</sub> as the emissions generated by the business. The overall value chain, from forest to finished wood products, therefore contributes to reducing the concentration of CO<sub>2</sub> in the atmosphere, compared with leaving the forest untouched in favour of other building materials. However, it is important to be aware that there are several uncertainty factors that affect the overall picture. Among other things, it must be assumed that a certain proportion of the products will be burned or reprocessed shortly after production so that stored CO<sub>2</sub> will be released into the atmosphere and there is also uncertainty around the extent of greenhouse gas emissions from soil after trees have been felled. Both forestry and the timber processing industry provide residual raw materials that can be used for the production of bioenergy. Moelven sells significant quantities of pulpwood, biomass and chip products to the bioenergy industry. The Group also produces a significant amount of thermal bioenergy itself, both for its own consumption and for sale as district heating. Using bioenergy as a substitute for fossil energy sources is an important means of reducing society's climate impact.

Description	2021	2020
Total volume of timber consumed (m <sup>3</sup> )	4,171,795	4,327,071
Total volume of timber consumed - CO <sub>2</sub> stored (tonnes of CO <sub>2</sub> - equivalents)	2,938,353	3,067,860
Sawn timber and plywood produced (m <sup>3</sup> )	2,116,268	2,231,959
Sawn timber produced - CO <sub>2</sub> stored (tonnes of CO <sub>2</sub> equivalents)	1,484,288	1,575,435
Total CO <sub>2</sub> emissions (location-based) (tonnes of CO <sub>2</sub> equivalents)	168,862	159,888
Total CO <sub>2</sub> emissions (market-based) tonnes of CO <sub>2</sub> equivalents)	256,590	253,110
Biomass, including pellets for external bioenergy - industry (fm <sup>3</sup> )	1,117,127	1,290,374
Energy content in sold biomass, including pellets (GWh, lower calorific value)	2,096	2,302



## AMBITIONS

- We and the materials we produce shall be climate positive
- Certify raw materials from sustainable forestry

## RESULTS

- 2.9 million tonnes of CO<sub>2</sub> stored in consumed timber
- 1.5 million tonnes of CO<sub>2</sub> stored in sawn timber and plywood
- 0.26 million tonnes of CO<sub>2</sub> emissions for Scope 1-3 according to the climate accounts, corresponding to 17.5% of CO<sub>2</sub> stored in manufactured finished goods.
- 2,096 GWh of potential energy in biomass for external bioenergy producers

## MEASURES

- Improve the understanding of Moelven's role in the carbon cycle and document that Moelven is climate-positive

## CALCULATION BASIS

The source used for calculating CO<sub>2</sub> is EN 16449. The source used for density is Bramming et al. (2006). Physical and mechanical properties in Norwegian spruce and pine. An activity in the SSFF project. Treteknisk Rapport 65, 2006.

It is estimated that a cubic metre saw timber of spruce has a basic density of 363 kg/m<sup>3</sup> and that pine has a basic density of 418 kg/m<sup>3</sup>. Basic density is dry weight of wet volume (>30% wood humidity). The carbon content is assumed to be 50 per cent of the dry weight. The percentages of spruce and pine have been set as equal to the production volumes for each species.

Spruce:  $363 \cdot 0.5 \cdot 44 / 12 = 665.5$  kg CO<sub>2</sub> / m<sup>3</sup> saw timber

Pine:  $418 \cdot 0.5 \cdot 44 / 12 = 766.3$  kg CO<sub>2</sub> / m<sup>3</sup> saw timber

## IN THE FOREST



- FSC® FM (Forest Management)
- PEFC™ FM (Forest Management)
- EUTR (EU Timber Regulation)
- UKTR (UK Timber Regulation)

## INDUSTRY



- PEFC™ CoC (Chain of Custody)
- FSC® CoC (Chain of Custody)
- SBP (Sustainable Biomass Program)

## PRODUCTS



- CE marking
- Environmental declaration (EPD and LCA)
- Hea O2 (Indoor air quality)
- Declaration of Performance (DoP)
- Building Product Declaration (BVD)
- Construction Product Assessment (BVB)
- FSC®
- PEFC™
- ENplus®
- BASTA (Chemical content)

## FINISHED BUILDINGS



- BREEAM
- Nordic swan
- Sunda Hus
- FDV (Management, operation and maintenance)

The regulatory and market-driven requirements and expectations for product documentation and certifications are becoming more and more complex. Moelven places great emphasis on providing good and comprehensive information about the products and the business so that our customers can feel confident in the products and services we deliver.

# What does it mean for me that the products I buy are certified?

It means that you have bought products for which we are able to document that the raw materials originate from sustainable forestry, that the production process adheres to all industry standards and that you can be confident that the products will be of the quality we promise.

## BY BUYING CERTIFIED PRODUCTS, YOU CONTRIBUTE TO

- climate-friendly forestry
- planting of new forests
- protecting valuable forests and safeguarding biodiversity
- minimising environmental impact
- Your own knowledge of what products contain and where they originate from.
- a good indoor environment
- facilitation of outdoor activities and support for local communities



Read more





The first constructional element has been glued and tested at Moelven Vänerply. The prototype was glued at Stora Enso.

## The path to a fossil-free home

Over the next four years, Moelven will develop, test and assess the possibilities of using fossil-free glue in plywood, together with RISE, Stora Enso and IsoTimber. As the only plywood manufacturer in Scandinavia, Moelven Vänerply is a key partner for fully testing the concept.

“When I was asked whether we wanted to participate in a project that focused on attempting to develop an element to build a fully fossil-free home, there was no other answer to give than yes,” explains Tjalling Chaudron, Product Developer at Moelven.

### Lignin creates new opportunities

Did you know that it is possible to make carbon fibre, batteries, vanillin, glue and dye from a single material? Lignin occurs naturally in wood and acts as a kind of adhesive that binds the fibres of the wood together. Lignin has been considered a

residual product in paper and mass production for a number of years and has largely been used in incineration.

“However, years of research have now led to new opportunities that place greater value on lignin, while also identifying the important role it could play in the green transition,” Chaudron says.

### Why are research projects like these important?

By developing, testing and using fossil-free alternatives like this, we can both minimise climate impact and increase the opportunities for recycling.



The project team met for the first time at Moelven Vänerply and were given a tour of the plywood factory. George Peterson, CEO of Moelven Vänerply AB (left), Ingrid Öberg Mansson from RISE, Janina Östling from IsoTimber, Magdalena Sterley from RISE, Tjalling Chaudron, Product Developer at Moelven and Sara Fäldt from StoraEnso.

# Climate-smart design

## Where and why is it important?

Moelven products have a low climate footprint compared to many competing materials. The products may have a climate impact during production, use and disposal. It is therefore important to consider the product's entire life cycle.

Certification is important, both as part of quality assurance routines and when it comes to providing our customers with enough information to make sustainable product and material choices.

The building and construction industry account for around 40 per cent of the world's energy consumption and one third of the world's greenhouse gas emissions. Customers and consumers are increasingly concerned with the environmental and climate characteristics of the products they buy. Since the increased use of wood as a material in permanent structures contributes to reducing CO<sub>2</sub> emissions, Moelven has an important part to play in the production and development of climate-smart products and services that the market wants to use.

## Policy and approach

Approvals, certifications and product documentation allow customers and consumers to make informed choices and compare different products and materials. In addition to what follows from regulatory requirements, Moelven also places great emphasis on ensuring that all products have certifications and product documentation covering the various requirements and needs arising on the part of customers.

Moelven is also subject to several regulatory requirements for certification. Generally, Moelven's products are subject to one EU directive, the Construction Products Regulation (CPR), which deals with various CE certifications. Directives such as Registration, Evaluation, Authorisation

and Restriction of Chemicals (REACH) and the Biocidal Products Regulation (BPR) are also relevant, but in fewer areas.

The raw material certification schemes PEFC™ and FSC® are key certifications that document that the wood material comes from responsible forestry. Read more about these certification schemes on page 61.

In addition to certifications and regulatory requirements, Moelven also works to promote the benefits of wood as a construction material. When we build using wood, we move the carbon sink from the forest into the building, where it continues to store carbon for as long as the building stands. Moelven's construction material, glulam, is strong, light-weight, malleable and has a high load-bearing capacity relative to dead-weight. By using more wood in construction, we reduce the use of other construction materials with higher greenhouse gas emissions. Glulam can also be produced in very accurate dimensions, helping to minimise material use and avoid wasting natural resources.

Moelven works actively to reduce its climate and environmental footprints and participates in a project together with RISE, Stora Enso and IsoTimber to develop, test and assess the possibilities of using fossil-free glue in plywood. As Scandinavia's only plywood manufacturer, Moelven Vänerply AB is in a unique position to test the concept in practice. In the fossil-free adhesive NeoLigno®, which has been developed by Stora Enso, oil-based components have been replaced with components made from lignin from wood.

## Evaluation of results

A large and growing proportion of Moelven's products and materials are certified under various certification schemes.



### SUSTAINABLE BRAND ROLL-OUT

When we launched the new Moelven branding in October 2021, we chose to focus on a sustainable roll-out. This means that we replace packaging only after we have used up the packaging we have in stock. For this reason, you may see both the new and the old Moelven branding for a transitional period.

[Read more.](#)



### TOGETHER WE MAKE A DIFFERENCE

After the Bygg Reis Deg exhibition in October 2021, Gausdal Landhandleri bought Moelven's stand and sold it on at its outlet in Lillehammer.

This meant that even more people had the opportunity to benefit from our materials. That's sustainable and good for the environment.



### AMBITIONS

- Moelven's products and materials shall be climate-positive.
- Moelven will offer the most sustainable solutions to customers.

### RESULTS

- The spruce and pine products Moelven manufactures can be sold as certified.
- The spruce and pine products Moelven manufactures come with environmental assessments or product certification.
- The spruce and pine products produced by Moelven are covered by EPDs.

### MEASURES

- Continue the work on surveying and preparing environmental assessments and product certifications in the Group.
- The focus on interior products and the advantages of using wood-based products will continue and will be supplemented through emission testing and comprehensive certificates.
- All relevant interior products must undergo emissions testing and also be documented with a certificate where relevant.
- All input chemicals in Moelven's products must be documented.



### A WALL SYSTEM DESIGNED FOR REUSE.

Moelven Modus AS launched the Loop Wall product concept at the beginning of the fourth quarter of 2021. Loop Wall is a prefabricated wall system with a wooden core. The wall is easy to handle, as well as quick to assemble and reassemble. The system has been designed for reuse, so that changed needs in office layout can be met time and time again with virtually no downtime. This is beneficial both to the economy and the environment when viewed in a life cycle perspective.



## Tools for making climate-smart choices

What Moelven flooring should be used for the building? Does Arctic or Etna have the smallest climate footprint? You can find the answer by using an environmental product declaration.

“We have worked to produce environmental product declarations for our products for a number of years. We consider EPDs a valuable tool for reducing the climate impact during the construction phase, together,” says Tjalling Chaudron, Product Developer at Moelven.

Around five years ago, Moelven started work to map the climate footprint from five different products in its range. Today, the same process has been completed for more than 30 products and these have been assigned environmental product declarations, also known as EPDs. Moelven has also developed its own generator to rapidly and easily produce declarations for new products. But why are these EPDs important and what information can they actually provide?

“In order to meet global climate requirements and protect the only planet we’ve got, we need to know how much and which resources we use. Only then will we be able to make informed decisions. This is something that an EPD provides a third-party certified solution for. Early on, we identified the need and responsibility we had to obtain this type of information about our products,” explains Tjalling, who has been working on EPD development since 2017.

### We take responsibility

It is not only the footprint from our own activities that is mapped in an EPD. EPDs address the entire life cycle of the product, from when the tree is standing in the forest until it is felled, transported, refined at Moelven and finally reaches the end of its life cycle.

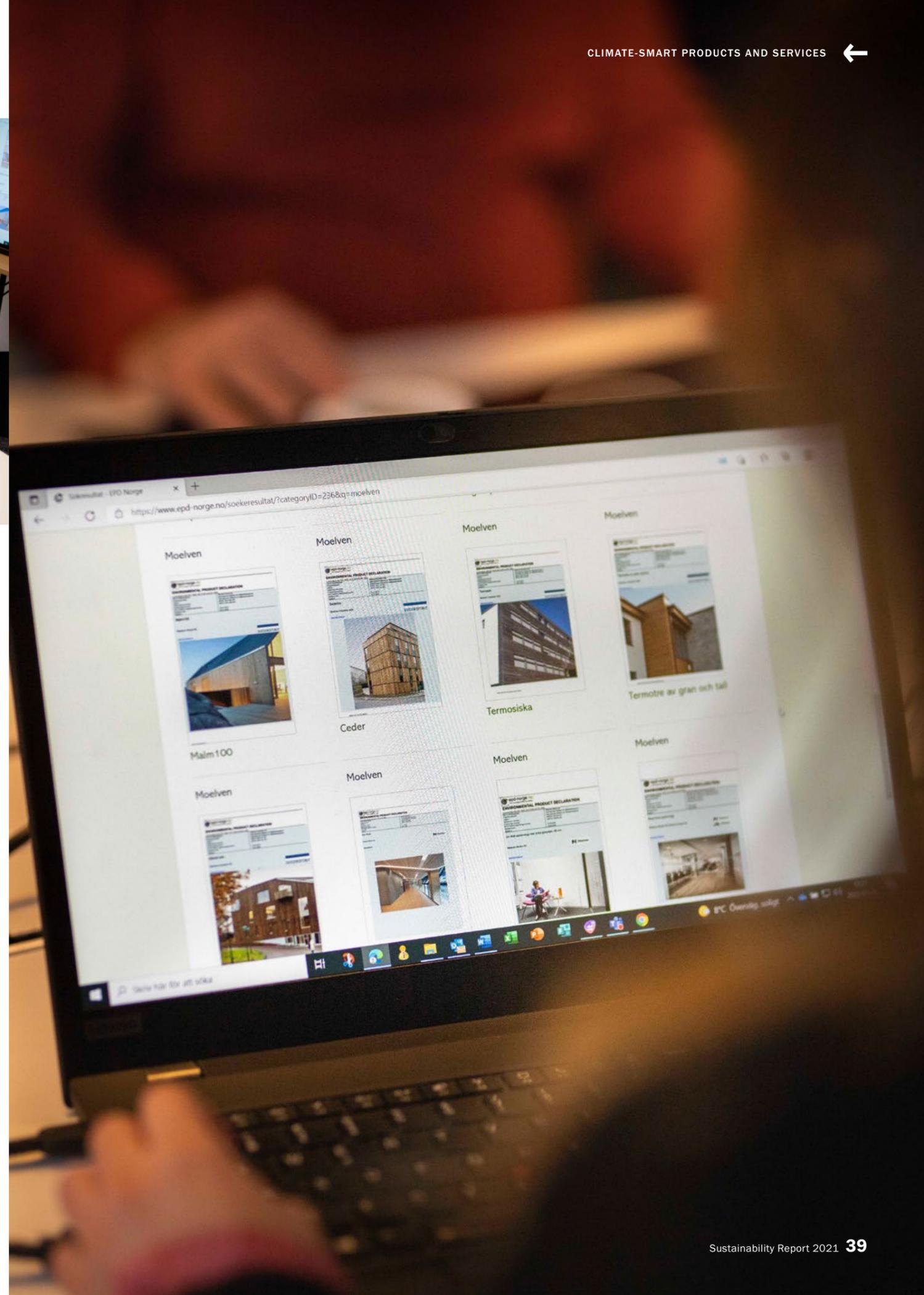
“We can see how much of a resource, whether fossil, renewable, water or electricity, has been used to produce each plank used in your home. This allows you, for example, to calculate how much carbon dioxide has been used to produce construction materials for your home in particular,” Tjalling explains.

Moelven quickly decided to try to generate the most accurate content possible for its EPDs.

“Using generic data, i.e. data that constitutes average values, is common. But we decided early on that the figures that form the basis for our EPDs would contain actual data from our activities. Of course, this meant large amounts of work, but it has absolutely been worth it. Not only do we know that our figures are accurate, we can also see that our products often generate lower values than products using generic data only.

