

# Sustainability report 2023







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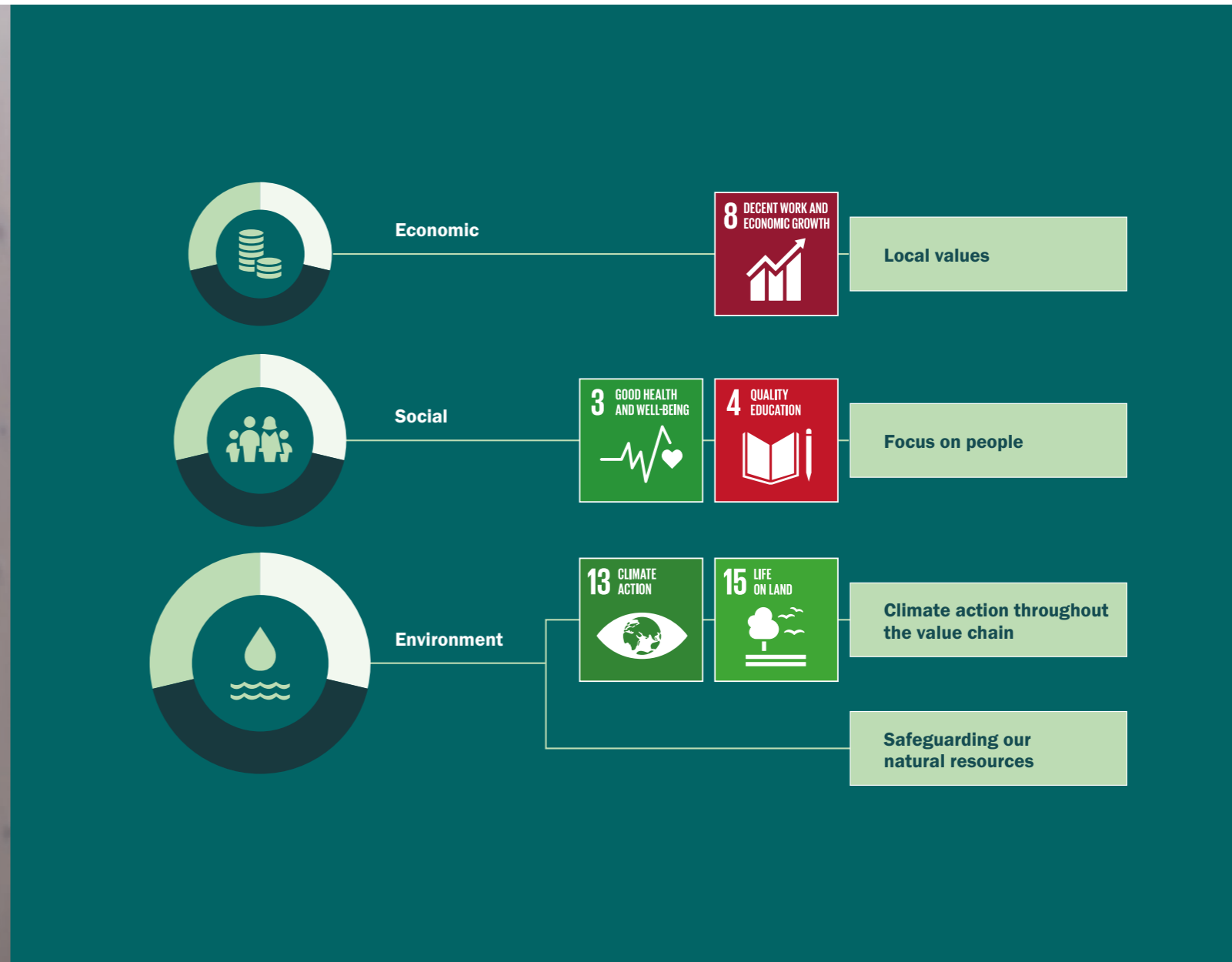
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# Hammering on towards climate targets together

**Rune F. Andersen**  
Chief Sustainability Officer with Moelven

After almost 43 years in Moelven – the last 29 of them at Moelven Byggmodul AS – Jan Arild Johansen joined the ranks of pensioners in the spring. He finished his last working day with the same hammer that he was given on his first working day at Moelven Byggmodul.

It makes me proud, inspired and pleased to hear such stories. In my view, Jan Arild is a true sustainability hero, and an example of how each of us can help make a difference. If we are to succeed in reaching the climate and environmental targets, we must look after our things and consume less. This applies to all of our 3,300 workers. We are all pieces in a bigger puzzle, and what each and every one of us does matters.

Just like Jan Arild, Moelven is also part of a larger value chain, and to achieve the goals we have set both as a company and as a society, we have to work together.

For many people working in the corporate sustainability area, the EU's new CSRD reporting directive has been high on

the agenda in the past year. The new regulations, which apply to Moelven from the 2025 reporting year, will require more companies to prepare sustainability reports, which must be in a standardised form and certified by an independent third party. The reporting will not in itself contribute to the work of achieving the goals, but it will likely make more people more conscious of sustainability within their business and it will be easier to focus their efforts on the areas that matter most.

Reducing emissions from transport is an example of this. The transport sector is the largest source of greenhouse gas emissions in Norway and Sweden, and accounts for around 30 per cent of domestic greenhouse gas emissions. This is one of the major drivers behind CO2 emissions for Moelven as well. We are therefore pleased to be part of the Green Ground Transportation Programme, which aims to halve greenhouse gas emissions from transport by 2030. Through our membership in Skogsindustrierna in Sweden, we also support their goal

of fossil-free transport by 2040. To achieve these objectives, manufacturers, carriers and customers alike need to work together to find solutions that are viable over time – both from an environmental and climate perspective and from an economic perspective.

Product development is another example where collaboration can help find new and more sustainable solutions. In the autumn of 2023, Moelven Wood AB arranged a 'hackathon' together with the Swedish business cluster Paper Province. The aim was to develop more environmentally friendly packaging for our interior products. Through the competition, we gained a good overview of the available possibilities and we are now continuing work with these. Perhaps this is the beginning of the future of packaging?

I am however certain that none of us can solve the climate challenges alone, but together we are strong enough to take it to task.





### 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 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

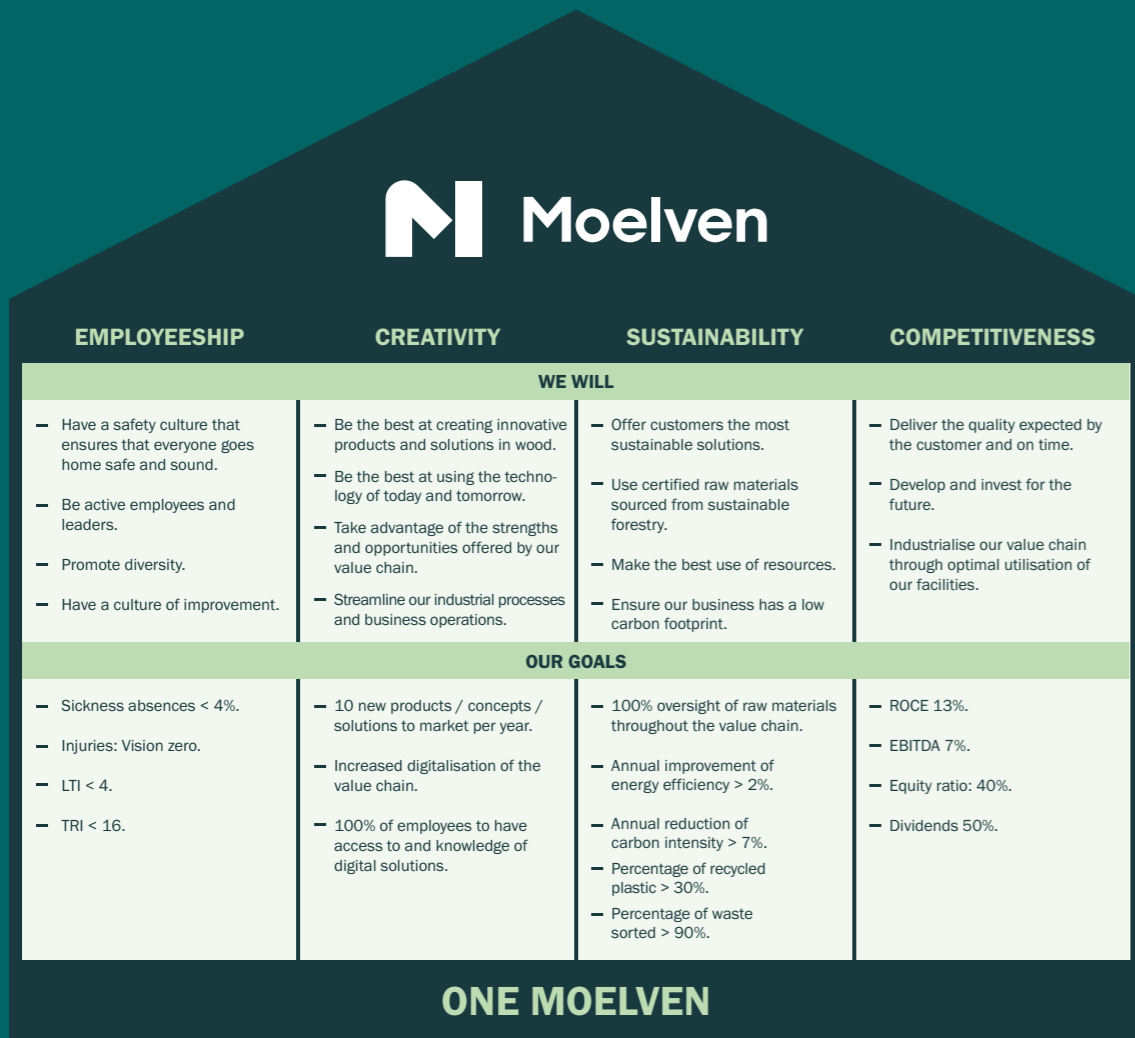
You make the difference! Moelven is the result of all the smaller and larger choices we make every day. Together we create a workplace based on trust, well-being and a sense of belonging. Since 1899, Moelven has seen opportunities, developed new ideas and built better climate-smart solutions for the 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 off with respect and care. We all take responsibility 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 summarises our corporate strategy and is a useful tool for clarifying what we need to do and how we prioritise in order 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 world needs construction materials and good methods for capturing CO<sub>2</sub> from the atmosphere. At Moelven, we are convinced that wood materials will play an important role as building materials in the low carbon society of the future, but this means that we need to do our part of the job in the right way. It involves safeguarding both the climate benefits and the other positive characteristics of wood throughout the value chain. With as low an environmental and climate impact as possible, we need to make products that have a long life as components of permanent buildings and structures, thereby continuing to store CO<sub>2</sub> while the newly planted forest grows and absorbs more CO<sub>2</sub> from the atmosphere.