Product Developer Tjalling Chaudron (left), Master Data Manager Per Skreden and Quality Specialist Michaela Pfeiffer work together to develop the Moelven EPDs.

Today, there are more than 30 EPDs available for Moelven products, all using data we have collected ourselves. The work to collect this data has been extensive and has been ongoing for some time.”





Electric forklift trucks are making internal transport more sustainable at Moelven Limtre AS.

## Transport of goods

### Where and why is it important?

Moelven's activities include the transport of materials and products, often in large volumes and weights and across large distances. This includes the transport of raw materials to our industrial facilities, internal transport within the industrial sites and between Group units, as well as the transport of finished goods to the market.

Transport constitutes the largest individual source of CO<sub>2</sub> emissions for the Group and is a crucial area when it comes to both the environment and finances. A number of stakeholder groups are affected by the environmental impacts of transport. These may include greenhouse gas emissions, particulate matter, noise, traffic safety, etc. Efficient and environmentally conscious logistics solutions are a prerequisite when it comes to being able to offer customers fast, accurate deliveries with as little environmental impact as possible.

### Policy and approach

The Moelven strategy and sustainability policy sets out clear targets and policies for transport and purchase of transport services. The different businesses within the Group have different needs for various types of transport services, which means that the improvement work also includes different focus areas.

### Internal transport

The products manufactured by Moelven take up large amounts of space and are often included as

part of several different processes. This leads to a lot of internal transport within Moelven's industrial sites. Different sized forklift trucks are generally used. This is the most important individual source of Scope 1 CO<sub>2</sub> emissions for the Group as a whole. Minimising internal transport and replacing diesel-powered forklift trucks with electric alternatives are therefore crucial improvement measures. The electrification of internal transport on a large scale does, however, require extensive investments in charging infrastructure and the adjustment of production processes in order to ensure that the required charging operations do not lead to a decline in productivity. From 2021 it has been decided that electric alternatives always must be studied and considered wherever possible when investing in new equipment for internal transports.

### Transport within the domestic markets in Scandinavia

Moelven is a co-owner and member of several transport communities that carry out most of the road transport for the Group in Scandinavia, when it comes to both raw materials and finished products. This means that the Group is in a position to place demands on how carriers conduct their activities. The different industry affiliations and transport needs of the other participants in the transport collectives help to increase the opportunities for improving efficiency by setting up transport routes that minimise journeys with no loads.



### AMBITIONS

- The environmental impact of transport must be minimised by coordinating and optimising product flow.
- The environment shall be considered in the choice of transport method and the group's current objectives for environmental standards shall be taken into account when choosing partners.
- All road transport must take place using vehicles in a minimum of EURO 6 class from 2022.
- Increasing the use of modular vehicle combinations where possible.
- Continuing to assess and test alternatives to fossil fuels.
- Electrical alternatives must be explored and considered where possible when acquiring new assets for internal transport.

### RESULTS

- KPIs have been established for transport at company and division level.
- Biogas-powered lorries have been put into use for goods transport in Sweden.
- An electric lorry for local distribution in urban areas is being acquired for testing.
- Modular vehicle combinations are being used to an increasing degree and reduce the number of transport jobs.

### MEASURES

- A Group-wide steering/ collaboration group for the optimisation of the logistics area has been established.
- Continuing to focus on modular vehicle combinations and projects to test vehicles.
- Following up on established KPIs for transport activities.
- Improving transport reporting, including in relation to the transport of products to customers.

A broad product range available with short delivery times and high delivery precision is extremely important. By utilising modern digital technology to plan and coordinate transport, the filling ratio and driving distances of the vehicles can be optimised, thereby also optimising the environmental footprint from transport.

Moelven is working to identify alternatives to traditional means of transport based on fossil fuels. Together with LBC Logistik AB, Moelven started using the first biogas-powered lorry in the Swedish forest industry during the spring of 2020. The vehicle is used for timber and wood chip transport in the Värmland-Stockholm-Gothenburg region. Experiences so far are very good, but access to filling stations in Moelven's geography is limited and developments are slow. Naturally, this further limits the use of biogas-powered trucks.

Many deliveries from Moelven to customers are of a volume per transport that means that electric trucks are not feasible in practice due to load capacity and range. However, for deliveries of smaller volumes in cities, electric vehicles may be an option, and even necessary in the long term as a result of increasingly stringent regulations. This will impose new requirements on how logistics are organised, and Moelven has therefore initiated a trial project where the purpose is to see how electric trucks for local distribution of goods to the customer can be part of a larger, sustainable and cost-effective logistics concept.

### Timber and wood chip transport

Moelven also uses rail and sea transport to ensure the reliability of timber supply, as well as market opportunities for wood chip and energy products from regions with no local demand. For example, rail is normally used for biomass deliveries in Norway and Sweden. Rail is a cost-effective mode of transport that also contributes to reducing the environmental footprint from transport when the conditions are right. Moelven, together with several other industry partners, is involved in the "Godspakke Innlandet" initiative.

Transport of goods to customers (tkm)	2021	2020
Road transport	914,110,982	836,348,445
Rail transport	106,264,661	119,551,312
Sea transport	465,465,461	692,653,669
Transport of timber to the company (tkm)	2021	2020
Road transport	330,585,682	285,949,288
Rail transport	13,591,227	1,861,594
Sea transport	20,425,925	-
Transport of other goods to the company (tkm)	2021	2020
Road transport	41,591,517	38,502,155

### Transport to export markets

Moelven has sales in around 40 countries outside Scandinavia. Road transport is generally used to reach these markets from Moelven's industrial facilities. However, on the journey to the customers, Moelven's products are often transported by both rail and sea. In order to ensure effective transport routes, where we utilise transport capacity to both Norway and Sweden and back out to the export markets, we often use the available return capacity from foreign carriers. The use of EURO 6 class vehicles is also prioritised here. There is also a high focus on the working conditions of drivers. This is important not only to drivers but also for general traffic safety. Since August 2020, there have been new rules in place regarding driving and resting periods in the EU. These rules have not yet been incorporated into the EEA Agreement, but still affect Moelven in situations where foreign carriers are used. The tightening of the cabotage regulations has helped improve the working conditions of the drivers, but has also led to increased transport costs. In 2022, Moelven will conduct a mapping of its supply chains, which will include examining the working conditions of drivers.

### Evaluation of results

EURO 6 class has been implemented by the transport companies Moelven collaborates with in Scandinavia.

The total volume of finished product deliveries in 2021 was lower than the previous year. This was the result of a combination of shortages of finished products within the Wood division making it necessary to limit sales for part of the year, as well as lower finished product stock levels making it difficult to optimise transport with regard to cargo filling ratios and routes. For the timber companies, the shortages in transport capacity led to certain challenges towards the end of the year. Purchases of products increased in 2021, for both sawlogs and other input materials. Due to poor access to sawlogs in certain regions, ship transport was also used to secure the required volumes.



### BETTER WORKING CLIMATE USING ELECTRIC FORKLIFT TRUCKS

At Moelven Limtre AS, you can now find electric forklift trucks that are used to load and unload wood products. The indoor climate at the warehouse has improved without exhaust fumes and we also minimise the CO<sub>2</sub> emissions from our internal transport.

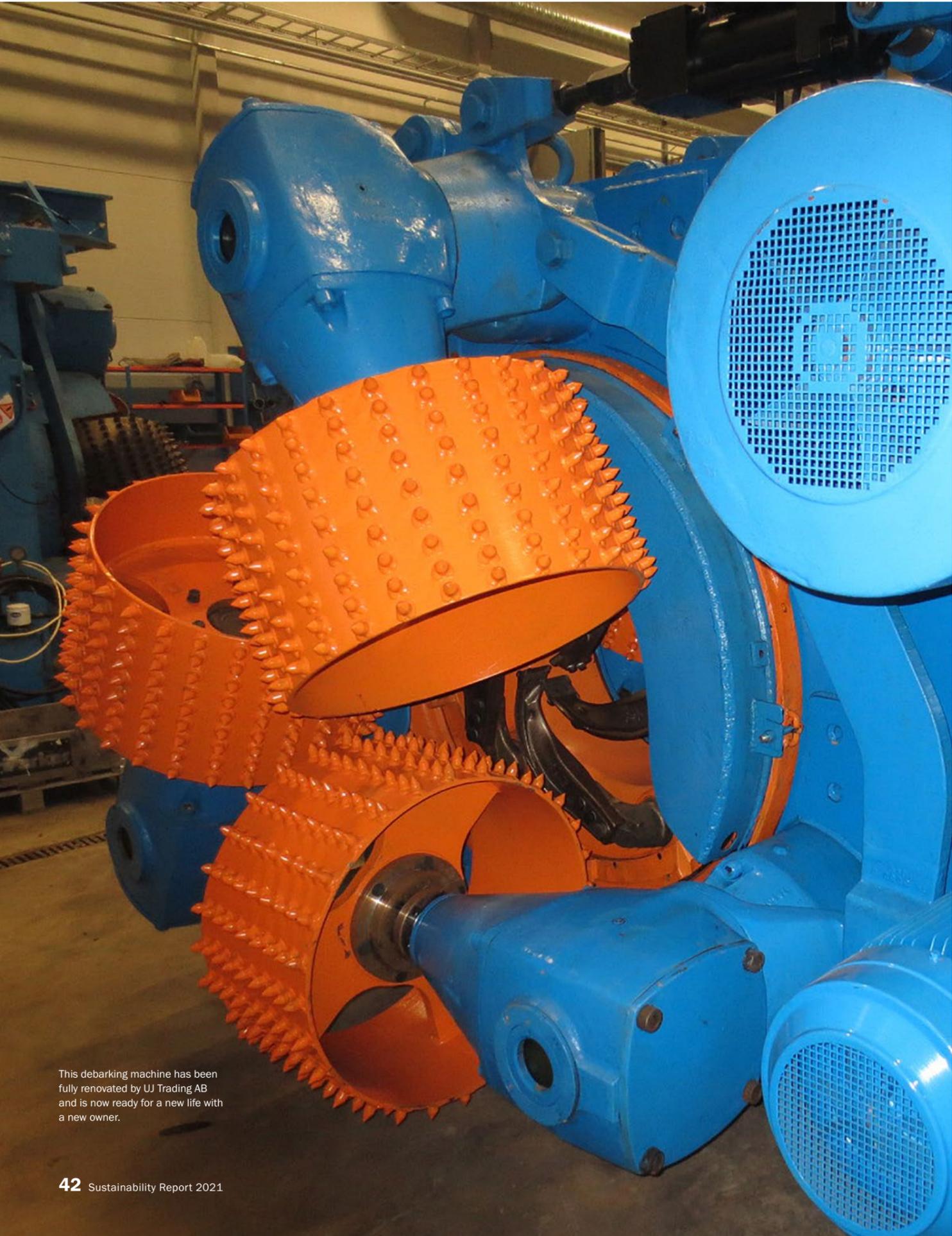
### The goal is for all forklift trucks to be electric.

At Moelven Limtre AS, the goal is a sustainable replacement of diesel-powered forklift trucks with electric forklift trucks. "Over time, we aim for all forklift trucks used in production to be electric, but we are taking a sustainable approach and replacing our equipment as needed," explains Odd Frydenborg, Factory Manager at Moelven Limtre AS.

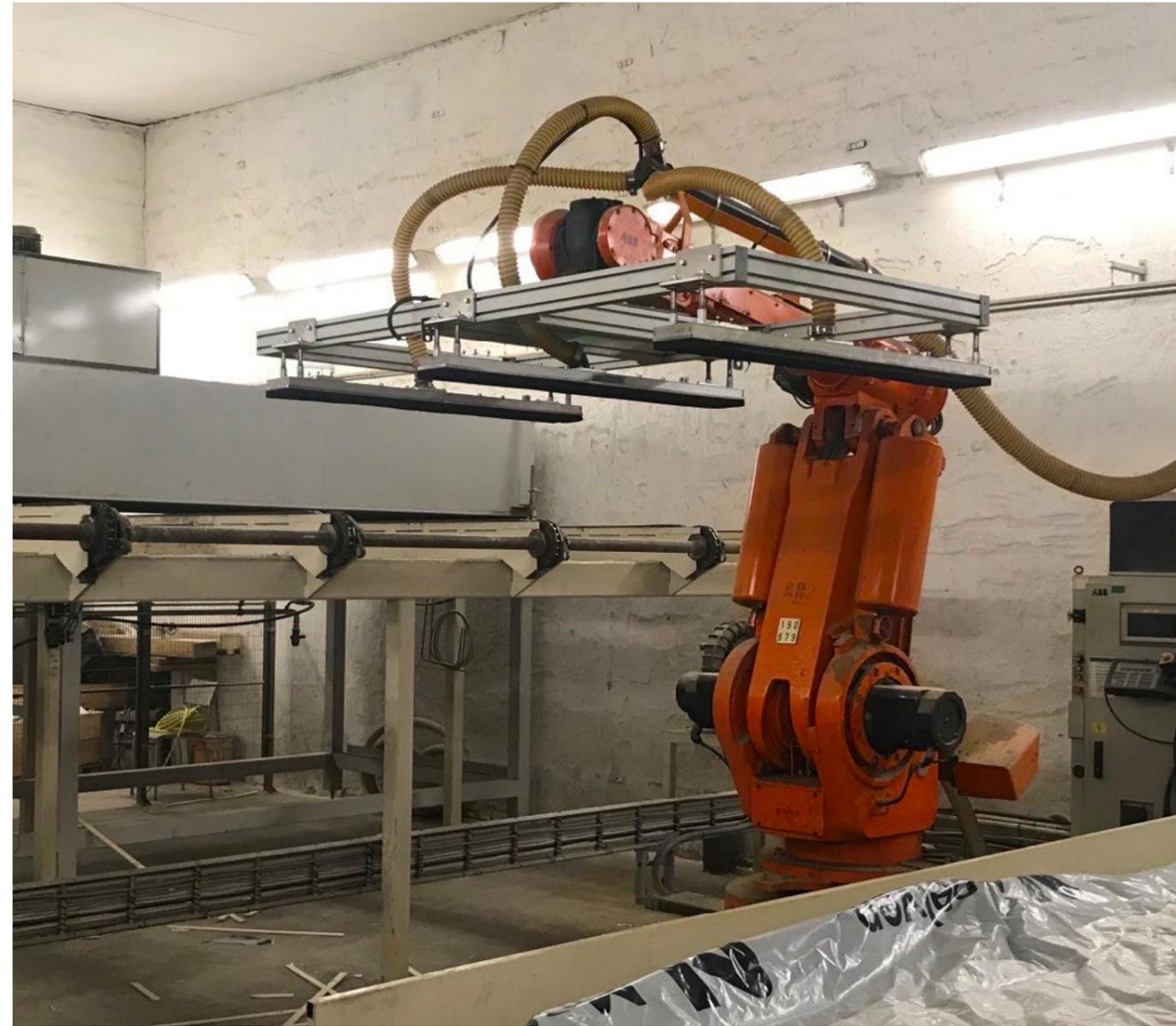
The first big forklift truck is already in place at the timber warehouse, a seven-tonne electric forklift truck from Kalmar. This is a 2015 model.

"Since this forklift truck will not be used all day, we decided to buy second-hand. Three of the forklift trucks in our cutting department are already electric. It was now the turn of the timber warehouse, where a total of three electric forklift trucks will be added this year," says Frydenborg.

In 2022, the company will achieve an electrification rate of 70 per cent for its forklift truck fleet.



This debarking machine has been fully renovated by UJ Trading AB and is now ready for a new life with a new owner.



Moelven Edanesågen AB has bought several used machines from UJ Trading, including this robot that is used in the primer system.

## Breathing new life into old machinery

Utilising what already exists is important when it comes to creating a more sustainable world. Recycling, renovation and especially circularity have become increasingly essential. At UJ Trading AB, sawmill and woodworking machines are given new life and can continue being useful through repairs, adaptations and by matching the correct machine to the right company.

“As well as supplying new and used machines to Scandinavian industries, we also ensure that the machines that need to be replaced can

continue being useful elsewhere. Sweden and Norway are world leaders when it comes to sawing equipment and the need for upgrades in similar industries in other countries is high,” explains Jonas Larsson, CEO of UJ Trading.

In 2021, UJ Trading invested heavily in making the operation of its business even more sustainable. This involved installing two pellet heating systems, 180 solar panels and replacing all lighting with more energy-efficient alternatives.

# Energy consumption in our own production

## Where and why is it important?

Moelven consumes a considerable amount of energy in its production. Even though around 3/4 of the energy requirements are met by self-produced bioenergy, the proportion that is covered through the purchase of electricity remains the largest single contributor to greenhouse gas emissions, together with transport. Energy consumption in our own production is important both to Moelven and its stakeholders since it represents both an environmental challenge and a major expense.

## Policy and approach

Moelven works continuously to improve the efficiency of the energy consumption at its facilities. This work will be achieved by actively participating in the technological and market development of the bioenergy sector, as well as by replacing fossil fuels with more alternative and environmentally friendly energy sources in areas where this is practically feasible.

Moelven has set itself a target of providing at least 95 per cent of the thermal energy needed for the heating of premises and drying of timber from self-produced bioenergy. However, within the timber processing part of the Group, which is the most energy-intensive, there are areas in which operations are dependent upon the use of electrical energy. The main areas here are the sawing process and the operation of the electric motors for the timber dryers. The energy consumption in these areas is strongly linked to production

volumes. The work to improve efficiency in these areas is therefore predominantly aimed at reducing energy requirements for each unit produced. The 2022 to 2024 strategy plan highlights the strategic focus on more energy-efficient drying. This involves replacing the oldest and least energy-efficient concrete kilns with new kilns, which will result in lower energy consumption per unit produced due to the improved controls and heat recovery, as well as improving capacity and allowing for the planned increase in production volumes. In order to implement the increase in production without a corresponding increase in total electricity consumption, innovation and active use of new technology will be essential. The "Smart Digital Sawmill" project at Moelven Valåsen AB's sawmill in Karlskoga in Sweden has given Moelven knowledge and experience that are providing the basis for energy efficiency measures across the Group.

A detailed energy survey has also been carried out of all of the Group's operations in Sweden. The results from the survey form the basis for the Group's target of reducing electricity consumption not directly linked to production volume by 10 per cent compared to 2017 by the end of 2024.

Moelven also has a target of reducing the carbon footprint from its business activities in line with the national climate targets in the countries where Moelven carries out its production. Relevant measures to achieve this often involve a change to using electricity as an energy source and will, viewed in isolation, therefore lead to an increase in energy consumption.



## AMBITIONS

- We and our products shall be climate-positive
- Implement an increase in activity according to the Group strategy without increasing electricity consumption.
- 95 per cent of the requirements for heating premises and drying to be met using self-produced bioenergy.
- 10% reduction in non-volume dependent electricity consumption compared to 2017 by the end of 2024.

## RESULTS

- Fossil energy consumption increased by 33 per cent in 2021.
- Bioenergy production increased by 7.2 per cent in 2021.
- Electricity consumption reduced by 5.6 per cent in 2021.

## MEASURES

- Revise existing targets and establish more activity-specific KPIs to analyse energy consumption and energy efficiency measures at Group, division, company and department level.
- Roll out energy efficiency measures based on the "Smart Digital Sawmill" project and the energy survey in Sweden.

## Evaluation of results

Category – Volume (GWh)	2021	2020	2019
Total fossil energy consumption	48	36	39
Total bioenergy production in the Group (lower calorific value)	819	795	746
Lost bioenergy	77	84	72
Total energy consumption, purchased	235	249	229
Purchase of district heating	96	88	90
Total sales of bioenergy	72	63	73
Total energy consumption in the Group (GWh)	1048	1022	959
Consumed bioenergy (GWh)	765	737	691

Total energy consumption increased in 2021 as a result of increased activity levels. The share of products with a high degree of processing, which generally require more energy, increased. At the same time, the unusually high capacity utilisation within the timber processing part of the Group meant that operations were somewhat less energy-efficient than desired. Fossil energy consumption increased due to a fire in one of the bioenergy plants, making it necessary to use a backup solution running on fossil fuel. Measures

to increase production and delivery capacity to meet the very high level of demand also meant that the energy consumption for internal transport was higher than normal.

COVID-19 led to both infection control measures and travel restrictions, which made it difficult to implement energy efficiency measures and investment projects. The progress of the improvement work was therefore poorer than planned.



## THE NEW BIOENERGY CENTRE ENSURES ACCESS TO SELF-PRODUCED BIOENERGY

If you drive past Moelven Valåsen AB in Karlskoga today, you will be able to see smoke coming out of two chimneys instead of one like before. This is the result of the decision to invest MNOK 60, taken at the end of 2020. The new energy centre brings us one step closer in our efforts to make the sawmill more sustainable. At the same time, we have also ensured the operation of the new sawmill line, which is now being designed at Moelven Valåsen. "Increasing oil consumption was not an option for us. Instead, our heat production is based on the residual products from the sawmill, which helps us to be self-sufficient when it comes to bioenergy," explains Peter Rockedahl, Technical Director at Moelven Timber. The new energy centre increases the bioenergy capacity from 15 MWh to a total of 25 MWh.

Read more.



# Production of bioenergy

## Where and why is it important?

Bioenergy is energy that is produced from materials formed in ongoing biological processes. Emissions from bioenergy production are considered climate-neutral, as the CO<sub>2</sub> released corresponds to what the plants have absorbed from the atmosphere through photosynthesis.

When bioenergy is used instead of fossil sources of energy, the substitution effect helps reduce total CO<sub>2</sub> emissions. Moelven produces bioenergy in the form of heat and utilises the majority of this heat for the drying of timber. Some is also sold externally as district heating and some is used to heat our own premises. Biomass is also sold to external customers, who use it to produce bioenergy in the form of heat for their own production, district heating or electricity. In order to ensure profitable operations, Moelven needs to exploit the entire log. Bioenergy is a key focus area that contributes positively to the work of creating a zero-emission society, while also creating value from wood chip and bark products that would otherwise have been wasted.

## Policy and approach

The energy potential of the annual production of wood chips and bark products, including cellulose chips, is around 3 TWh. This therefore represents a significant energy resource, both in terms of our own production and in terms of the opportunities

for sales in a growing market for bioenergy in general.

Moelven actively works to reduce its climate and environmental footprint. The Group's sustainability policy also includes a stated aim of the Group actively participating in technological and market developments in the bioenergy sector, as well as investigating alternative energy consumption for the plants that currently use fossil fuels for heating.

## Evaluation of results

In 2021, Moelven had a total bioenergy consumption of 765 GWh for heating. Of this, 669 GWh was produced using our own bioenergy plants. The energy is mainly used for the drying of timber. Moelven also buys a certain amount of bioenergy from external companies. In 2021, this amounted to 96 GWh. In these cases, the bioenergy is generally produced using biomass from Moelven, but the bioenergy plant is owned by external parties.

Description	2021	2020
Energy content in sold biomass, including pellets (GWh, lower calorific value)	2,096	2,302
Bioenergy produced in Moelven (GWh, lower calorific value)	819	795
Consumed bioenergy (GWh)	765	737
Bioenergy bought from companies outside the Group (GWh)	96	88
Bioenergy sold to companies outside the Group (GWh)	72	63



## AMBITIONS

- To the extent possible, we will phase out the use of boilers running on fossil fuel and replace these with bioenergy plants.
- We and our products shall be climate-positive
- Energy consumption will be reduced per unit produced.
- 95% of the heating requirements for premises and drying will be covered by self-produced bioenergy.

## RESULTS

- 2,096 GWh (lower calorific value) of energy potential in biomass, including pellets sold to external bioenergy industries.
- 819 GWh thermal bioenergy produced using our own bioenergy plants.
- 73% of total energy needs met through bioenergy

## MEASURES

- Improve measurement and reporting of bioenergy production and consumption.

At Moelven, we make a living from refining a renewable natural resource and we are committed to doing so in the best possible manner. By using the various parts of the tree for what they are best suited to and by using residual raw materials for the production of e.g. pellets, particle boards and bioenergy, we can fully utilise the resources of the forest.



## Branches and tops

The branches and tops of the tree are used as biofuels and thereby help replace fossil fuels. One lorry load of branches and tops can heat up to four homes for a year. There is great potential to be found in this part of the tree and we are working to utilise this potential even further.

## Pulpwood

By processing pulpwood, the timber processing industry can create everything from hygiene products, paper and cardboard to clothing and animal feed. Pulpwood is of lower quality than saw timber and we therefore sell this part of the trunk to those who can best utilise it."

## The sawlog

The sawlog is the raw material for wood products with a long service life and has great climate benefits. However, only half of a log is turned into sawn timber. The rest becomes wood chips. By, among other things, using residual raw materials to produce pellets, raw materials for bioenergy and plywood, etc., we can utilise the resources of the forest to the maximum.

## Stumps and roots

The stumps and roots are mostly left behind in the forest after felling. There, they provide homes for a variety of insects and fungi, often for several decades. They also help increase the carrying capacity of the land and bind it together.



The basic premise at Moelven has been the same for 123 years: To utilise natural resources from forests as much as possible. For the benefit of both people and the environment.  
Photo: Bjørnar Fjeldberg

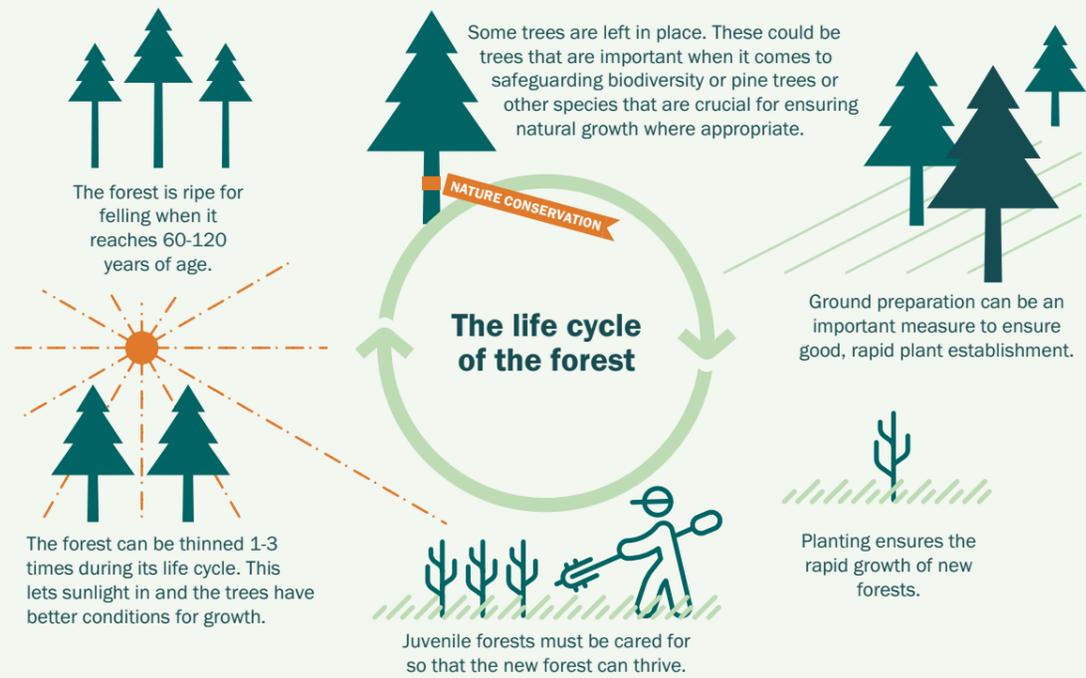


# Safeguarding our natural resources



## Ambition

We shall use renewable resources and utilise the entire resource.



FOCUS AREA

## Safeguarding natural resources

### UN Sustainable Development Goals



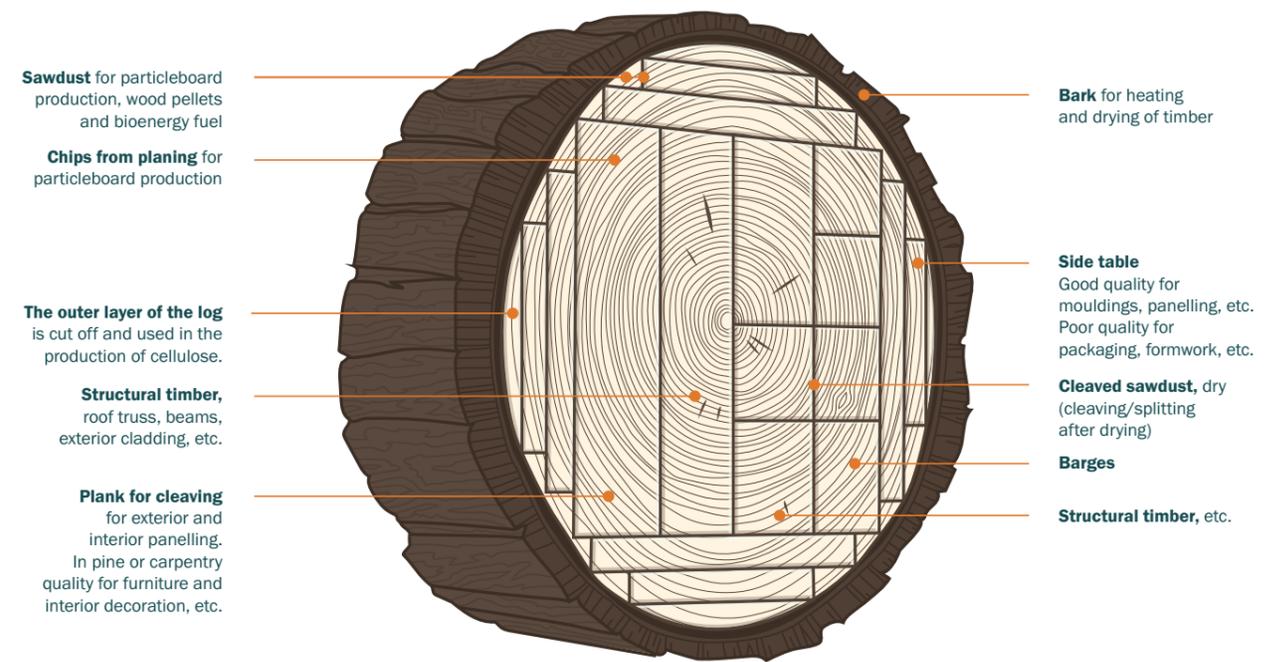
**Relevant sub-goals**

**15.2** - Promote implementation of sustainable management of all types of forest, halt deforestation, restore degraded forests and to a significant degree increase forest reconstruction and replanting at a global level by 2020.

### Moelven's policy

- Moelven shall utilise entire timber logs, including all by-products.
- Moelven shall optimise raw material utilisation to improve resource efficiency and maximise the value of the raw materials used.
- Moelven shall use certified raw materials from a sustainable forestry. As a minimum, all timber purchased by Moelven shall be checked in accordance with applicable requirements for controlled wood set by recognised chain of custody standards (PEFC™ CoC and/or FSC® CoC). Furthermore, Moelven aims to have as much purchased timber as possible certified in accordance with recognised standards for sustainable forestry (PEFC™ and/or FSC®). At a minimum, this shall correspond to needs based on the group's sale of certified finished products.
- Moelven shall not be involved, directly or indirectly, in:
  - Unlawful logging or trade of wood or forestry products.
  - Destruction of high preservation value areas during forestry operations.
  - Forestry involving time-honoured or human rights violations.
  - The introduction of genetically modified organisms during our forestry operations.
  - Significant transformation of forests into plantations or non-forestry applications.
  - Violations of ILO fundamental conventions as defined in the ILO Declaration on Fundamental Principles and Rights at Work, 1998.
- Moelven shall design products that focus on resource efficiency and assess the need for and environmental impact of packaging.
- Moelven shall actively work to reduce waste and have a minimum sorting ratio of 90% for residual waste.
- Moelven shall actively work to minimise the use of plastic, and strive to find alternative and sustainable materials to plastic.