The forest and the raw materials found in the forest are at the heart of the vast majority of Moelven's activities. Saw timber from spruce and pine is processed and transformed into a variety of products. This includes everything from bioenergy fuels, chip products and sawn timber for the wood processing

industry to finished construction materials, load-bearing structures, complete buildings and building interiors. In order to be able to claim that this is creating products and solutions that the world needs, we have made sustainability one of the pillars of our strategy.

We have divided our sustainability efforts into four focus areas, which also constitute the main chapters of this report:

- Climate action throughout the value chain
- Safeguarding natural resources
- Focus on people
- Local values

These main areas are sub-divided into topics that have been selected because they are areas that have great significance for both the outside world and Moelven. The following sections





Project manager at Moelven Limtre AS, Tore Olsen Hagelund, and product manager at Moelven Wood Project AS, Winfried Schaal.

provide a summary of how we work with these topics 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. Industrial developments are going the direction of increased automation and mechanical processing of products with the use of constantly more advanced technology. At Moelven we believe that the greatest potential for increased value creation is in optimising the interaction between man and machine. To achieve this, we rely on the commitment, competence and diversity of our employees. They will control and operate the technology in a workplace where the risk of injury has been eliminated. It should be safe to work at Moelven.

**Social sustainability**

It is not only the people who work at Moelven who are affected by the business. Through the procurement of goods and services, people working in other businesses are affected both upstream and downstream in the value chain. We therefore have a responsibility to choose partners that respect and safeguard fundamental human and labour rights. Moelven's work with this is described in the Group's reporting in accordance with the Norwegian Transparency Act: [www.moelven.no/apenhetsloven](http://www.moelven.no/apenhetsloven).

**Transport**

Transport is the largest single source of CO<sub>2</sub> emissions from Moelven's operations. This applies to both internal transport within our own industrial operations and transport upstream and downstream in the value chain. There is no doubt that the transport industry needs to be decarbonised in order for society to achieve the goals of reductions in CO<sub>2</sub> emissions, but this will take time. Moelven's approach is to commit the most resources to measures that yield results in the short term, while also testing fossil-free alternatives on a smaller scale.

**Energy consumption**

Moelven is an energy-intensive business. Of an annual energy requirement of around 1 TWh, around 75 per cent is self-produced bioenergy, while the rest is purchased electricity. Not only does this represent a large cost, it is also a source of CO<sub>2</sub> emissions. In a world with a deficit in fossil-free and renewable energy sources, we also have a responsibility not to waste energy. We are therefore constantly working on ways to rationalise and reduce our own energy consumption.

**Bioenergy**

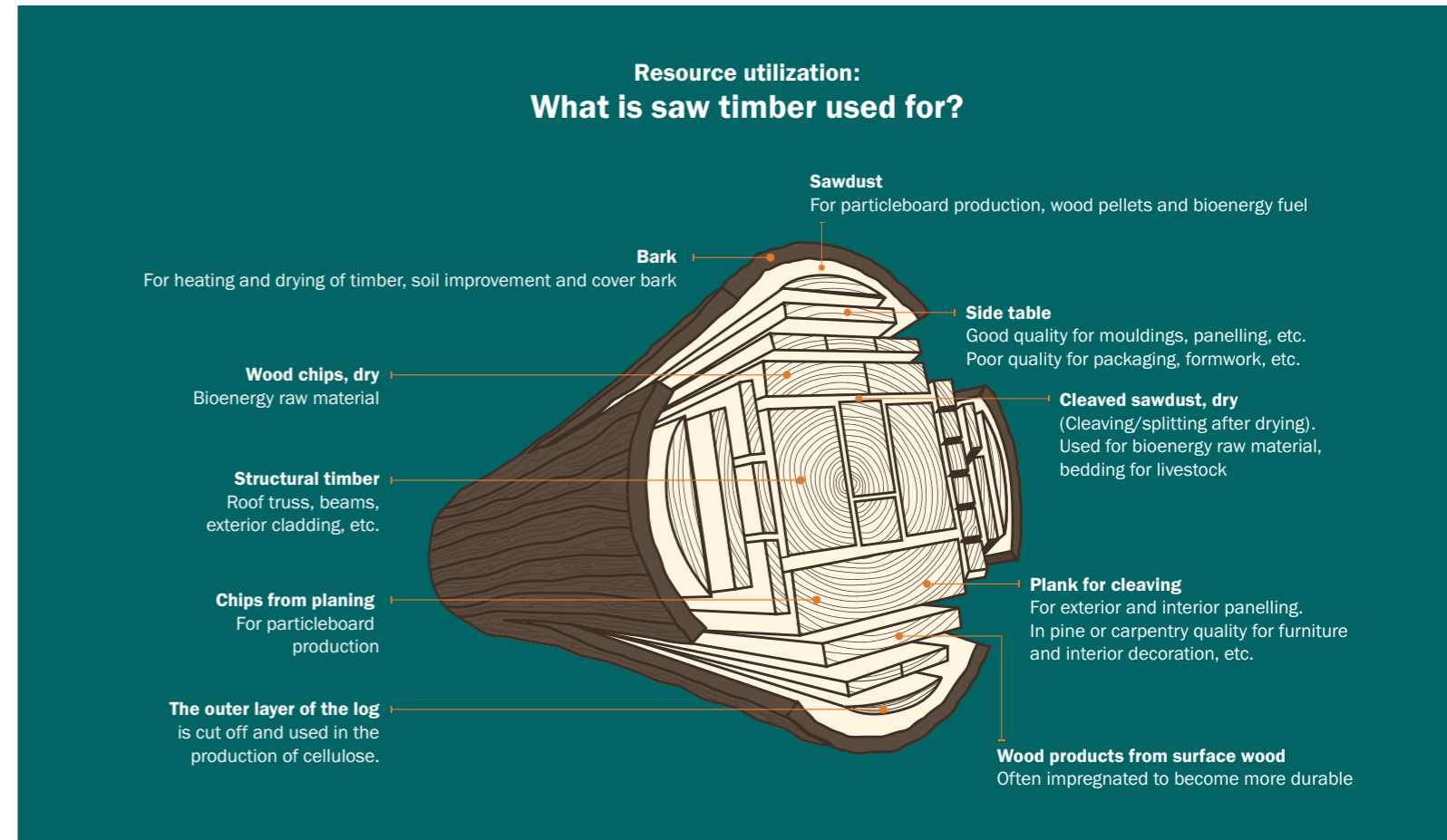
Moelven has set itself a target of providing at least 95 per cent of the thermal energy needed for the heating of premises and drying of timber from self-produced bioenergy. When bioenergy replaces fossil energy sources, this helps reduce greenhouse gas emissions. This means that it is also important 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.