### What is saw timber used for?



Moelven Skog AB ensures that water sources like this and other cultural heritage are not affected by harvesting.



"I'm here to protect your Timber products, wood be nice to do it again. Please recycle me." is printed on Moelven's new plastic packaging. The packaging is made from 50 per cent recycled plastic.



## Resource-efficient design and packaging

### Where and why is it important?

Moelven impacts the environment both through its own industrial operations and the use and management of products and packaging. Material use is optimised and waste quantities reduced through resource-efficient design and industrialised production in controlled environments in the factories, at the construction sites and during the usage phase. For practical reasons, many products must be stored and transported while exposed to the elements. The correct packaging is important in order to preserve quality, although this often also presents environmental challenges. Plastic has a number of good properties when used as a packaging material. At the same time, the long degradation time means that plastic that goes astray in nature leads to issues for flora and fauna and the incineration of fossil plastic results in CO<sub>2</sub> emissions.

### Policy and approach

**Moelven's sustainability policy states the following:**

- The utilisation of raw materials must be optimised to improve resource efficiency and to maximise the value of the raw materials.
- Products must be designed with a focus on resource efficiency. Unnecessary packaging must be minimised.
- The use of plastic must be minimised. Alternative materials to plastic must be actively sought.

Moelven's module concept and system interiors are examples of resource-efficient design. Efficient mass production with good planning minimises both resource usage in the factories and waste quantities, as well as making the actual waste management easier. Time spent and waste quantities are reduced at construction sites. The concept also provides excellent opportunities for recycling and reuse.

Exact cutting within the Group's timber processing activities contributes to reduced waste volumes for customers. The offcuts that arise in production can be effectively managed as part of the industrial process. In December 2020, WeatherPly™ was launched in the market. This is water-repellent construction plywood for exterior use on roofs and walls. WeatherPly™ is treated with a silicate on all sides including tongue and groove, which makes it weather-resistant, reduces water ingress and damage caused by sun/UV rays. The product therefore contributes to reducing the need to use coverings, for which plastic has traditionally been widely used.

In connection with internal transport of goods, every effort is made to ensure that the conditions allow for transport to take place without the need for packaging. This contributes both to reducing the amount of waste and the costs. At its own facilities, Moelven can also make sure that a waste management system is in place that ensures the highest possible degree of recycling and reuse. On the other hand, Moelven is largely unable to influence what happens to the packaging used for products that are distributed in the market. It is therefore important to use as

little packaging as possible and that the packaging that is used is as environmentally friendly as possible. The products developed in the mechanised wood industry must in most cases be packed in some sort of protection against the elements. As a rule, direct deliveries straight from the manufacturer to the customer with no intermediate storage where the products may be exposed to precipitation, dirt or sunlight are not possible. In order to preserve quality and thus value, packaging is used that meets specific requirements for waterproofing, UV protection and tearing strength. Towards the end of 2021, Moelven switched to using 50% recycled plastic for its outer packaging. At the same time, work is being done to find alternative and even more sustainable solutions. As a substitute for traditional plastic packaging, trials are being conducted using packaging made from PE-laminated drink cartons and wax-treated sides as simple moisture protection. The trials are promising, but much development remains before this solution can replace current plastic packaging based on recycled plastic.

Evaluation of results	2021	2020
Plastic packaging (tonnes)	1,999	1,866
Bioplastic packaging (tonnes)	45	35
Polyurethane (tonnes)	4	7
Total plastic consumed (tonnes)	2,049	1,909
Plastic recovered (tonnes)	581	392
Cardboard packaging (tonnes)	113	90

The main reason behind the increase in plastic consumption in 2021 was predominantly the increase in activity levels but also, to some extent, the product mix due to increased deliveries of product categories that require more packaging based on both quality and HSE considerations.



### Ambitions

- Climate-smart products and services
- Utilisation of raw materials must be optimised.
- Actively strive to minimise the use of plastic and find alternative materials.
- Share of recycled plastic > 30%.

### Results

- 2,049 tonnes of plastic consumed.
- 581 tonnes of plastic recovered.
- Multiple ongoing projects to trial alternative packaging materials.
- New outer packaging plastic made from 50 per cent recycled plastic.

### Measures

- Developing resource-efficient products and production methods.
- Systematically identify opportunities for reducing waste and for alternative packaging materials.



### SWITCHING TO 50 PER CENT RECYCLED PLASTIC

Together with the Swedish company Trioworld, Moelven switched to using packaging made from 50 per cent consumer-recycled plastic in Q4 2021. We were one of the first in the industry to make this move. This has resulted in a more circular solution, significantly reducing the carbon footprint from packaging. The new plastic is 100 percent recyclable.

# Waste management

## Where and why is it important?

Industrial, building and construction activities generate large parallel material flows that can be reused, recycled or used for energy recovery if they are processed and sorted correctly. Residual raw materials from the Group's timber processing activities, such as chips and fibre products, are resources for which processes have been established to ensure optimal utilisation. Fractions originating from packaging from purchased goods, auxiliary materials, worn tools and equipment, etc, must be managed in collaboration with external parties.

By sorting as much as possible and by facilitating reuse and recycling, Moelven helps create a more sustainable and circular material cycle. A high volume of waste and a low degree of sorting could be indications of both negative environmental impact and inefficient production, which in turn affect the costs and profitability of the Group.

## Policy and approach

Moelven's sustainability policy states the following guidelines and goals for waste:

- Moelven shall design products that focus on resource efficiency and assess the need for and environmental impact of packaging.
- Moelven shall work actively to reduce waste

and has a long-term target of achieving a sorting ratio of a minimum of 95 per cent for residual waste.

- Moelven shall actively work to minimise the use of plastic and strive to find sustainable alternatives to plastic.

Complying with all of the laws and regulations that apply to the Group is a fundamental prerequisite for all operations in Moelven. The sustainability policy approved by the Group's corporate management in 2021 focuses on activities and initiatives that go further than required by the legislation.

The different units within the Moelven Group are each responsible for the waste management that was previously performed in collaboration with local waste management companies. During the autumn of 2021, the Group consolidated these agreements across a minimum number of parties in order to collaborate more closely and achieve even more environmentally friendly waste management for the Group as a whole. With joint waste collection partners, Moelven achieves greater transfer value between the companies and better opportunities for identifying circular solutions internally within the Group.

Several of Moelven's locations apply LEAN production methods. These are based on continuous improvement and a reduction of



Improvement Coordinator Roger Viken from Moelven Byggmodul AB with linoleum cut-offs that will become new flooring.

## CLIMATE BENEFITS FROM MATERIAL RECOVERY

Together with the flooring supplier Tarkett, Moelven Byggmodul AS and AB collected and recycled one tonne of installation cut-offs from linoleum floors in 2021, as well as approximately 62 tonnes of installation cut-offs from the vinyl floors used in our modules. This constitutes a climate benefit of 227 tonnes of CO<sub>2</sub> eq.

When Tarkett supplies new floors to Moelven, they take the installation cut-offs away again during the same trip and use them as a raw material when producing new floors. In this way, the companies achieve CO<sub>2</sub> savings both by not having to incinerate the waste and by being able to replace fossil raw materials with recovered raw materials.

wasting in the organization. Waste impacts production costs and must therefore be reduced to a minimum.

## Evaluation of results

Waste management is becoming an ever greater priority in the Group. Good waste management with precise sorting into as many waste fractions as possible is an important prerequisite in the trend towards a more circular economy.

The total waste volume increased in 2021, largely as a result of the general activity levels but also because several entities carried out clear-up operations to facilitate better sorting procedures going forward. The Group had a goal of achieving a sorting ratio of at least 90 per cent. We achieved this goal in 2021 with a sorting ratio of 92.6 per cent.



## AMBITIONS

- Work actively on waste reduction and waste management in accordance with the waste pyramid priorities.
- Sorting and recycling waste to the extent technically possible.
- >90% sorting rate for the Group and all units.

## RESULTS

- 16,187 tonnes of waste in total
- 1,056 tonnes of hazardous waste.
- 581 tonnes of waste sorted as plastic.
- 92.6% sorting ratio.

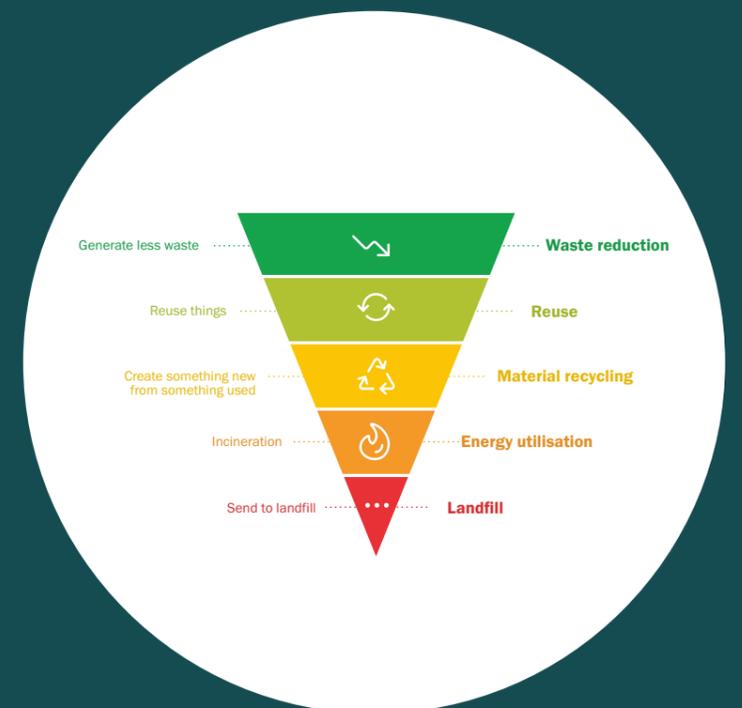
## MEASURES

- Continue surveying waste and with the follow-up of KPIs.
- Strengthened coordination of waste management across the Group as a whole and centralisation of waste management contracts.
- Collaborations with other companies to reduce emissions from waste using solutions such as material recovery rather than incineration.
- Continue working to increase the sorting ratio to a minimum of 90% over time.

	2021	2020
Hazardous waste	1,056	1,063
Other waste	15,132	14,115
<b>Total volume of waste</b>	<b>16,187</b>	<b>15,178</b>
Waste sorted as normal wood	4,728	3,466
Waste sorted as impregnated wood	638	382
Waste sorted as plastic	581	391
Waste sorted as metal	1,293	
Waste sorted as plaster	1,157	
Other waste sorted locally	5,483	5,628
Mixed industrial waste (not sorted locally)	1,193	1,873
<b>Total volume of waste</b>	<b>16,187</b>	<b>15,178</b>
	92.6%	87.6%

## The waste pyramid

The waste pyramid illustrates priorities in waste management and is endorsed in both Norwegian waste policy and the EU Framework Directive on Waste. The goal is to manage waste issues as close to the top of the pyramid as possible. When Moelven facilitates internal transport without packaging, this is an example of waste reduction – without packaging, waste is simply not generated. An example from the lowest part of the pyramid is the delivery of ash from a heating plant to landfill. In some cases, this may be the best alternative, but it can also be avoided by identifying partners that can utilise the ash for other purposes, such as soil improvement.



## Resource optimisation

### Where and why is it important?

Moelven is a resource-intensive industrial company. For example, the industrial wood processing part of the Group has an annual raw material requirement of approximately 4.5 million m<sup>3</sup> of saw logs. There is therefore huge potential in resource rationalisation and optimisation, even with minor production changes.

Moelven therefore works continuously to achieve optimum exploitation of resources and on ensuring that no raw materials go to waste. This is an important topic for Moelven since it affects profitability. It is an important topic for our surroundings since it involves avoiding wasting valuable natural resources.

### Policy and approach

Moelven focuses on resource optimisation throughout the value chain. This applies to both the utilisation ratios for material consumption and to process efficiency. Optimisation must already start at the time of felling in the forest by ensuring that the felling machines cut the saw timber into lengths that correspond largely to the length criteria for the products that will later be made from the log. At the sawmills, the logs are analysed to ensure the optimum extraction of materials. The saw is set to ensure that what is put in as a whole log comes out divided into planks, sideboards, chips and fibre products in a mix that, overall, results in the highest value utilisation for the raw material. To achieve this, each log is analysed with respect to things like size, tapering, twisting and twigs. The most advanced facilities use both external 3D scanning and X-ray scanning for this. The technology enables full traceability throughout the processing from log to the finished sawn timber.

There are significant opportunities for improvement and development in advanced data analysis, which may improve extraction on the basis of historical measurements and results. The use of camera sorting on adjusting machinery helps improve resource utilisation. Sawn timber is sorted and, if necessary, the ends are cut using a process controlled by a computer that will visually assess each individual piece using the cameras. Experience shows that these systems result in a significantly lower level of offcuts and expense than manual sorting.

Operations at several of Moelven's units are

also based on the LEAN principles, which aim to reduce waste and increase efficiency. One of the priority areas is displaying real-time production data to the operators involved so that they have an opportunity to improve the work processes directly. LEAN is also important with regard to safety at the facilities. Experience shows that many workplace accidents happen in abnormal operating situations, and it has been proven that order and tidiness are important risk mitigation measures. Read more about this in the chapter "Health, safety and the environment".

### Evaluation of results

Resource optimisation through log selection is not only based on maximising the recovery factor, it is also based on maximising product value. This is because the market value of certain extracted materials can vary in relation to the volume of the materials extracted.

Exploiting the whole log is an important principle for Moelven. Regardless of how the extraction is carried out, Moelven therefore ensures that all residual raw materials, including chips and bark, are used internally or sold. Now that the pellet factory at Sokna is fully operational, the Group has increased its internal processing of residual raw materials for local business activities.



### AMBITIONS

- We shall make optimum use of raw materials.

### RESULTS

- Yield > 51%.

### MEASURES

- Follow up on LEAN projects and principles in the Group.
- Follow up on relevant KPIs in order to optimise the use of residual raw materials.



### HOW A SAWMILL WORKS

Join us on the sustainable journey from seed to finished wood product

Watch the film.



## Artificial intelligence and people make the difference – together

What happens when you leave the answer to the employees? At Moelven Årjäng Såg AB, the result was new solutions that improved the business.

When Årjäng Såg decided to improve its timber intake, two employees, Stefan Karlsson and Anders Holmstrand, decided to look towards new technology and a completely different industry. They believed that AI technology, or artificial intelligence, from the car industry could also be a great option for a sawmill.

"Using this technology, we can reduce the number of root-reduced logs by 30 per cent. This leads to less wear and tear on the machinery and less driving to empty residual wood chips. We can also run 22 logs through the timber intake each minute, instead of 10. This improves the crane operator's working environment as they are able to focus on the operation of the machine, while the camera and technology determine whether logs require root reduction or not," Stefan explains.

The camera was installed at the end of 2020/ start of 2021 and is situated in the timber intake. Using artificial intelligence, the camera can determine which logs require reduction and which do not. The two employees, Stefan and Anders, have trained the camera on what to look for.

"It has been working very well so far and it's great to be able to see how well it works for us here at Årjäng Såg," says Anders Holmstrand.

# Water consumption

## Where and why is it important?

Water is a scarce resource in many countries and is therefore an important part of our environmental custodianship. In Norway and Sweden, we are lucky and nature provides large volumes of water, but we also use large volumes, which places pressure on the water supply. Rising water shortages worldwide mean that there is a focus on water consumption, including in Norway and Sweden.

At Moelven, the majority of water consumption is linked to the irrigation of saw logs and drying of sawn timber. The timber is irrigated during the summer season to ensure timber quality. Without irrigation, timber is more exposed to drying, as well as pest and fungal damage. Runoff water from timber contains substances that have been washed out of the bark and the wood. These substances can be useful for low-nutrient water but are often considered a disadvantage and a contaminant. Historically, sawmills have usually been constructed near rivers and lakes that could be used both as a transport route and as a source of energy. Moelven's sawmills are still situated near watercourses and have excellent access to water for irrigation without putting pressure on public water supply. For Moelven, it is therefore runoff and the consideration of the water levels in the watercourses during periods of drought that constitute the main reasons why this is an important focus area.

## Policy and approach

### Moelven shall:

- Actively work to reduce its local environmental impact by focusing on continuous improvement.
- Not be responsible for any violation of the Pollution Control Act or similar legislation.

Moelven is subject to requirements from the authorities relating to regular monitoring and measurements of chemical substances in irrigation runoff. In order to operate within the constraints of applicable laws and permits, Moelven continuously follows up on this.

## Evaluation of results

Moelven measures its own water consumption and, since 2021, the Group has established Group-wide reporting to follow up on this area even more effectively. The total water consumption

for the Group was 2,407,508 m<sup>3</sup>. The water largely comprises surface water from lakes and rivers. Less than 2 per cent is groundwater and around 10 per cent is mains water. Bore water and mains water are largely used for industrial processes with stricter requirements for water quality than what can be achieved by taking water directly from local watercourses. This applies largely to the drying process, in which water is added to the surface of the wood that is dried in order to control the process. Mains water is also used for drinking water and other non-industrial processes. Automated climate-controlled irrigation is used at several Moelven production locations. Climate-controlled timber irrigation allows us to use the right water quantity for the climate conditions at all times. This means that the irrigation turns off in the event of precipitation or during the night when humidity is high. This leads to lower water consumption and contributes to less runoff and washout of various substances from the timber and also reduces the energy consumption used for the water pumps.

Freshwater source	Water consumption (m <sup>3</sup> )
Surface water	2,116,959
Groundwater	40,994
Mains water	249,555
<b>Total</b>	<b>2,407,508</b>

The picture shows a pendulum-fed chamber dryer at Moelven Mjøsbuket AS. Timber is stacked into a buffer zone before it is transported into the drying chamber on rails. A lot of water is used during the warm-up phase of the drying process, as well as during final conditioning. During warm-up, the objective is to raise the temperature in the timber as quickly as possible without the timber starting to dry out. This is because there is a risk of fracture when timber dries too quickly at low temperatures. The timber becomes more elastic at higher temperatures and can withstand the tensions that arise. This is why we spray water to maintain a high level of humidity in the chamber. When the timber is cut into e.g. panels, it is important that the timber is not tensioned. A conditioning phase is therefore important once the timber has been fully dried. During conditioning, we spray water to raise the humidity in the surface layers of the timber in order to reduce any tension that has occurred during drying. New driers include modern basing systems that evaporate water more efficiently so that we avoid using more water than is required for the process.



## AMBITIONS

- Monitor our own water consumption and water consumption in the local environment.
- Acquire knowledge of the correlations between Moelven's activities and the water cycle in the local area.
- Acquire knowledge of where and how water is used in our activities.
- Determine targets relating to our own water management.

## RESULTS

- 2,407,508 m<sup>3</sup> of water consumed in 2021.

## MEASURES

- Monitoring water consumption at all production units.
- Evaluating different water risks at production units.
- Installing climate-controlled timber irrigation.

# Sustainable materials

## Where and why is it important?

Moelven's sustainability policy describes how Moelven should, insofar as it is possible, use natural raw materials from forests. Moelven buys certified and controlled timber to ensure that these raw materials come from responsible forestry.

Moelven is a major purchaser of timber, and thus has a responsibility to contribute to responsible forestry. Responsible forestry helps to ensure forest management takes account of the sustained use of the forest, which includes taking into account the forest's biodiversity and the conditions for outdoor recreation.

## Policy and approach

- Moelven shall utilise entire timber logs, including all by-products.
- Moelven shall optimise raw material utilisation to improve resource efficiency and to maximise the value of the raw materials used.
- Moelven shall use certified raw materials from a sustainable forestry. At a minimum, all timber purchased by Moelven shall be checked in accordance with applicable requirements for controlled wood set by recognised chain of custody standards (PEFC™ CoC and/or FSC® CoC). Furthermore, Moelven aims to have as much purchased timber as possible certified in accordance with recognised standards for sustainable forestry (PEFC™ and/or FSC®). At a minimum, this shall correspond to needs

based on the group's sale of certified finished products.

- Moelven shall not be involved, directly or indirectly, in:
  - Unlawful logging or trade of wood or forestry products.
  - Destruction of high preservation value areas during forestry operations.
  - Forestry involving time-honoured or human rights violations.
  - The introduction of genetically modified organisms during our forestry operations.
  - Significant transformation of forests into plantations or non-forestry applications.
  - Violations of ILO fundamental conventions as defined in the ILO Declaration on Fundamental Principles and Rights at Work, 1998.
- Moelven's products shall undergo environmental assessments and certifications that meet the customers' and market's needs.

All of the companies in the Group's timber processing activities are organised and strive to meet applicable requirements for controlled wood, as well as the traceability standards of PEFC™ (Programme for the Endorsement of Forest Certification) or FSC® certification (Forest Stewardship Council).

PEFC™ is an international NGO (non-governmental organisation) that works for responsible



## AMBITIONS

- Moelven will use renewable resources and utilise the entire resource.
- Moelven will use certified raw materials from sustainable forestry and will not buy raw materials from controversial sources.
- Certify raw materials from sustainable forestry.

## RESULTS

- 100 per cent of the timber is checked in accordance with the applicable requirements for controlled wood and a high proportion is PEFC™ certified or FSC® certified.

## MEASURES

- Increase the proportion of certified timber from Swedish forests for our Swedish sawmills. Continue checks and increase the proportion of certified retail products.
- Play an active role in the development of standards for sustainable forestry, based on Scandinavian forests.



Photo: Sören Håkanlind

forestry, and issues certificates to actors who meet the criteria they have defined. The organisation promotes responsible forestry through third-party certification. Moelven is a link in the timber processing value chain, and thus has a responsibility to ensure traceability in order to label its products as PEFC™ certified.

Like PEFC™, FSC® is also an international NGO that works on responsible forestry and issues certificates to parties that meet its requirements for responsible forestry. The difference between these two certifications lies mainly in the story of how these were developed. FSC® includes several different standards, including the FSC® Chain of Custody (CoC) and applicable requirements for controlled wood. As a minimum, all of the raw materials handled by Moelven satisfy the standard for controlled wood.

In the certification, Moelven operates as a link in the value chain, and the company is thus responsible for ensuring traceability. Since traceability throughout the entire production process is not feasible at an individual level, Moelven practices the mass balance principle (credit account) to ensure that all of the products it sells are correctly certified. This means that Moelven cannot sell larger volumes of finished products than can be produced based on the purchased quantity of the corresponding raw material.

It is not the suppliers that are certified, it is specified product groups from the supplier.

The certification is checked at the invoice level per product line. Moelven's customers can find the certification status of the purchased products on the packing slip and invoice.

## Evaluation of results

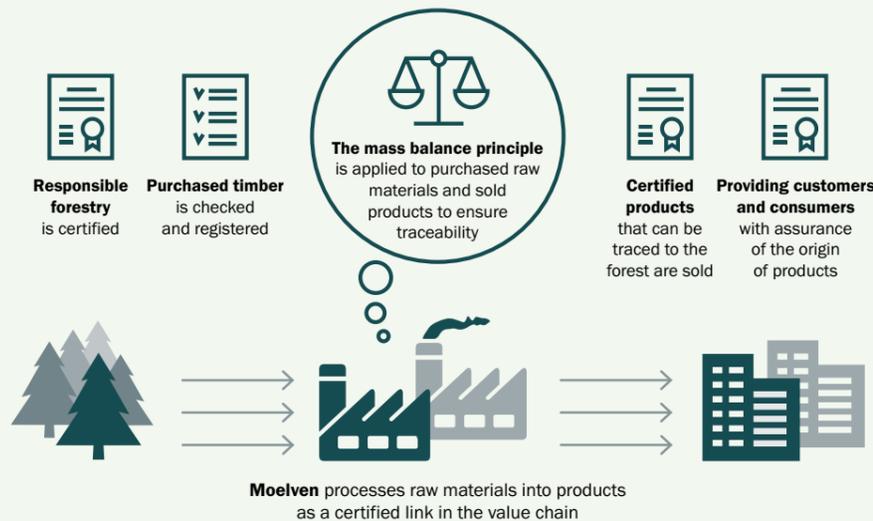
100 per cent of all of timber the Moelven sources is checked in accordance with the applicable requirements for controlled wood. In Norway, all felling is in practice PEFC™ CoC certified and a proportion of it is certified twice in accordance with both PEFC™ CoC and FSC® CoC. In these circumstances, the customer must choose which certification should be entered into the account for the given volume. The principles for certified forestry are different in Sweden to those in Norway. Nevertheless, around 65 per cent of total forestry land is certified in accordance with PEFC™ or FSC® and the proportion is increasing every year.

Moelven's systems for buying timber ensure that it comes from responsible forestry. Moelven also purchases processed wood products that are a part of Moelven's product range. These products are purchased from several different actors who operate in different countries. Moelven is constantly working to ensure that the products come from responsible forestry.



## NEW OPPORTUNITIES IN OLD BARN FROM 1937

Using a new freestanding structure made from glulam inside the existing barn from 1939, Moelven Töreboda AB has helped realise the dream of a theatre at Berättarladan in Sunne that can be used all year round.





Stina Andersson (left), Karin Löfgren and Pål Engh are three of the employees we have that take advantage of opportunities and make a difference.

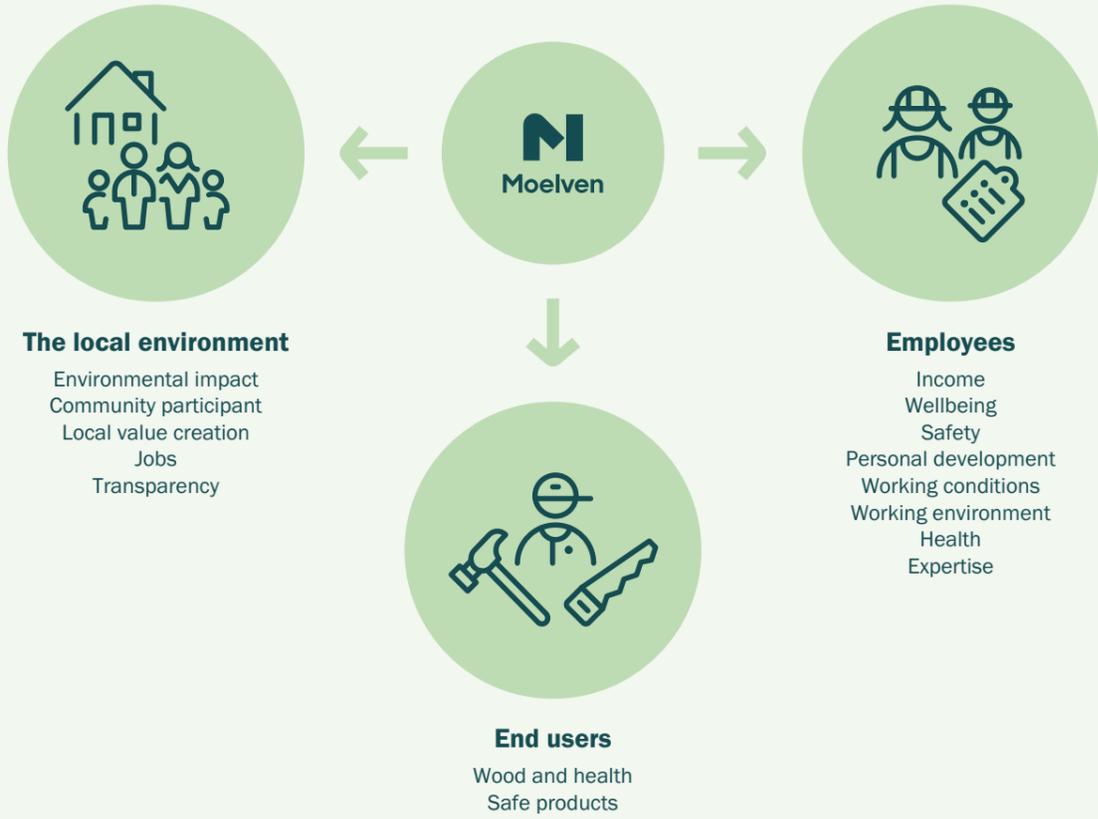


# Focus on people



## Ambition

We shall be an attractive and safe workplace.



FOCUS AREA

## Focus on people

### UN Sustainable Development Goals



**Relevant sub-goals**  
**3.9** - Significantly reduce the number of deaths and cases of disease caused by hazardous chemicals and polluted air, water and soil by 2030.



**Relevant sub-goals**  
**4.4** - Achieve a significant increase in the number of young people and adults with skills, including in technical and vocational subjects, that are relevant for employment, decent work and entrepreneurship by 2030.

### Moelven's policy

- Moelven has a vision of zero workplace injuries, and believes that all injuries are preventable.
- All Moelven employees shall participate in HSE training.
- Moelven shall have active employees that take personal responsibility, develop their expertise and contribute with commitment to their day-to-day work.
- Moelven shall have active managers who communicate and are trustworthy, focus on profits and who create the conditions for innovation and development.



Hege Sagstuen Larsen is a Team Leader at one of the most modern module factories in Europe, Moelven Byggmodul AS.

# Health, safety and the environment

## Where and why is it important?

Our people are the most important resource at Moelven. Ensuring that no-one is injured at work and that everyone returns home in one piece is paramount to the Group. Creating a safe and positive working environment, both psychosocially and physically, which minimises absence due to illness, is also important. Injuries and illness are most stressful for the affected employee, their family, friends and colleagues. At Moelven, absence also means that expertise and experience disappear, which weakens the Group. Over time, a high injury ratio and rate of absence due to illness would also make the Group a less attractive employer, which would make it harder for us to recruit new employees with the expertise we need to remain competitive.

## Policy and approach

At Moelven, our overall objective is zero injuries. We have established a few milestones within four focus areas to help us get there: The LTI rate, TRI rate, number of incidents recorded and absence due to illness.

Through Active Employee Participation and Active Management we focus on strengthening and clarifying individual responsibility and commitment in everyday work to create a positive safety culture and a health-promoting working environment.

Large parts of day-to-day value creation take place when man and machine are in the same area. Ensuring that the interaction between man and machine takes place in a safe manner with no-one getting injured at work is therefore our highest priority. In order to achieve this, we need to be familiar with the various risk factors associated with our activities. One important measure to reduce the injury ratio is focusing on the reporting of dangerous conditions and risk analyses. When the number of reports increases, our knowledge grows and this provides us with greater opportunities to take action before accidents occur.

A good, safe working environment is also essential for reducing absence due to illness. We work systematically on various forms of health-promoting activities to prevent absence due to illness on the part of our employees. In the event of absence due to illness, employees are closely

followed up through dialogue and assessments of their residual capacity for work. Moelven also provides health insurance to its employees, which helps ensure that anyone who needs it can access treatment and return to work more quickly.

## Systematic improvement work

Moelven has made significant structural changes to its HSE work in recent years. We have focused on developing joint safety requirements, visible workwear and monitoring of contractors at our companies. The systematic HSE work has been gradually implemented through our joint HSE, quality and external environment management system – Landax. On 1 January 2020, we started using the first Landax modules and through 2021 we have implemented additional modules and worked to develop knowledge and practical application of the functions on the part of our employees.

HSE is now a natural part of activities in all areas of the Moelven Group. HSE is the first item on the agenda for board meetings, divisional meetings in the companies and for group management team meetings. Moelven has also focused specifically on HSE through the Safety Committee and the HSE Forum. Both of these forums work on relevant issues and Group-wide HSE matters, discuss challenges and share experiences. Moelven also participates in various HSE forums together with other industry players in Norway and Sweden. In this way, we can share our experiences with others and the work to ensure a safe and positive working environment benefits a larger part of society.