**Resource utilization**

Moelven is a resource-intensive industrial company. The timber processing part of the Group consumes around 4.3 million m<sup>3</sup> of saw timber as raw material in its own production each year. In order to claim that our products are beneficial in a climate perspective, it is crucial that we optimise our production so that nothing is wasted. In this way, we help ensure that natural resources are not wasted through unnecessary deforestation. Thus both environmental and economic value in the raw material is safeguarded in the best possible manner.

**Certification and product documentation**

This is important both as quality assurance of our own routines and when it comes to providing our customers with enough information to make sustainable product and material choices. We have an explicit goal that our customers should be confident that products from Moelven come from a value chain that takes the climate, environment, biodiversity and human and labour rights into account in accordance with recognised principles.



We also emphasise that the climate and environmental footprint of our business is documented through product declarations and sustainability reporting, both as information to external stakeholders and as a basis for internal improvement work.

A complete list of certifications and approvals can be found at [www.moelven.com/certificates](http://www.moelven.com/certificates).

**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®<sup>1</sup> 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. Moelven also places great emphasis on playing an active role in the development of certification standards, based on our knowledge of Scandinavian forestry.

**Supply chain traceability**

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**

<sup>1</sup> See license codes for Moelven's multisite certificates from PEFC and FSC® on page 110.



**MOELVEN SUSTAINABILITY POLICY**

Moelven's sustainability work is prioritised by its significance in relation to the outside world and us at Moelven, with emphasis also having been placed on where we can make the greatest difference.

Read more about Moelven's sustainability work here.



**CERTIFICATIONS AND APPROVALS**

Certifications are important for both Moelven and our customers.

Please find a comprehensive overview of certifications and approvals here.



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**

It is up to the client to decide whether the finished building should be certified, and if so, which certification scheme to use. Demand for certified buildings is on the increase. Those who are to use the building often desire certification, and the financing options are often better for a certified building. To provide value to our customers who want to certify a building where Moelven's products are included, Moelven is working to produce and document products with environmental benefits. This gives customers a good start when the finished building is to be certified. The most common building certification schemes used by Moelven customers are BREEAM and the Nordic Swan Ecolabel.

**Waste**

Moelven's main priority is that the business generates as little waste as possible. However, waste is unavoidable in industry or on construction sites. By sorting as much as possible and by facilitating reuse and recycling, Moelven helps create a more sustainable and circular material cycle. Our goal is to have a sorting ratio exceeding 90 per cent for the Group and individual entities over time.

**Plastic consumption**

Moelven uses significant amounts 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. Although plastic has many good qualities when used as a packaging material, it also represents an environmental challenge when it goes astray in nature as waste or microplastics. In addition, the combustion of plastic contributes to CO<sub>2</sub> emissions. Moelven has a target to reduce plastic consumption and make this more sustainable. We are working both to reduce the use of plastic as much as possible, and to ensure that at least 30 per cent of the total amount of plastic is recycled plastic.

**Transparency**

Sustainability reporting is increasingly emphasised as a basis for decision-making in both public procurement and the private sector. Standardised, transparent and publicly available reporting is essential for evaluating individual actors' sustainability efforts. It also provides the opportunity to identify areas where different actors can collaborate to jointly make improvements. For Moelven, open and honest communication with our stakeholders is a key area and we expect the same from our partners. This provides a better basis for collaboration to improve the overall environmental and climate footprint throughout the value chain, and gives us a significantly greater opportunity to make a difference together.

**Our sustainability heroes**

The Sustainability Hero award has been presented three times in 2023. It is the Sustainability Forum that presents the award based on submitted nominations. These are our three most recent sustainability heroes.



**Sofia Eriksson**  
Quality and environmental manager,  
Moelven Byggmodul AB



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



**The project group behind "Tjejkvällen" (Girls' Night Out)**  
Ida Sandin, Anna Ljungberg, Felicia Hedberg, Charlotte Holmberg and Lovisa Birgersson from Moelven Byggmodul AB in Torsby, Helen Henriksson, Matilda Olsson, Peter Broberg from Moelven Notnäs Ransby AB, Maria Henriksson from Moelven Wood Interiör AB and Jeanette Löfberg and Helena Wannstedt from Moelven Industrier AB. Pictured: Peter Broberg



**Energy**

The world has a deficit of fossil-free energy sources. Moelven is an energy-intensive business. Although ¾ of our energy consumption is self-produced bioenergy, we must continuously work to find ways to improve efficiency and reduce energy consumption.



**Transport**

Transport of goods is Moelven's biggest single cause of climate emissions, and therefore an important focus area. Increased use of modular vehicle combinations, boat and train, efficient logistics, modern low emission vehicles, as well as vehicles with fossil-free powertrains are important measures.



**HES**

The people who work in Moelven are our most important resource. No one should get sick or injured from working in Moelven.



**Employee participation**

We shall have leaders who create prerequisites for well-being, innovation and development. We shall have employees who take own responsibility, develop their competence and contribute with commitment.



**Climate action throughout the value chain**

**Ambition**  
Our activities, products, and value chain will make a difference in our climate action efforts



**Focus on people**

**Ambition**  
We shall be an attractive and safe workplace



**Safeguarding natural resources**

**Ambition**  
We will use renewable and sustainably managed resources, and utilise them in full



**Local values**

**Ambition**  
We will contribute to local value creation



We are a reliable partner



**Certified products**

The basis for being able to build climate-aware with wood starts with a responsible and sustainable forestry. Raw material certifications and chain of custody certifications in the value chain are therefore a very important focus area for Moelven.



**A responsible value chain**

Moelven's value platform involves a responsibility for both people and the environment. Moelven will work to secure responsible business practices by safeguarding human and labour rights, society and the environment, both within our own business and together with our partners in the value chain.



# The big picture

Unfortunately, 2023 was yet another year of negative climate records. In both Scandinavia and Europe, extreme weather, drought and flooding showed how vulnerable the world is to climate change, and at the same time how important it is to put in place robust sustainable solutions.

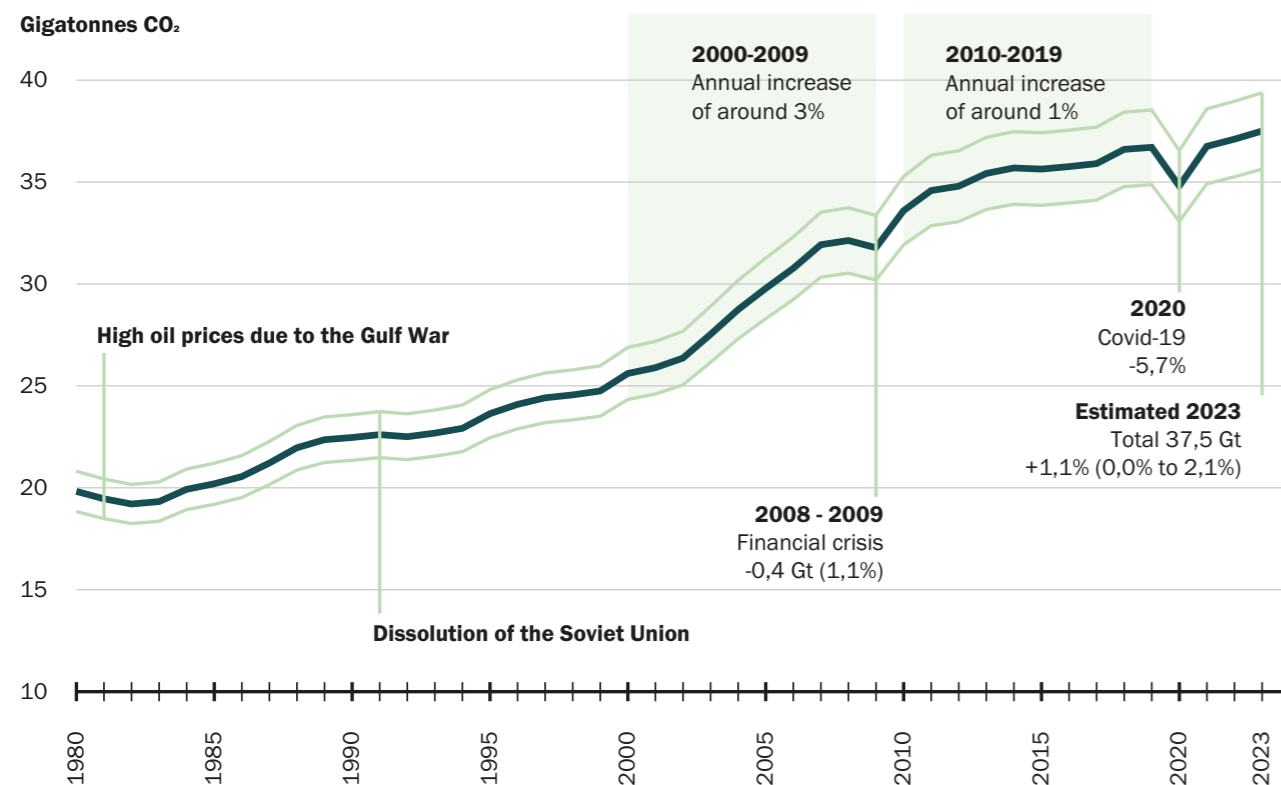
Global CO<sub>2</sub> emissions from fossil sources increased yet again in 2023. The estimates for 2023 are an increase of approximately 1 per cent from the previous year, i.e. at approximately the same rate as in the period from 2010 to 2019.