## Technical safety portfolio, internal audit team and course portfolio

We have conducted technical safety inspections at all of our facilities in 2021. External parties have been used to review and assess our facilities and our equipment with the aim of ensuring that everything is as safe as possible. The points raised from these inspections form the basis for how we will secure and safeguard our machines and equipment even more effectively. The inspections were carried out during the first half of 2021 and resulted in 2,382 minor and major

**The safety committee** comprises the Group Executive Board, the HSE Manager and employee representatives.

**The HSE Forum** consists of representatives from all divisions and the HSE Manager.



In order for everyone to return home in one piece each day, we need to constantly remind each other to work safely. This was something our employees were reminded out across the companies in 2021.

non-conformities being identified. Many of these non-conformities were corrected immediately, while we need to work on others to establish the best possible solution. All identified non-conformities have been reviewed by the appropriate company board and significant funds have been set aside to rectify the identified non-conformities and protect the production lines from injuries and incidents. This work will continue throughout 2022 and 2023, with the aim of all findings being rectified as soon as possible. We have also established an internal audit organisation to support systematic HSE work at Moelven. 11 auditors have been trained and now make up the team that will complete audits in accordance with our 3-year internal audit schedule. Internal audits are intended to support the companies' systematic improvement work and the auditors' knowledge of good practice and solutions will be actively used for sharing across the organisation.

In order to facilitate increased learning and knowledge about HSE among employees, we have also developed a portfolio of various HSE courses. Seven courses are being adapted for different employee groups and will be ready during the first half of 2022. This will lead to increased expertise and will provide employees with excellent tools for further improving HSE work.

## Investigations and root causes

Other tools used to increase awareness among employees include the investigation of incidents, root cause analyses and preparing learning sheets. Our efforts to learn from incidents and the major HSE efforts across the Group have been highly prioritised at Moelven for a number of years, but have been further intensified in 2021. The purpose of investigations and root cause analyses is to ensure thorough and objective investigation of incidents, as well as ensuring learning and preventive work across the Group as a whole. According to Group policies, investigations must be carried out after any incidents resulting in personnel injury and will be performed by personnel from the Group's HSE organisation. The outcome of an investigation is a learning sheet, on which both the incident and preventive measures are described. The learning sheets will provide a summary of the investigations, will be issued to all managing directors and will be published via Moelven's internal communication channel, Workplace. Here, there is also a dedicated HSE group, in which we also publish information about other incidents, courses and other skills development measures, as well as positive stories about successful colleagues.

Root cause analyses must be carried out by the company after all accidents, regardless of severity. The purpose of root cause analyses is to identify the underlying cause and provide a better basis for doing something about the actual cause of the incident.

# Further development of a positive safety culture

Through the "HSE towards 2023" action plan, Moelven worked on the following focus areas in 2021:

1. Strengthen the HSE organisation and organisation of HSE work.
2. Strengthen HSE work by rolling out active leadership and active employee participation.
3. Implement risk management within operations.
4. Develop and implement HSE courses at all levels in the organisation. Establish a course portfolio of different HSE training courses.
5. Conduct technical safety inspections at production facilities.
6. Establish an internal audit organisation that annually examines compliance with internal and external requirements and rules at company level.
7. Continuous improvement and organisational learning.

We have generated increased engagement and established clear roles working on HSE in the companies. This has enabled us to focus our work on the other items in the action plan, including new risk assessments for the organisation as a whole. Risk assessments constitute the foundation of a safe and secure working environment and set out the premises for the need for additional safety measures, the need for procedures and training and changes to working methods and equipment. All risk assessments classified as red have been reviewed by local company boards for accountability and prioritisation of measures.



“Overall, we carried out 8823 risk assessments across our companies in 2021. The companies have worked extremely well and highlighted risk factors that have now been dealt with and made safe.”

**Anne Cathrine Amdahl**  
HSE Manager at Moelven Industrier ASA

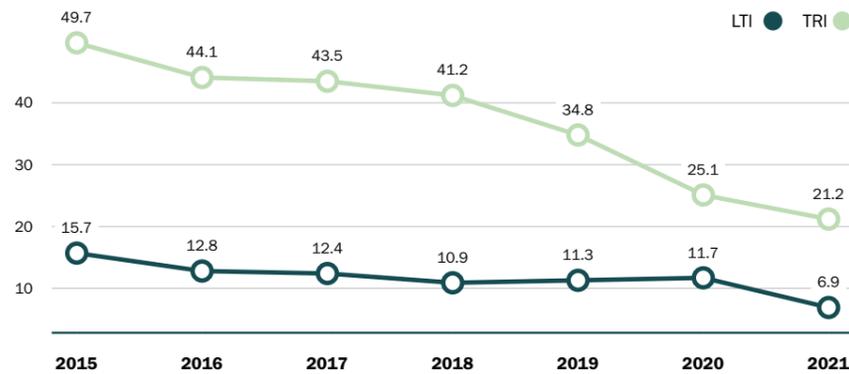
# Evaluation of results

## Injury statistics

Through our systematic work to investigate serious incidents, the use of systematic tools such as root cause analyses and clear expectations for individual employees, as well as excellent work on measures to prevent incidents, we

managed to achieve a significant decline in the number of injuries during the latter half of 2021. In the last year, the LTI rate was around 11, but we were proud to achieve an LTI rate of 6.9 at the end of 2021. We also achieved our target for TRI.

## Development in number of injuries, 2015-2021



### LTI RATE

Injuries resulting in absence per million hours worked

### TRI RATE

Number of injuries resulting and not resulting in absence per million hours worked

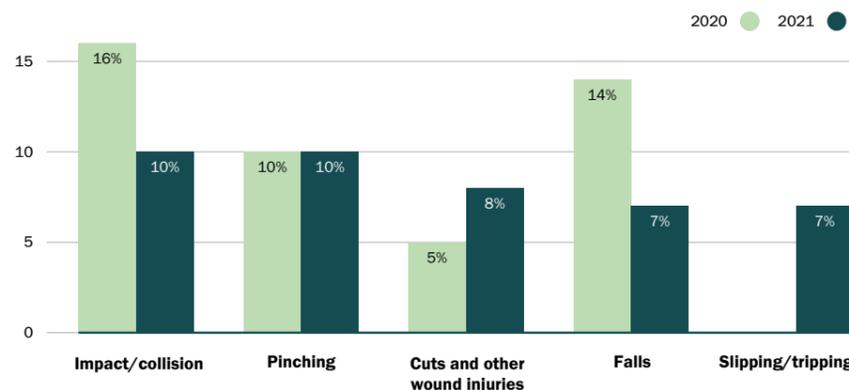
## Reporting frequency

This reduction in the number of incidents is clearly linked to increased reporting of dangerous situations and near-accidents. The large increase in reporting shows that awareness among employees has increased when it comes to areas that can constitute a risk, in other words, the safety culture has improved. This is also shown in injury statistics, where both injuries resulting in and not resulting in absence have decreased significantly.

In 2021, the target was one report per

employee per year. The number of reported near-accidents and dangerous situations has increased from 3843 (2020) to 7265 (2021), which has resulted in a reporting ratio of 2.2 per employee per year. This is a positive increase that we will work intensively to further improve in future years. In addition to increased awareness, increased reporting also helps ensure that dangerous situations can be managed and eliminated before accidents occur. Our reporting system provides us with a good overview of trends, who is affected, possible

## Cause of injury 2020-2021



causes and injury category. In 2021, the following injuries types were most frequently seen in our reporting statistics:

### Absence due to illness

Absence due to illness was 5.6 per cent in 2021, of which 2.5 per cent was long-term absence. Some of the short-term absence can be linked directly to absence due to COVID-19, but it is still important that we continue to increase our focus on this area going forward. During the COVID-19 period, Moelven has closely followed up on the companies and has monitored the number of

infected employees, has assisted by providing advice on measures and established separate policies to reduce the spread of infection. Moelven's internal policies have, in several areas, been more restrictive than the government advice and we can see that this only had a limited impact in terms of decreased production.

The work to reduce absence due to illness is a continuous effort and is closely linked to employees' wellbeing, sense of community and trust in colleagues in the workplace. In 2021, employee surveys were conducted at all Moelven companies and work is being carried out

HSE focus areas	2021 Target	2021 Result	2025 Target
LTI rate	Less than 6	6.9	Less than 4
TRI rate	Less than 24	21.2	Less than 16
Number of registered incidents	1 report per employee/year	2.2 per employee/year	More than 1.2 per employee/year
Absence due to illness	4.2%	5.6%	Less than 4%

*"We are approaching the target of zero injuries at Moelven, but we will not be satisfied before everyone comes home in one piece, every single day. We will therefore continue our focused and targeted work towards a zero-injury working day."*

**Morten Kristiansen,**  
Group CEO

The HSE Forum named an HSE Hero every month in 2021. These are employees who are excellent role models where HSE is concerned and have contributed a little extra towards a positive working environment, safety or health in the workplace. Here are four of them:



**Kamila Rutkowska**  
Head of Logistics, Moelven Langmoen AS

One of the many activities Kamila has launched is a dedicated helmet campaign to ensure that forklift operators, who ensure that everyone in Norway has the goods they need to redecorate and build terraces at home, are always able to perform their work safely.



**Charlotte Lund**  
Production Associate, Moelven Byggmodul AB

Charlotte has trained employees at Moelven Byggmodul Kil in Active Employee Participation with great success! She works actively to identify questions relating to the social working environment in order to ensure that everyone has a better time at work.



**Leif Haglundh**  
Quality, Safety and Project, Moelven Lovene AB

Regardless of how much needs doing in other areas, Leif always puts HSE matters at the top of the agenda. He also contributes a positive spirit, great commitment and clear requirements for the rest of the organisation.



**Petra Magnusson**  
Sawmill Operator, Moelven Årjäng Såg AB

Petra is a role model, who is not afraid to commandeer some space and put the spotlight on safety at Moelven Årjäng Såg AB. Her surroundings are tidy and her positive attitude contributes to a good working environment.

# Safe chemical use

## Where and why is it important?

Moelven uses chemicals in its production both to increase the service life of certain products and materials and to increase the degree of refinement and simplify further processing and maintenance of the products. Some of the chemicals that are used may have a potential impact on health and the environment in the event of direct contact during the production phase, but should not constitute a risk in the production phase or usage phase when used correctly.

This is an important topic for Moelven, since the chemicals may entail a risk in the event of improper handling. It is also a topic that many customers and consumers care about. It is therefore important for Moelven to provide comprehensive and clear information about the use of these chemicals in order to ensure the products are used properly and to gain the trust of end users.

## Policy and approach

There are a number of laws and regulations relating to the use of chemicals, whether relating to handling during the production process or the properties of the finished products. One EU Directive in particular applies to Moelven's products, the Construction Products Regulation (CPR), although Registration, Evaluation, Authorisation and Restriction of Chemicals (REACH) and the Biocidal Products Regulation (BPR) are also relevant. These regulatory requirements are integrated into Moelven's procedures, and all of the products that Moelven produces must comply with

the requirements that follow from these directives. Safety linked to the handling of chemicals in the production process is included as an item during risk reviews and HSE audits at the units. In addition to regulatory and safety considerations, Moelven also has separate objectives in place regarding development and improvement work. These are aimed at the following focus areas:

- Expertise**  
 Continuous skills development is necessary to ensure that Moelven is not only able to handle and use chemicals correctly, but also in order to make the right choices with regard to the chemicals we use now and in the future.
- Prioritisation of environmentally friendly chemicals**  
 When available, environmentally friendly alternatives should be prioritised.
- Product development**  
 We will use development and innovation to actively seek and explore environmentally friendly alternatives.

## Evaluation of results

The chemicals and treatment products covered by the sustainability reporting were chosen based on consumption, potential health impacts and the stakeholder and materiality analysis. In 2021, our production volumes in surface treatment, glulam and Osmo increased and this was the main cause of the increase in chemical use in these areas. The production of impregnated and fire-impregnated products was somewhat lower than in 2020.

## CU-IMPREGNATED PRODUCTS

Cu-impregnation contains copper (Cu), an element that is found naturally in soil. Copper is a vital trace element for humans, higher animals and many plants. Contact with oxygen and moisture is what gives copper pressure-impregnated materials their characteristic green colour. In the form of soluble salts, even small quantities of copper act as a toxin to lower organisms such as algae, fungi and bacteria, which means it gives the materials a very high resistance to rot.

Small quantities of copper salts in pressure impregnated wood will leach out during use. These will bind to the upper soil layer, where the structure is, and will remain there, which makes them largely inaccessible to plants, animals and people. Surface treatment with a terrace stain or oil will reduce such leaching out.

To preserve durability and the environment, as well as human safety in structures, Moelven is keen to ensure the proper use of wood in the right place. This will allow the chemicals that are used all the time to be minimised. Waste Cu-impregnated wood must be delivered to authorised collection points for treated wood, for example a municipal recycling station.



## AMBITIONS

- Moelven will prioritise the use of safe and environmentally friendly chemicals where possible.
- Employees must not handle chemicals without adequate training and information about safe handling and the procedures applicable in the event of accidents.
- Moelven will work actively to identify environmentally friendly substitutes for substances that can have a negative impact on people and the environment.
- Moelven will work actively to eliminate products and substances that contain CMR substances both in production and trade products.

## RESULTS

- The main groups of chemicals have been surveyed and are subject to reporting procedures.
- A chemicals index can be found anywhere that chemicals are handled.

## MEASURES

- Skills development with regard to both HSE and product/process development.
- Continuous efforts to minimise use and explore alternatives.
- Continuously quality-assure and, if necessary, update the MOM and HSE documentation for the products and ensure that employees know where such documentation is available.
- Risk assessments for chemical handling and implementation of corrective measures as needed.
- Regular measurements and risk assessments to prevent and mitigate potential negative impacts on people and the environment.
- Continue the work to identify chemicals in production processes and products.

Name	Description	2021	2020
<b>Impregnation fluid (litres)</b>	<p><b>Area of application:</b> Provides resistance to moisture, rot and fungus attacks and increases a product's service life.</p> <p><b>Potential health impacts:</b> Moelven's Cu-impregnated products contain the element copper (Cu). Besides this, the products contain no heavy metals. The so-called "royal treatment" is done by drying the Cu-impregnated products before "boiling" them in coloured linseed oil. Moelven also supplies glulam based on TMF-impregnated materials. The impregnation fluid does not contain heavy metals and consists of biodegradable antifungicides. No negative health impacts have been identified when the pressure-impregnated products supplied by Moelven are used properly.</p>	1,151,778 (Cu)	1,215,948 (Cu)
		20,650 (TMF)	22,420 (TMF)
<b>Paint, primer and stain (litres)</b>	<p><b>Area of application:</b> Paint, primer and stain are aesthetically pleasing, provide resistance to moisture, rot and fungus attacks and increase a product's service life.</p> <p><b>Potential health impacts:</b> Industrial application of paint, primer and stain is performed more efficiently and in a safer environment compared to painting after installation. This reduces the risk of impact on health, while also ensuring that the handling of spills and waste can be done more effectively.</p>	1,658,057	1,535,732
<b>Fire impregnation (litres)</b>	<p><b>Area of application:</b> Moelven's unique Fireguard impregnation provides resistance and passive protection against fire. Used for both indoor and outdoor products.</p> <p><b>Potential health impacts:</b> Products documented as environmentally friendly impregnation agents meet the requirements in the EU Building Products Directive and are handled as ordinary treated wood during waste management. No hazardous chemicals are emitted during use or in the event of fire.</p>	21,266	25,792
<b>Glue (kg)</b>	<p><b>Area of application:</b> Adhesives are used as a binding agent in many products, for example glulam. Moelven mainly uses MUF (melamine-urea-formaldehyde) and some PRF (phenol-resorcinol-formaldehyde) in glulam. All glulam is labelled based on the type of glue used.</p> <p><b>Potential health impacts:</b> Moelven generally uses glues produced from oil that does not originate from fossil sources and thus has a low environmental impact. Glulam has no impact on the health of the user when used properly.</p>	6,654,604	6,303,805
<b>Royal impregnation (litres)</b>	<p><b>Area of application:</b> Royal impregnated wood is wood that has been treated with a combination of pressure impregnation using water-soluble agents and an oil treatment during which the wood is boiled in oil. This contributes to high-quality materials with limited maintenance requirements and a long service life.</p> <p><b>Potential health impacts:</b> The "royal treatment" is done by drying the Cu-impregnated products before "boiling" them in coloured linseed oil. It may therefore contain copper. No adverse impacts on health have been identified in connection with correct use of linseed oil and pressure-impregnated products.</p>	45,992	63,951
<b>Osmo (litres)</b>	<p><b>Area of application:</b> Osmo is a wood treatment product based on natural oil and waxes. The oil penetrates the wood and protects it from within. The wax creates an elastic, microporous surface that protects the wood from external impacts, and the wood thus retains its natural appearance and is protected.</p> <p><b>Potential health impacts:</b> There are no known potential health impacts from using Osmo. It consists of sunflower, soya, lentil and thistle oil and is approved for use in contact with foodstuffs.</p>	10,538	8,580

## Diversity and equality at Moelven

Moelven's strategy stipulates that we will work to build a culture that promotes diversity through inclusion, with a particular focus on equality.