In its latest climate report, the UN's Intergovernmental Panel on Climate Change said<sup>1</sup> the 1.5-degree target in the Paris Agreement could be exceeded between 2030 and 2035. At the end of 2023/24, several sources show that the average temperature has already risen by about 1.2 degrees since before pre-industrial times. Depending on how well the global community succeeds in reducing greenhouse gas emissions, the temperature increase will be reversed to some extent in certain scenarios so that the 1.5 degree increase target will still be met in the slightly longer term. If the goals set for 2030 are met, scientists believe that we are heading for a temperature increase of approximately 2.4 degrees. However, the international community is behind on the 2030 targets. With the measures implemented up to 2020, we are heading towards 2.2-3.5 degrees of warming by the year 2100. Estimates that

include more recent measures result in a slightly better assessment, with a median warming of 2.7 degrees.

In addition to goals of cuts in greenhouse gas emissions, there are a number of international agreements that address the other sustainability goals in the Paris Agreement. This includes the protection and restoration of land, the protection of the sea, bans on plastics, waste management, circular economy and the fight against poverty.

It is clear that if all these objectives are to be achieved, society will have to change significantly. For companies like Moelven, it is not only the regulatory requirements, but also the demands set down by stakeholder groups such as customers, suppliers, employees, the local community, etc. that will also have a major impact on the direction of future operations and strategic development. Many framework conditions will undoubtedly change in a direction that makes operations more demanding and costly. 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 great 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 a minimal climate footprint so that we, our products and our value chain combined



The graph illustrates global CO<sub>2</sub> emissions from fossil sources. Thin lines indicate that there is an uncertainty factor of 5 per cent 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

<sup>1</sup> AR6 Synthesis Report

contribute to making a difference in the work to stop climate change.

## Statutory provisions and reporting requirements as drivers for a shift in pace

Launched by the European Commission at the end of 2019, the European Green Deal is a strategy for sustainable growth that will make the EU climate neutral by 2050. Moelven has all of its production activities in Sweden and Norway, which in their capacities as a EU member and EEA country respectively, are strongly affected by developments within the EU. Europe is also an important export market for Moelven.

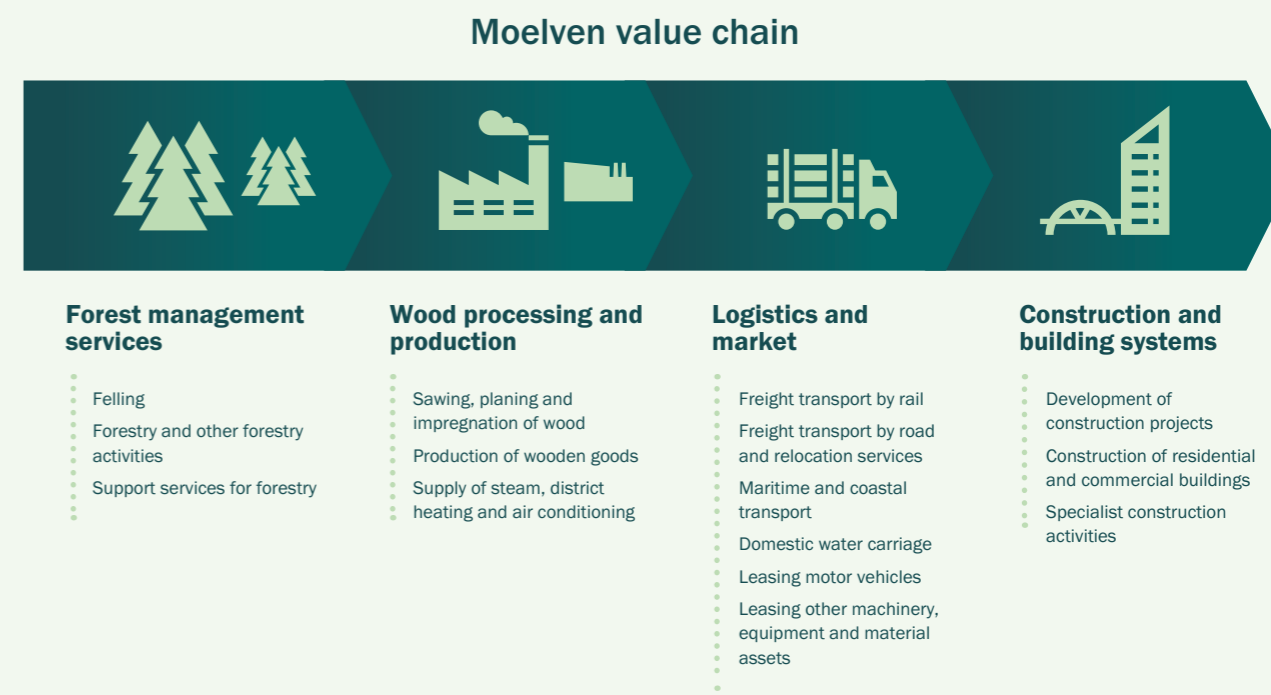
The main points of the European Green Deal include topics such as:

- Climate neutrality
- Green economy
- Protection of Nature and Ecosystems
- Clean energy
- Sustainable transport
- Circular economy
- Agriculture and Food Production
- Climate Policy and Justice

In order to achieve the objectives of the strategy, a number of laws and regulations are being drawn up to drive the changes in the desired direction. This also includes new regulations for reporting sustainability information.

The EU's new reporting directive, the Corporate Sustainability Reporting Directive (CSRD), 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. Initially, the requirements are aimed at large corporations and financial players, but will gradually come into effect for smaller operations as well. Smaller organisations are also indirectly affected through requirements from e.g. financial stakeholders and customers that are covered by the regulations. In accordance with the CSRD and the regulations as incorporated into Norwegian legislation, Moelven is obliged to report in accordance with the European Sustainability Reporting Standards (ESRS) as of 2025 reporting. Planning for this was started in 2023 and will continue in 2024. With the CSRD and ESRS, the direction and communication related to sustainability will become much clearer. This also makes it easier to work together to achieve the goals and implement the necessary changes faster.

Taxonomy is also an important tool within the European Green Deal. 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 order to for an activity to be classified



→ These items represent financial activities in the Moelven value chain.

as sustainable, the activity must meet the following criteria:

**1. Contributing significantly to at least one of six environmental objectives:**

- a. Limiting climate change
- b. Climate change adaptation
- c. The sustainable use and protection of water and marine resources
- d. The transition to a circular economy
- e. Pollution prevention and control
- f. The protection and restoration of biodiversity and ecosystems

**2. Not significantly impeding the other environmental objectives**

**3. Fulfilling the minimum conditions concerning social rights**

Based on the existing assessment criteria at the end of 2023, Moelven has conducted a survey to identify which economic activities within the Group's value chain that would be covered by the taxonomy. No decision has been made as to the extent to which the criteria for classifying the activities as green activities are satisfied. For Moelven, the introduction of the reporting requirements in accordance with the taxonomy directive follows the same timeline as the introduction of the CSRD, i.e. full reporting must take place from the spring of 2026 for the 2025 reporting year.

The figure below shows the result of the mapping carried out for 2023.

**Moelven's goals and priorities**

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.

It is the materiality analysis that forms the basis for the priorities in sustainability work.

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

The most important aspect of our sustainability strategy is therefore to work to take care of the wood's positive properties and refine the raw material with the smallest possible climate and environmental footprint, and to work to ensure that the highest possible proportion of our finished products become part of permanent buildings and structures. That way, the tree can continue to bind carbon for a long time after it has been felled in the forest, and at the same time, the new forest that was planted after felling grows and absorbs more CO<sub>2</sub> from the atmosphere.

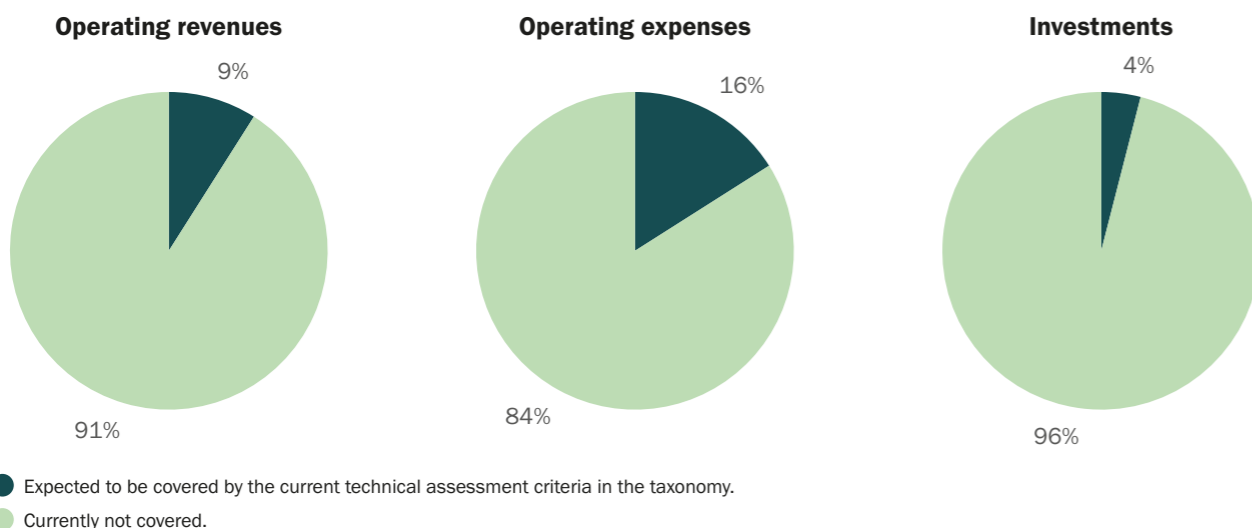
The overall sustainability work in Moelven is divided into four main areas, with sub-topics:

- Climate action throughout the value chain
- Safeguarding natural resources
- Focus on people
- Local values

These main areas constitute the chapters of this report. The sub-topics of each main area provide a description of how Moelven works with the topics. As further information on the significance of each individual topic in accordance with the materiality analysis, each sub-topic is indicated by one of the symbols below.

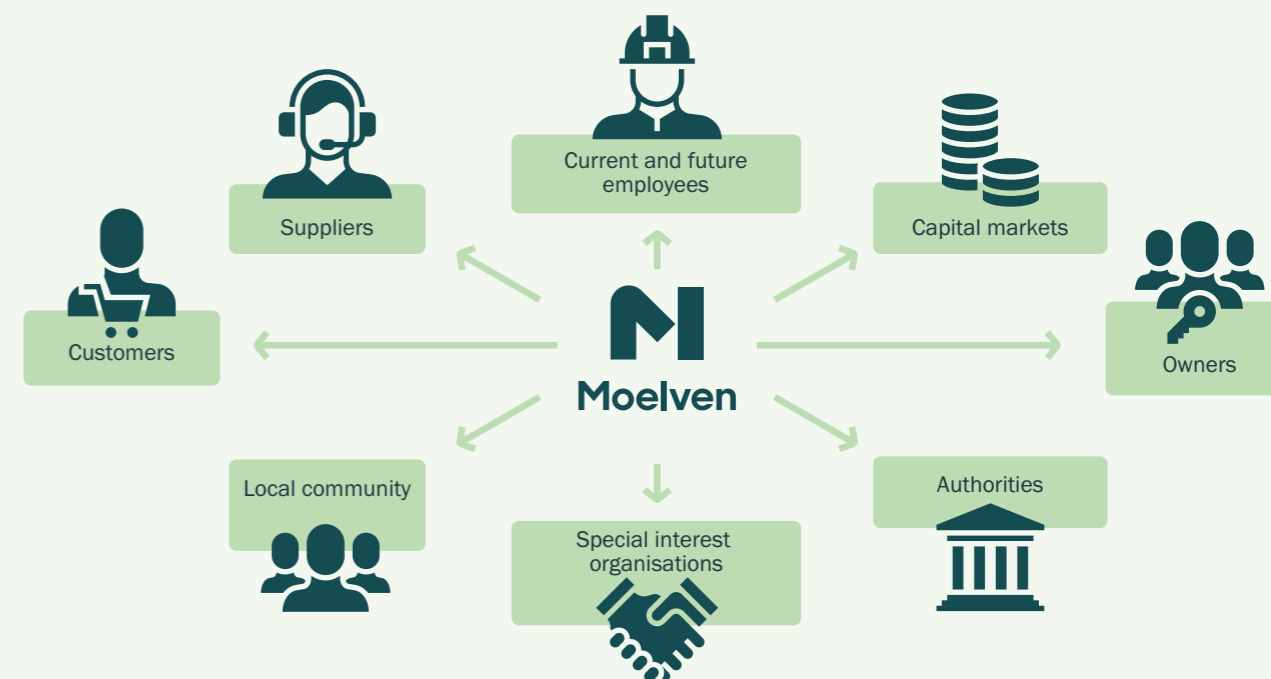


**Mapping of economic activities that may be covered by the taxonomy**

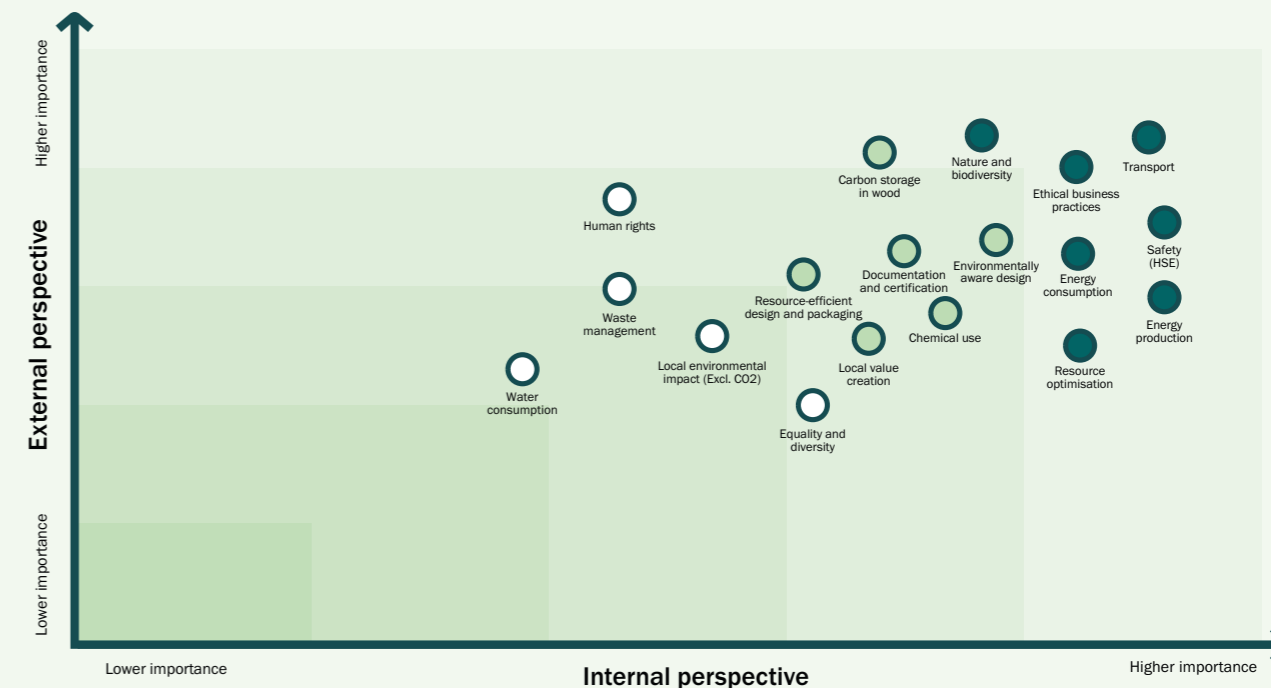


The figure above illustrates the proportion of the Group's operating revenues, operating expenses and investments that are covered by the current assessment criteria. The largest individual business activities covered by the taxonomy at Moelven relate to construction and civil engineering and forest 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.

**Stakeholder analysis**



**Materiality analysis**





# Climate accounts

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

The climate accounts include the emission categories that are significant and where there is sufficient data material for calculating the emissions. Within scope 3, there are emission categories that are not yet included in the climate accounts due to lack of access to data. This includes investment activity, which is expected to be a significant category. Moelven aims to

be able to report complete scope 3 based on specific data rather than generic, and is working to establish reporting systems that enable this.