One of the objectives for our future development is to increase the proportion of women in management positions. In order to achieve this target, we need to look beyond the obvious – the recruitment process itself – and think about how we can ensure that our industry is attractive to women that possess the right expertise. In 2021, we recruited more women to management positions at Moelven.

Moelven's Code of Conduct states that we shall have an inclusive work culture and actively work to ensure a positive working environment characterised by equality and diversity. Moelven accepts no form of harassment or discrimination on the basis of gender, race, religion, age, disability, sexual orientation, political conviction, national or ethnic origin or other factors. This has been the approach at Moelven for a number of years and guidelines and internal control procedures have been established to ensure compliance.

One of the measures is a requirement to conduct an anonymous employee survey at all Group companies each year. There are also established reporting procedures in place that enable all employees to anonymously report any

violations of laws, regulations, intragroup guidelines or other misconduct.

In 2021, Moelven's employee survey was further developed, largely on the basis of the knowledge and experiences gained from the active employee participation and active leadership processes. The revised employee survey was conducted at all units in the Group in November 2021. The employee survey is also part of the annual cycle in the Group's HR strategy and helps us to identify misconduct, while strengthening employees' opportunities to speak up if they are subject to harassment.

Data from employee surveys is analysed and forms an important basis for risk assessments and planning of continued work to ensure equality and anti-discrimination.

Legislation in Norway and Sweden requires companies of a certain size to conduct pay surveys focusing on pay differences between genders for equal work. These surveys are conducted for the units covered by the regulations and are published as part of the companies' annual reports. The table below shows the results from the survey conducted in 2021 for the Group's parent company, Moelven Industrier ASA:

Gender representation in the company	Female	Male	Total
Members of the Board of Directors	2	5	7
Employees	35	45	80
Temporary employees	5	12	17
Part-time employees	3	5	8
Percentage	43.8%	56.3%	100%
Absence due to illness	3.14%	3.35%	
Absence due to children's illness (days)	9	2	11
Parental leave (days)	129	60	189

Women's pay as a proportion of men's pay (by role level)	2021
1 - Group Executive Board	1)
2 - CEO staff/support	
3 - Middle managers with HR responsibility	2)
4 - Middle managers with professional responsibility	92%
5 - Salaried employees	2)
6 - Operations	2)
7 - Trainees/apprentices	106%

Percentage of women by role level	2021
1 - Group Executive Board	25%
2 - CEO staff/support	0%
3 - Middle managers with HR responsibility	20%
4 - Middle managers with professional responsibility	48%
5 - Salaried employees	50%
6 - Operations	80%
7 - Trainees/apprentices	29%

The pay differences identified through the survey are consistent with what must be expected considering differences in professional fields and education levels within each role category.

## Meet four of the talented women at Moelven

We are proud of the talented women at Moelven who make use of opportunities and go on to deliver every single day. We have spoken to four of them and heard about the best aspects of their jobs. There is no doubt that there are many exciting opportunities across our companies and we look forward to welcoming more female employees in the future!



“ As a Process Engineer, I have had the opportunity to meet people from various parts of Moelven and to learn from their experiences and knowledge of the industry.

**Lisa Nilsson**  
Process Engineer



“ The best aspect of my job is the varied tasks and the unique experience of sustainability work in a large Group.

**Marianne Jevne Berge**  
Trainee



“ One of the most fun things I have done at work has to be developing the trolley square as it is now. The trolley square contains ready-made kits for the element stations.

**Ingrid Vetlesen Jensen**  
Production Employee



“ I work in crude sorting and I couldn't be happier. In crude sorting, we rotate between three different areas and no two days are the same. This is the great thing about working at Moelven.

**Hajrija Hodzic**  
Sawmill Operator

1) Cf. Note 26.3 in the Group's annual report

2) Information exempt from public disclosure for reasons of privacy.



Our people and the expertise they possess is the most important resource at Moelven. This is why we constantly focus on the professional training of apprentices and trainees, further education of employees and development of excellent managers. By placing skills development in a strategic context, we develop the business, ourselves and others.



Lisa Nilsson is a Process Engineer at Moelven Industrier AB.



Employee and Management Development Manager at Moelven, Terje Melheim, has implemented Active Employee Participation with the employees of the Group.

## Employees make a difference

Active Employee Participation was implemented for Moelven employees throughout 2021. This culture work is strengths-based and includes a dialogue sheet based on questions within the areas “I take personal responsibility, I contribute with involvement and I develop the business, myself and others”.

This has led to a lot of excellent suggestions for improvement and employees have the opportunity to make a difference and promote positivity in their own day-to-day work.

In order to support employees in Active Employee Participation, managers have also completed an Active Management programme in which they have worked on communicating and

acting credibly, being results-oriented and facilitating development and innovation.

### ... what next?

In order to follow up and measure the areas covered by both Active Employee Participation and Active Management, Moelven conducted its first joint employee survey for the Group as a whole in 2021.

The employee survey was developed based on the Active Employee Participation and Active Management programmes. This survey provides us with the opportunity to follow up on areas that need to be improved and Moelven now knows which areas employees highlight as strengths.



## Taking responsibility together with SOS Children's Villages

Together with SOS Children's Villages, Moelven continues to provide opportunities to children and adolescents in some of the poorest countries in the world.

For the second year in a row, Moelven is supporting SOS Children's Villages with a contribution of NOK 500,000. "At Moelven, our people are our most important asset. They are the ones who make a difference and that is also the case for the children in SOS Children's Villages. By providing children and adolescents with opportunities, we can help them change the world. This is something we are both proud of and happy to be part of," says Group CEO Morten Kristiansen at Moelven Industrier ASA.

**More children will grow up to become the strongest version of themselves**  
 "We are thrilled that Moelven has chosen to extend its partnership with SOS Children's Villages. This partnership will continue to make a huge difference to the lives of these children. Together, we can provide more children with the opportunity to grow up to become the strongest version of themselves," says Sara Wäsström, Strategic Partnership Manager at SOS Children's Villages Sweden.

## In December, Moelven constructed gingerbread homes.

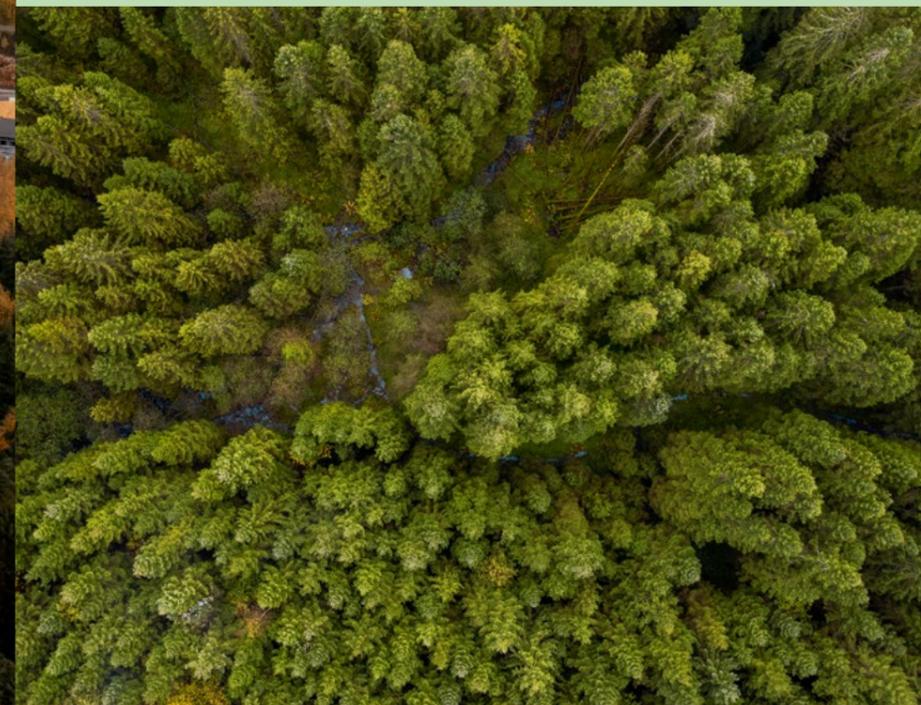
Timber was replaced with gingerbread dough when Moelven employees baked gingerbread houses to raise money for SOS Children's Villages. "We are now able to donate NOK 33,420 to children who need it," says Sponsorship Manager Torgeir Berg with a smile. Moelven employees all came together to volunteer their time towards the Christmas effort back in December. For every gingerbread house they built, Moelven donated NOK 250 to SOS Children's Villages. Employees could also choose to make an optional donation if baking was not their strong suit. The goal of raising NOK 25,000 was reached by a clear margin and the baking and donations in December raised no less than NOK 33,420. "The commitment shows that there is a great willingness to give," says Berg. These contributions will support SOS Children's Villages in their work to provide children at risk of homelessness with a safe upbringing.

**Creating unity**  
 As well as supporting a good cause, the campaign also had a positive impact on the working environment. "We found that several people joined forces to build gingerbread houses as a shared activity," says HSE Manager, Anne Cathrine Amdahl. Not only were there traditional gingerbread houses, there were also some contributions that stood out. All of the employee contributions were impressive and included highlights such as sawmills, the Mjøsa Tower and modular buildings made from gingerbread dough. "Moelven employees possess a great deal of construction expertise, so perhaps it was natural to bring the toolbox into the kitchen," Amdahl jests. These contributions are in addition to Moelven's annual contribution of NOK 500,000.

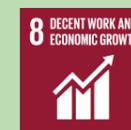




Many of our operations are important cornerstone companies in smaller locations, both in Norway and in Sweden. Moelven Østerdalsbruket AS in Koppang is one such company.  
Photo: Hans Haug



# Local values



## Ambition

We shall create more green jobs



## The local environment

### Where and why is it important?

Moelven has almost 30 bioenergy plants that produce thermal bioenergy both for its own industrial production and for resale to external customers. Energy produced by burning wood and chips is part of a far shorter carbon cycle than energy from fossil energy sources and is therefore defined as renewable energy. Moelven covers approx. 3/4 of its energy requirements for industrial activities using self-produced, renewable energy. This, combined with the natural carbon storage in its products, comprise the most important reasons for the Group's high levels of raw material utilisation and the climate benefits of using wood as a construction material. However, bioenergy production does impact the local environment through, among other things, emissions of particulate matter, NOx and CO.

Moelven also affects the local environment through e.g. goods transport to and from our industrial sites and noise from our facilities. We also use a lot of water to irrigate timber to prevent it from drying out and becoming damaged during storage. Irrigation water is largely taken from adjacent watercourses. Both water consumption and runoff have an impact on the environment and are subject to local regulations.

### Policy and approach

Moelven also affects the local environment through our activities, such as energy production in incinerator plants, transport, waste management and water consumption. Moelven's sustainability policy clearly states that

- Moelven shall be a natural part of the local community and contribute to economic value creation.
- Moelven shall work actively to reduce its local environmental impact by focusing on continuous improvements.
- Moelven shall not be responsible for any violation of the Pollution Control Act or similar legislation.

### Evaluation of results

Moelven's bioenergy plants vary in size from 1 to 15 MW, with an average of around 6 MW. These incineration plants mainly use biomass to produce bioenergy.

Concentrations of significant fumes and dust are surveyed on an annual basis. At some facilities this is done through continuous measurement and at other facilities measurements are taken at different points during the year. Naturally, there will, therefore, be some variation in these and an analysing the figures as a whole is of little value. Follow-up takes place based on local data. High CO values may indicate that a combustion process is not optimised and therefore any reduction will be considered to be a very positive thing from both an environmental and a financial perspective.

The reduction in the number of bioenergy plants and total capacity from 2020 to 2021 was the result of the sale of the Group's stake of 51 per cent in Moelven Telemarksbruket AS, effective from 4 January 2021.

Incinerator plants	2021	2020
Incinerator plants - total installed capacity [MW]	173	176
Average capacity per plant (boiler 1 + boiler 2) [MW]	6	6
Number of boilers reported	29	30



### AMBITIONS

- Reduce emissions of NOx, SOx and CO.
- Work actively to continuous improvement of our local environmental footprint.

### RESULTS

- No breaches of the Pollution Control Act or similar legislation in 2021 that resulted in fines.

### MEASURES

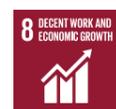
- Further expand the mapping of local environmental impact and compliance with applicable laws, regulations and permits linked to environmental impact.



FOCUS AREA

## Local value

### UN Sustainable Development Goals



#### Relevant sub-goals

**8.2** - Increase economic productivity through diversification, technological modernisation and innovation, including with emphasis on profitable and work-intensive sectors.

**8.8** - Protect labour rights and promote a safe and secure working environment for all employees, including migrant workers and in particular female migrants, as well as employees in difficult employment conditions.

### Moelven's policy

- Moelven shall be a natural part of the local community and contribute to economic value creation.
- Moelven shall work actively to reduce its local environmental impact by focusing on continuous improvements.
- Moelven shall not violate the Pollution Act or similar legislation.
- Moelven shall have an inclusive work culture and shall actively work to ensure a positive working environment that is characterised by equality and diversity. We do not accept any form of harassment or discrimination on the basis of gender, race, religion, age, disability, sexual orientation, political beliefs, national or ethnic origin or other factors.



Photo: Mattias Blomqvist

### MOELVEN TAKES RESPONSIBILITY

Moelven companies are often found outside major cities and urban areas. Many of our operations are important cornerstone companies in smaller locations, both in Norway and in Sweden. That is why it is crucial to us that we contribute to vibrant local communities.

In April 2021, Moelven Notnäs Ransby AB made a financial contribution to "Stora värstädningen" (the big spring tidy-up) in Sunne and Syslebäck. This meant that 280 children and young people from local sports teams had the opportunity to collect 2.5 tonnes of waste from the local community. We are glad to have played a part in this!

## Economic value creation in local communities

### Where and why is it important?

Secure jobs, a good and fair social system for health, education and welfare and a well functioning social infrastructure are important to all of us. In Scandinavia, we generally have a high standard of living, high levels of education and a good welfare system. This is the result of a community in which private businesses make important contributions through creating jobs and paying taxes and fees.

Moelven is a significant contributor in many of the local communities in which the Group carries out activities. The way in which the Group's activities are run and developed have direct ripple effects in the local community in the form of jobs, revenue for local government and activities for other businesses. At the same time, Moelven relies on good relationships with the local community in order to attract the right people so that the Group can develop and grow in line with opportunities.

### Policy and approach

Moelven's operational activities consist of 33 legal entities across 41 production sites in Norway and Sweden. Common to most of the production companies is their geographical location in rural areas with close links to the forest and forestry industry. The companies are often important cornerstone companies in their areas. Moelven emphasises buying local wherever possible and creating local job opportunities.

The organisational structure, using legal entities, creates ripple effects in the local economy through the companies' value creation and tax contributions, through the purchase of goods and services that in turn generate revenue for other businesses and not least by being a safe and predictable workplace.

### Evaluation of results

Through the use of calculation keys for social contributions, a company's social contributions can be estimated based on revenue, cost of goods, payroll costs and tax contributions corrected for public subsidies. 2021 was a record year for Moelven, with operating profits of just under NOK 3 billion. Total value creation for Moelven's Norwegian activities in 2021 was NOK 3,231 million and NOK 3,528 million for Swedish activities. We have therefore been a significant contributor in many areas with our 3,312 employees. Profit before taxes for the Group was NOK 2,991 million. This increase in profit was the main cause behind the increase in social contributions compared to the previous year.