Biogenic carbon in self-produced products is not included in scope 3 of the climate accounts, but shown in a separate table on page 36.

(Tonnes of CO <sub>2</sub> equivalents)	Change%	2023	2022	2021
<b>Scope 1 (Emissions in the company)</b>	<b>-17,8%</b>	<b>13,442</b>	<b>16,358</b>	<b>15,804</b>
Fuel oil		657	952	880
Biofuel oil		1	1	1
Diesel		12,061	13,499	13,888
Petrol		16	86	16
LPG (gas)		707	1,820	1,014
<b>Direct biobased emissions (outside scope)</b>	<b>-5,9%</b>	<b>375,934</b>	<b>399,609</b>	<b>393,406</b>
Bark		229,589	245,561	235,578
Sawdust		19,249	23,599	22,984
Hogged chips		92,845	101,081	109,183
Wood shavings		5,791	5,750	7,572
Cellulose chips		28,052	23,292	17,718
Pellets		407	326	369
Biofuel oil		1	1	1
<b>Scope 2 (Emissions related to electricity consumption)</b>				
Location-based calculation	72.2%	4,239	2,462	2,261
Market-based calculation	21.0%	105,110	86,843	89,989
<i>Total electricity consumption (GWh)</i>		217	226	235
<b>Scope 3 (Emissions outside the company)</b>	<b>2.9%</b>	<b>218,742</b>	<b>212,559</b>	<b>174,777</b>
Input products A1-A3 (Biogenic carbon in purchased timber is not included)		35,948	40,060	43,500
Transport of goods from suppliers		44,018	37,728	28,552
Work-related car transport		1,093	220	146
Waste		306	343	344
Flights		210	166	78
Transport of goods to the customer		137,167	134,042	102,157
<b>Total emissions (scope 1, scope 2 location-based, scope 3)</b>	<b>2,2%</b>	<b>236,422</b>	<b>231,379</b>	<b>192,842</b>
<b>Total emissions (scope 1, scope 2 market-based, scope 3)</b>	<b>6.8%</b>	<b>337,293</b>	<b>315,759</b>	<b>280,570</b>

## 2023 Climate Accounts

Overall, the 2023 climate accounts show an increase in emissions from 2022. Scope 1 shows a reduction in emissions, while scopes 2 and 3 show increased emissions. The reduction in scope 1 is due to the transition to bio-based energy carriers and partly a slightly lower level of activity than in 2022. The increase in scopes 2 and 3 is mainly due to two conditions:

### 1) Increased calculated emissions in scope 2 from electric power

The overall power consumption decreased from 224 GWh to 217 GWh. However, the effect of increased CO<sub>2</sub>e per kWh emissions exceeded the effect of reduced consumption and resulted in an increase in both location-based and market-based emissions overall.

### 2) Increased reporting of indirect emissions in scope 3

The scope of indirect emissions included in the scope 3 reporting was extended. This applies in particular to transport, where the system limits have been changed as described below. Due to lack of historical data, comparison figures for 2022 have not been updated.

## Basis for calculation of direct biobased emissions

The Moelven Group uses approximately 220 GWh of electrical energy annually and approximately 800 GWh of self-produced thermal bioenergy. Electricity is purchased from external suppliers, while bioenergy is mainly produced in own heating plants. The biomass that is combusted in the heating plants is residual raw material such as bark and various chip products from the sawn timber production. In broad terms, it can be said that about 50 per cent of the saw timber becomes sawn timber, while the remaining 50 per cent is various chip products and shrinkage as a result of drying. The bark is not included in the volume when the timber is measured, and comes in as an additional volume. The largest heating plants can be found at units that use saw timber as raw material. Some units produce more bioenergy raw materials than they consume in their own energy production. The excess is then sold to others in need of more bioenergy raw materials than they themselves produce. Customers can be both internal and external. Volume balances are central to maintaining control of efficiency in production and for financial follow-up. However, systems and procedures for

measuring volumes vary between the different units. In order to calculate CO<sub>2</sub> emissions from the bioenergy production, it has been necessary to have some standardised alternative ways of reporting consumption of biomass in the heating plants. All reporting is in the quantity of m<sup>3</sup> uncompacted material (1m<sup>3</sup>). The volume reported from each production company is calculated based on the following main alternatives or a combination of these:

### 3) Companies that purchase bioenergy raw materials

Received invoice indicates quantity. If necessary, the stated amount is converted to loose cubic metres (1m<sup>3</sup>). Consumption in the reporting period is calculated as the difference between net inbound inventory and outbound inventory.

### 4) Companies who themselves produce bioenergy raw materials, with installed measurement systems

The energy production is recorded and calculated back to a theoretical raw material volume based on estimated moisture content and composition of consumed biomass.

### 5) Companies that themselves produce bioenergy raw materials, without installed measuring systems, alt. 1

Total volume of residual raw materials is calculated on the basis of measured recovery factor and experiential factors for volume outcomes of the various types of chip products. The volume is corrected for chip products sold externally. Consumption during the reporting period is calculated as the difference between net inbound and outbound inventory.

### 6) Companies who themselves produce bioenergy raw materials, without installed measurement systems, alt. 2

Amount of consumed biomass is logged. Loading is usually done using a wheel loader, where the capacity per shovel in 1m<sup>3</sup> is known. The composition of bark and various chip products is estimated based on inbound and outbound inventory corrected for volume sold externally.

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 Energimarkedstilsynet (Ei) in Sweden. Location-based emissions from Swedish companies are

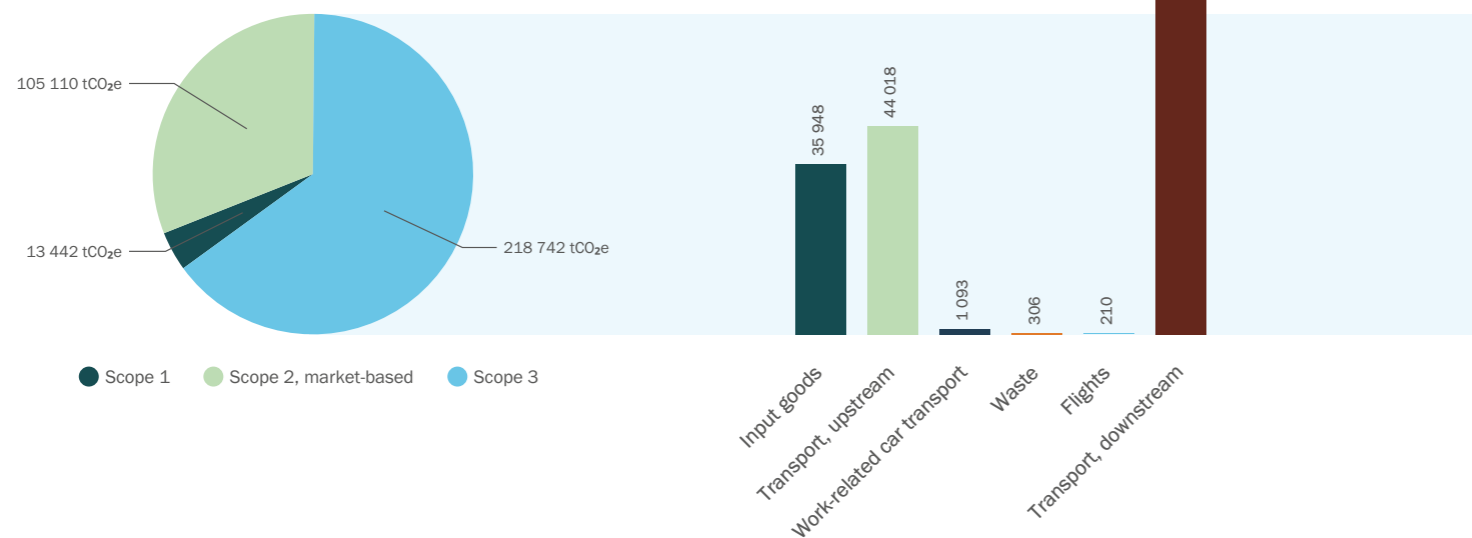
discretionary based on the corresponding Norwegian emission factors and publicly available information in Sweden.

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.



CO<sub>2</sub> SF<sub>6</sub> CH<sub>4</sub> N<sub>2</sub>O HFCs PCFs

## Reporting of emissions in scope 3

### Increased scope of reporting emissions from inputs

In 2023, more inputs have been included in the calculation. An average CO<sub>2</sub> footprint from available EPDs (product phase A1-A3) has been used for the main product groups included. Measurement of the consumed volume or weight of some types of inputs is associated with estimation uncertainty since current reporting systems are not suited for this. Work is being done to establish adequate system support and internal control to put this into place.

### Transport

From 2023, the system demarcation has been changed to include all transport of inputs where CO<sub>2</sub> emissions are also calculated, regardless of whether Moelven is the invoice recipient for the transport. The change means that the estimate uncertainty for this transport is abnormally high in 2023. The same principle is applied for the transport of timber and chip products.

Transport (A4) of inputs besides timber is estimated at the total volume and estimated distance from the producer to the reporting Moelven company.

For timber transport, input transport is determined on the basis of data in the logistics systems of the raw material supply organisation. Transport of goods out to the customer is based on volume and estimated transport distances from the producing Moelven company and customer. The transport is often carried out with several different means of transport (e.g. rail on parts of the route), and the transport distance varies. These variables are taken into account at an overall level, including through communication with the largest suppliers, but a significant estimation uncertainty remains.

### Waste

Estimated CO<sub>2</sub> emissions from waste are included as of 2023. Full and sufficiently detailed information on how the different waste fractions have been processed further by the renovation companies has not been available. Therefore, it is based on the total amount of waste and the conversion factor used for open circuit from DEFRA.

### Significant categories not including

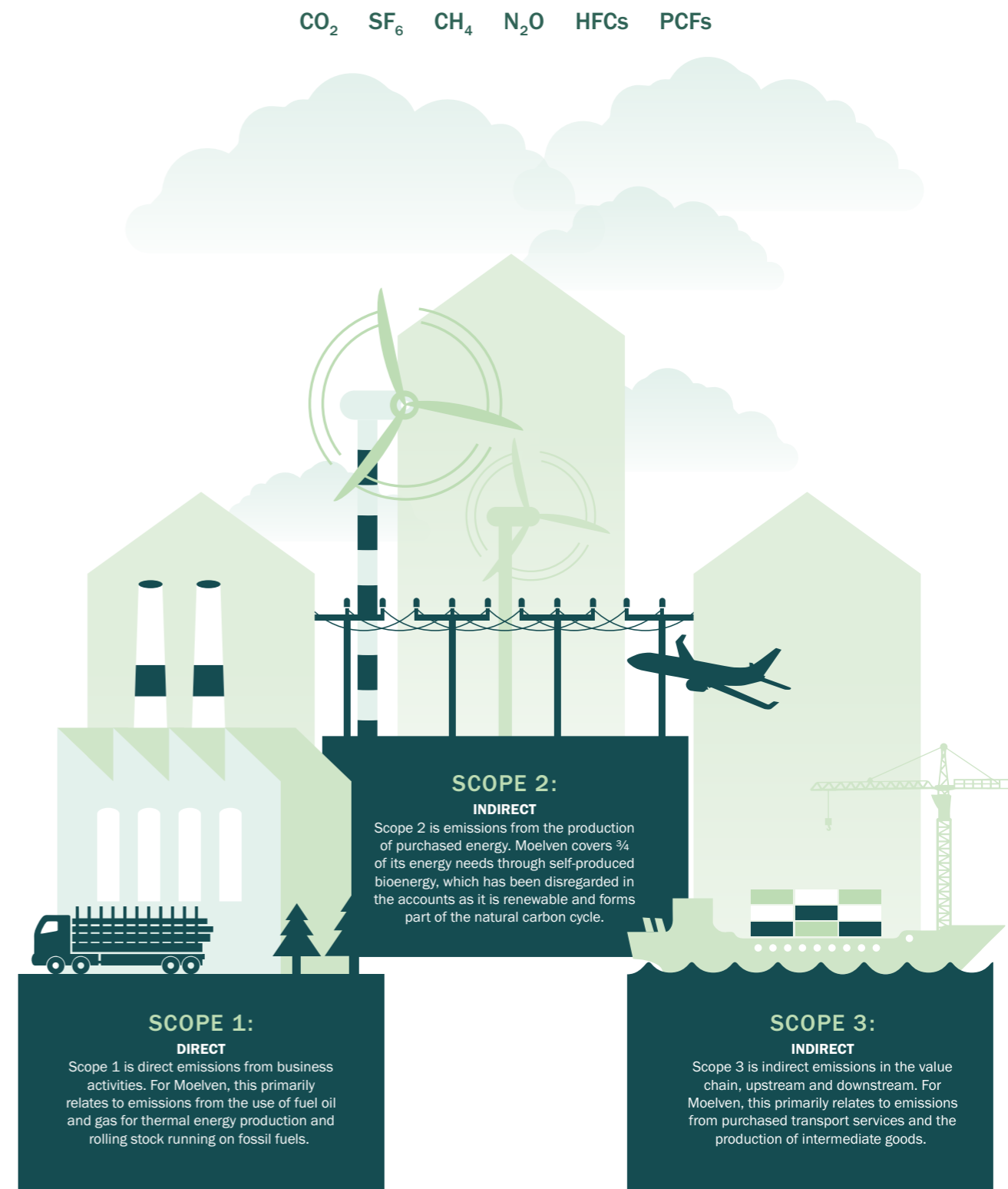
CO<sub>2</sub> footprint from forest activity and biogenic carbon stored in consumed timber are not included. Estimated content of biogenic carbon consumed timber is shown in the table on page 36.

Investments are not included due to lacking data. Total investments in 2023 of NOK 1,085 million are shared between NOK 438 million in buildings, NOK 636 million in machinery and plants and NOK 11 million in movable assets. For further information, refer to note 8 of the Group's annual accounts for 2023.

### Recalculation of comparable figures from 2022

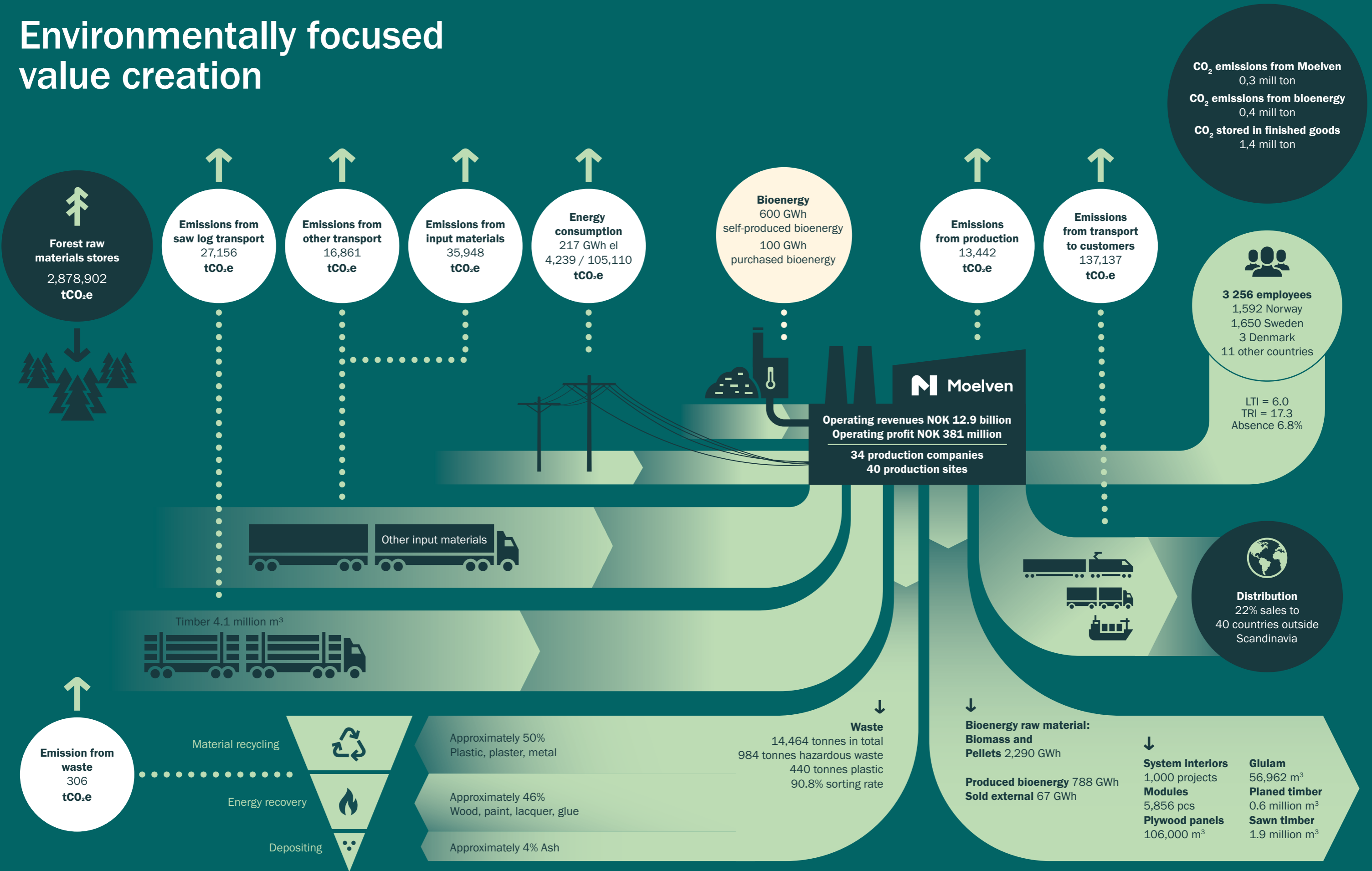
Comparison figures for 2022 have been recalculated where data is available. This includes:

- Transport of timber and chip products (extended system delimitation).
- CO<sub>2</sub> footprint from waste.