The data used to calculate Moelven's social contributions in Norway and Sweden is the accounting data from Moelven's Norwegian and Swedish companies. Because the two countries have different tax systems, there is some uncertainty linked to the figures. The calculation only shows the direct tax the Group contributes. The model does not include secondary and tertiary effects (ripple effects) contributed by Moelven and is therefore a conservative estimate of the total social contribution.

Moelven Østerdalsbruket AS is located in Koppang in Østerdalen, Norway. At the end of 2021, the company had 61 employees. The company made NOK 13.7 million in social contributions throughout the year. This means that Moelven Østerdalsbruket contributed approximately 23 teaching positions for primary schools or 56 daycare spaces in the municipality. With a population of 2,318 people in Q4 2021 (Statistics Norway), there is no doubt that the company is a key contributor to the local community.

	Moelven Østerdalsbruket AS	Norway	Sweden	Group
Operating revenue	325	7,804	8,262	14,872
Value creation		3,231	3,528	7,308
Number of employees	61	1,705	1,578	3,312
Corporate tax*	1	320	317	643
Total paid Employer's National Insurance Contributions	2	119	214	333
Tax paid on wages	9	202	284	494
Public subsidies	-1	-2	-4	-6
<b>Tax contribution</b>	<b>14</b>	<b>639</b>	<b>811</b>	<b>1,464</b>

\* Tax payable based on profit for the year



### AMBITIONS

- Provide secure jobs in the local community.

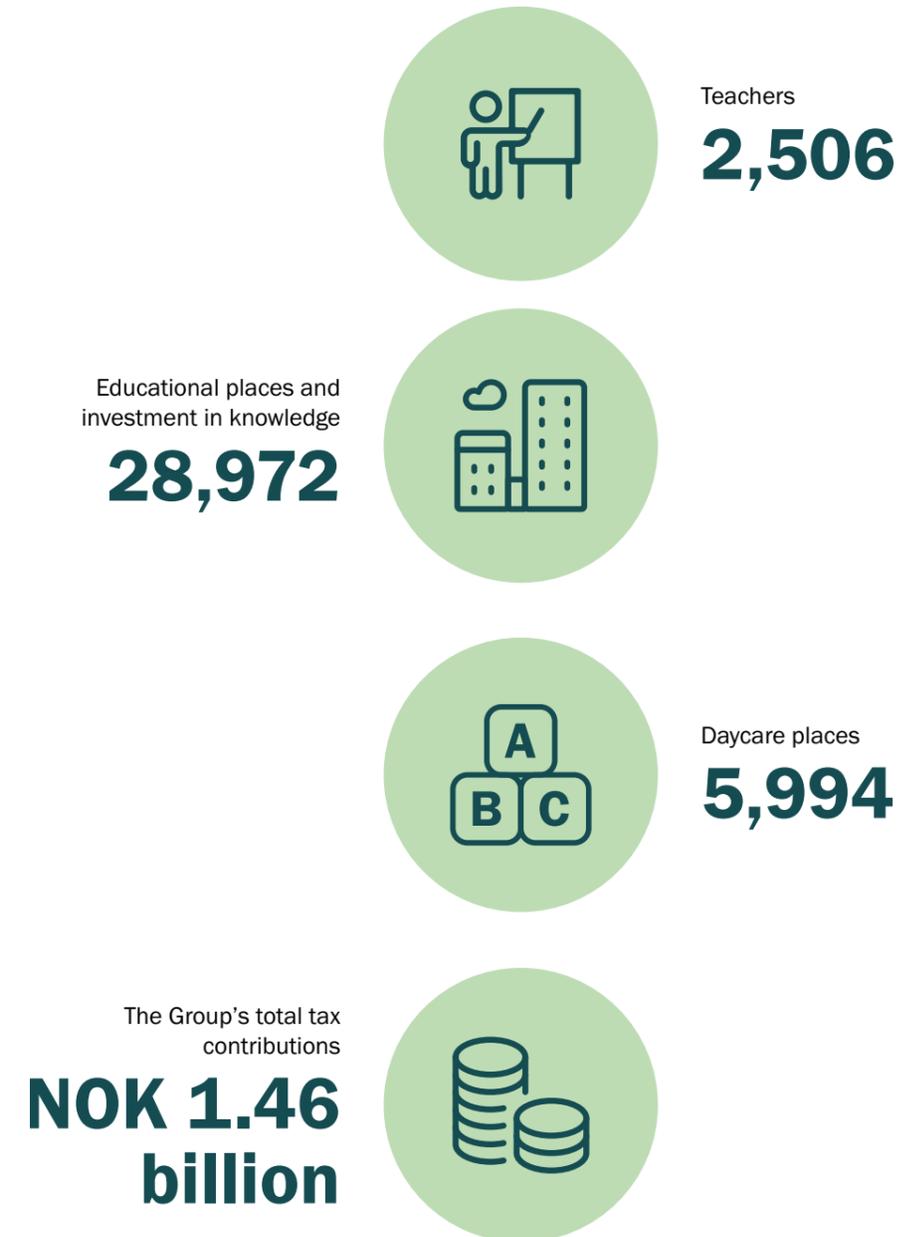
### RESULTS

- Estimated tax contribution of NOK 1,464 million in 2021.

### MEASURES

- Creating and providing safe and secure jobs that make positive contributions to the local community and building a sustainable future using wood.

## What could Moelven's tax contributions pay for?



The Group's contributions have been calculated based on the figures for the average annual salary for teachers (Statistics Norway), educational support for full-time students in Norway (Lånekassen) and the average cost of a daycare space for children between 0 and 2 years of age (Directorate of Education).



### MOELVEN SKOG CREATES 500 JOBS

Moelven Skog AB employs a total of 500 FTEs in Värmland, Dalarna, Örebro and Västra Götaland. Around 80 of these are our own employees, while the rest are contracted forestry managers, forestry planners, timber lorry drivers and forestry machinery operators. Through its activities, Moelven Skog helps to maintain vibrant local communities and we also need people to live and work in smaller regions in order to offer our services to forest owners. Together, we create local value!

### Local values from the investment promise of our time

In June, Moelven announced that it will modernise and develop capacity at Moelven Edanesågen AB and Moelven Valåsen AB. Overall, the Group will invest more than SEK 600 million in the two sawmills in the years to come. With around 800 local residents, this investment is huge for the small village of Edane in the Municipality of Arvika. When the project is finished during the first half of 2024, Moelven Edanesågen will see a significant increase in production capacity. In turn, this will contribute to a vibrant local community and increased competitiveness.

[Read more about the investments.](#)



## A reliable partner

### Where and why is it important?

“We deliver” is one of our core values. By this, we refer to the fact that Moelven is reliable and keeps its promises. In order to live up to our mission – Moelven harvests raw materials from the forest and creates the products and solutions the world needs – we rely on the trust placed in us by the community and our various stakeholder groups as a social and business partner. We build trust by cooperating and communicating with everyone around us. This also forms the basis for sustainability work and communication on how we affect the outside world.

Moelven views anti-corruption work and compliance with competition legislation as important parts of the work aimed at achieving long-term sustainable development. This minimises the risk of ending up in situations that have a negative effect on our reputation or finances.

### Policy and approach

The Board of Directors has considered and approved policies within the following areas as relevant to this topic:

- Compliance with competition legislation
- Transparent corporate culture and procedures for reporting misconduct
- Compliance with the EU General Data Protection Regulation
- Ethics
- Sustainability

Anti-corruption and ethics are key components of Moelven’s corporate strategy. A strong, reliable reputation is vital to our business and must ensure our credibility with customers, suppliers, lenders and other stakeholders and contribute to us being perceived as an attractive employer.

Moelven dissociates itself from all forms of corruption and improper actions that impede free competition and market balance. In the Group’s business activities there must always be a sound, ethical and moral attitude towards employees, customers, suppliers and other business partners, which entails that employees must neither accept nor offer bribes or other benefits for business or personal gain.

The code of conduct and Moelven’s attitude towards competition law have been communicated to company executives, the sales and marketing organisation and financial managers in physical meetings, and have also been communicated to other employees.

Another important area that must be safeguarded in order for us to be a reliable partner is the processing of personal data. All stakeholders should be confident that Moelven will process personal data in a safe and secure manner. Moelven therefore has internal privacy policies and procedures to ensure compliance with the requirements of the General Data Protection Regulation (GDPR). These are reviewed annually in accordance with applicable regulations.

Since 2021, Moelven has been a member of the UN Global Compact and is thereby obliged to adhere to the UN Principles for Responsible Business. In the Moelven Group, there must be no discrimination based on gender, ethnic origin, language, sexual orientation, religion or philosophy. Job descriptions, areas of responsibility, expertise and work effort form the basis for determining pay, promotion and recruitment. Moelven will also adapt conditions for people with reduced functional abilities.

Moelven does not accept conditions in suppliers’ or customers’ operations that constitute breaches of the Universal Declaration of



### WHISTLEBLOWING

The general rule at Moelven is that issues should be raised with the person concerned. If this fails to resolve the issue, or if you believe that the issue needs to be raised with someone who can do something about the situation, the Group’s whistleblowing procedures should be followed. You are always entitled to notify the authorities, although in most cases it would be better to raise the issue internally first. Any reports may also be raised directly with the Group’s whistleblowing ombudsman via email at [varsling@moelven.com](mailto:varsling@moelven.com) or via [whistleblowing.moelven.com](mailto:whistleblowing.moelven.com)



Human Rights or other unethical conditions such as for example child labour or social dumping. An IT tool was implemented in 2020 to conduct systematic monitoring of the entire supply chain’s compliance with the requirements set out by Moelven. This system will be an important tool for complying with the requirements set down in the new Transparency Act that enters into force in Norway from 1 July 2022.

Moelven has also established policies and procedures for reporting misconduct. Moelven wants to make it clear to all employees that the Group’s corporate culture is based on transparency. It must be acceptable to report concerns and wrongdoing, and these must be discussed and resolved. The guidelines also give the right to anonymity and describe how reports should be submitted if the whistleblower wishes to remain anonymous.

The 2021 employee survey was conducted for the Group as a whole at the same time. Data insights provide Moelven with the opportunity to introduce accurate and targeted measures at Group, division and company level.

### Evaluation of results

No need to implement special measures to ensure compliance with legislation and Moelven’s own policies has been identified other than the established procedures and ongoing work on Active Employee Participation and Active Management.

Moelven’s employee survey includes a separate element for identifying any harassment. All incidents are managed locally using established procedures and policies.

## Global Compact

The UN Global Compact is a UN organisation for sustainable business and is the world’s largest business initiative for sustainability. The initiative has more than 12,354 member companies in 160 countries. Today, local UN Global Compact networks can be found in around 70 countries and on every continent, including in Norway.

Moelven committed to the UN Global Compact initiative for corporate social responsibility and its principles on human rights, labour rights, the environment and anti-corruption in 2021.

### Human rights

1. Businesses should support and respect the protection of internationally proclaimed human rights; and
2. make sure that they are not complicit in human rights abuses.

### Labour

3. Businesses should uphold the freedom of association and the effective recognition of the right to collective bargaining;
4. the elimination of all forms of forced and compulsory labour;
5. the effective abolition of child labour; and
6. the elimination of discrimination in respect of employment and occupation.

### Environment

7. Businesses should support a precautionary approach to environmental challenges;
8. undertake initiatives to promote greater environmental responsibility; and
9. encourage the development and spread of environmentally friendly technologies.

### Anti-corruption

10. Businesses should work against corruption in all its forms, including extortion and bribery.



### AMBITIONS

- Compliance with the UN Declaration of Human Rights and Moelven’s Code of Conduct requirements throughout the entire value chain.
- No instances of discrimination or abusive treatment of employees.
- No instances of corruption or price fixing.

### RESULTS

- No reported violations of the UN Declaration of Human Rights or Moelven’s Code of Conduct.
- No reported instances of corruption or price fixing.

### MEASURES

- Continuous monitoring of compliance with the Group’s Anti-Corruption Policy and Code of Conduct.
- Regular delivery of training programmes on competition law.
- Implementation of checks of the supply chain’s compliance with the UN Declaration of Human Rights and Moelven’s Code of Conduct.

# Key figures for last 5 years

Amounts in NOK millions	2021	2020	2019	2018	2017
<b>THE GROUP</b>					
Operating revenue	14,872	11,665	10,297	11,021	10,768
EBITDA	3,389	1,011	630	935	716
Depreciation	351	344	296	282	278
Impairment	52	4	-2	66	18
Operating profit	2,986	662	335	586	420
Financial items	5	-59	-96	-8	-47
Result before tax	2,991	604	240	578	374
Total capital	8,269	5,833	5,518	5,302	5,045
Equity in per cent	55.5	49.1	42.9	45.9	41.5
Operating margin in per cent	20.1	5.7	3.3	5.3	3.9
Investments	420	272	479	497	357
Number of employees	3,312	3,391	3,399	3,524	3,546
<b>TIMBER</b>					
Operating revenue	5,046	3,445	3,119	3,263	3,118
EBITDA	1,794	366	243	449	267
Depreciation	103	103	97	99	103
Impairment	-	4	-	7	18
Operating profit	1,691	259	146	343	147
Financial items	-9	1	-5	-4	-17
Result before tax	1,682	260	141	339	129
Total capital	3,079	1,743	1,513	1,663	1,545
Operating margin in per cent	33.5	7.5	4.7	10.5	4.7
Investments	194	88	116	137	99
Number of employees	630	636	629	620	650
<b>WOOD</b>					
Operating revenue	6,164	4,730	4,018	3,977	3,806
EBITDA	1,504	482	265	318	266
Depreciation	117	111	102	108	111
Impairment	3	-	-2	59	-
Operating profit	1,384	372	165	152	155
Financial items	-20	-19	-29	-16	-25
Result before tax	1,364	353	136	136	130
Total capital	3,866	2,802	2,514	2,467	2,414
Operating margin in per cent	22.5	7.9	4.1	3.8	4.1
Investments	155	130	117	198	120
Number of employees	1,108	1,099	1,114	1,108	1,079
<b>BUILDING SYSTEMS</b>					
Operating revenue	3,913	3,347	3,003	3,743	3,856
EBITDA	160	166	135	191	207
Depreciation	140	90	78	62	53
Impairment	49	-	-	-	-
Operating profit	19	76	57	128	154
Financial items	4	-5	-4	-1	-2
Result before tax	23	71	53	127	152
Total capital	1,694	1,909	1,751	1,751	1,809
Operating margin in per cent	0.5	2.3	1.9	3.4	4.0
Investments	54	22	56	93	119
Number of employees	1,383	1,490	1,494	1,647	1,687
<b>OTHER ACTIVITIES</b>					
Operating revenue	4,553	3,802	3,728	3,548	3,415
EBITDA	-6	-4	-14	-24	-23
Depreciation and impairment	41	41	19	13	12
Operating profit	-47	-45	-32	-37	-35
Financial items	31	-36	-58	13	-3
Result before tax	-16	-81	-90	-25	-38
Investments	18	32	190	69	19
Number of employees	191	166	162	149	130

Moelven strives to communicate actively and transparently with the market and to provide all interested parties with equal access to financial information.

www.moelven.com includes performance reporting, financial status and information on the policies Moelven is governed by.

The annual result for 2021 was Moelven's strongest ever. The group reported an operating profit of NOK 3 billion, compared to NOK 662 million in 2020.

The GRI index shows the correlation between Moelven's reporting and the requirements set down in the GRI standard.



This report has been produced using 100% recycled paper that is FSC® and Nordic Swan Eco-labelled.





The Mjøsa Tower, Mjøsa Bath and Mjøskanten Bolig og Næring allow us to showcase to the world just what can be built using wood. Photo: Frederik Garshol

**Moelven Industrier ASA**

Box 134

NO-2391 Moelv

[moelven.com](http://moelven.com)