# Environmentally focused value creation





# Focus areas, results and objectives

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

Four priority areas	Important topics	Results	Objectives and remarks			
			2023	2022	2021	
 <p><b>Climate action throughout the value chain</b> Our activities, products and value chain will make a difference in our climate action efforts</p>	<ol style="list-style-type: none"> <li>Energy consumption in own production</li> <li>Goods transport</li> <li>Production of bioenergy</li> <li>Climate benefits from the forest</li> <li>Climate-aware design</li> </ol>	Electricity consumption (GWh)	217	226	235	2% annual reduction in energy consumption per unit produced.
		Self-produced Thermal Bioenergy (GWh)	788	836	835	95% of needs for thermal energy covered by self-produced bioenergy.
		Carbon footprint (tCO <sub>2</sub> e) incl. location based Scope 2	236,424	231,379	192,842	7% annual reduction in carbon intensity.
		Carbon footprint (tCO <sub>2</sub> e) incl. market-based Scope 2	337,295	315,759	280,570	
		Carbon stored in finished goods (tCO <sub>2</sub> )	1,421,181	1,510,706	1,484,288	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. Requirement of EURO 6 from 2022. Increased use of modular vehicle combinations, sea and rail.
		Share of transport to customers by modular vehicle combinations in Norway	13.8%	6.5%		
		Internal transport, lorries EURO-6	62	59	72	
		Internal transport, lorries EURO-5	173	179	180	
		Internal transportation, electric forklifts	171	166	185	
 <p><b>Safeguarding natural resources</b> We will use renewable and sustainably managed resources, and utilise them in full</p>	<ol style="list-style-type: none"> <li>Certified and traceable materials</li> <li>Resource optimisation</li> <li>Resource-efficient design and packaging</li> <li>Waste management</li> <li>Water consumption</li> </ol>	Controlled raw material	100%	100%	100%	Certified raw materials from sustainable forestry. 100 percent controlled raw materials throughout the value chain.
		Recycled plastic (tonnes)	440	418	581	Plastic is included as a separate fraction in waste sorting.
		Plastic consumed (tonnes)	1,574	1,807	2,049	Share of recycled plastic > 30%. Collaborate with customers and suppliers on concepts to minimise the need for packaging. Development and testing of alternative packaging materials.
		Share of recycled plastic	33%	35%		
		Sorting ratio	90.8%	92.9%	92.6%	90% sorting rate for the Group and all units over time.
  <p><b>People in focus</b> We will be an attractive and safe workplace</p>	<ol style="list-style-type: none"> <li>HSE</li> <li>Engaged and competent employees</li> <li>Safe chemical use</li> </ol>	LTI	6.0	8.0	6.9	2024: LTI<4 2025: LTI rate <3
		LTI2	17.3	19.6	21.2	2024: LTI2<16 2025: LTI2 rate <14
		Rate of absence due to injury	111	113	185	F-value = Number of work injury-related absence days per million hours worked
		Risk reports per employee	1.3	1.3	2.2	> 1.2 per employee
		Absence due to illness	6.8%	6.7%	5.6%	< 4.0%.
		Employees	3,256	3,332	3,312	
 <p><b>Local values</b> We will contribute to local value creation</p>	<ol style="list-style-type: none"> <li>Creating economic value in local communities</li> <li>The local environment</li> </ol>	Total tax contributions in Norway and Sweden (MNOK)	1 031	1 553	1 450	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.
		Value creation (MNOK)	4 889	6 183	7 308	
		Violation of the Pollution Control Act or equivalent	Ingen	Ingen	Ingen	Moelven shall not be responsible for any violation of pollution control legislation or equivalent. Moelven shall continuously work to improve its environmental footprint in the local community
		Social sustainability				Moelven will work to ensure responsible business practices and transparency related to human and employee rights, society and the environment throughout the value chain.





The storm Gudrun struck Sweden on January 8 to 9, 2005. Around 75 million m<sup>3</sup> of forest was felled by the storm, which had consequences for both forestry and market balances in the timber and sawn timber markets. The photo is from the former Byholm air base, which was used to store up to 1 million m<sup>3</sup> of timber. Photo: Thomas Adolfséns



## Climate risk

The climate and environmental crisis is increasingly affecting the framework conditions for business. This can be due to extreme weather, changes in access to raw materials, changed product requirements, etc. 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 parties that fail to take part in the transition. At the same time, great opportunities are arising for those that contribute to the green transition.

### 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 approves 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.

The corporate-level sustainability work is organised as a staff/support function for the group management, organised directly under the CEO. A separate sustainability steering group has been established, consisting of the CEO, division heads, head of the forest area, the chief communications officer and chief sustainability officer. In addition group- and/or division-wide functions for control and follow-up have been established where this is appropriate. Examples include follow-up of the raw material and traceability certification schemes PEFC and FSC®, energy follow-up, HSE and a dedicated sustainability forum.

There are climate related topics that are closely integrated in the day-to-day operational activities. This applies in particular to product certifications, operating 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

Moelven's risk policy aims to ensure systematic and good work in managing the Group's key risks and opportunities. Sustainability and climate risk fall under this.

Moelven has taken inspiration from the TCFD reporting recommendations in its analysis of climate risk and opportunities. In the further work, both the reporting requirements arising from the Corporate Sustainability Reporting Directive (CSRD) as well as the new reporting recommendations under TNFD (Taskforce on Nature Related Financial Disclosures) will also play a significant role. Moelven as a group will, together with several of the Group's companies, independently become liable for reporting under the CSRD from the 2025 reporting year, with the first report due in the spring of 2026. Moelven will prepare a joint report for the Group that will cover the reporting obligations for all group companies.

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. 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. Furthermore, raw material access may be impacted by extreme weather harming standing forests, which in turn could have an impact on quality, price levels and access to timber. Harvesting can be affected both by the fact that heavy rain or wet winters result in poor access to the forest, or that drought causes forestry operations to be curtailed due to the risk of forest fires. Both have affected Moelven in the past and it is assumed that the risk level will increase in line with climate changes. 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 industrial plants 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. There are high expectations for forestry and the bioeconomy to play a role in 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 for the protection, sustainable management and harvesting of forests will have consequences for Moelven's access to raw materials and operations. External stakeholders' view of wood as renewable resource and sustainable construction material will impact market demand.

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 over a long period developed a comprehensive logistics network to handle this, both by road, sea and rail. New regulatory requirements may 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 220 GWh of electrical power annually. 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 sustainable construction materials, but this may change due to technology developments in other sectors.

Moelven is actively working to take into account identified environmental and climate-related risks in its strategy work. The most important conditions are summarised in the table on the next page.



## Climate-related risk areas

#	Risk	Risk type	Risk description	Risk level	Ability to impact	Time horizon	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/Long (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.g. are limited to a geographical area will impact competitiveness.	High	Medium	Short/Long (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 (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 (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/Medium (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/Long (0-30 years)	Purchasing and hedging strategy. Work for continuous improvement of electricity intensity in the business.
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/Medium (0-10 years)	Build expertise on and exploit alternative energy sources. Conversion plans for transition to fossil-free transports.
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 (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 (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 (5-10 years)	Contribute to research and social enlightenment, active participation in industry and stakeholder organisations.
K	New regulations for forest management and wood as a resource	Statutes and regulations	New requirements for the protection and restoration of forest areas, requirements for felling methods etc. affect the raw material market both with regard to volume and cost level.	Medium	Medium	Short/Medium (0-10 years)	Centralized and competent purchasing organization with a solid market position and presence in a large geographical area.



## Climate-related areas of opportunity

### Identified opportunities

The climate changes and the green shift also entail 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	Type of opportunity	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. This applies to both thermal energy 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 for climate-friendly buildings. Increased demand for raw materials that replace fossil fuels (e.g. fuel, plastics, etc.). Forest fires and pest attacks disrupt the market balance and lead to increased demand in some regions, compensating for reduced access to goods 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.



# Climate action throughout the value chain

## AMBITION

Our activities, products and value chain will make a difference in our climate action efforts.



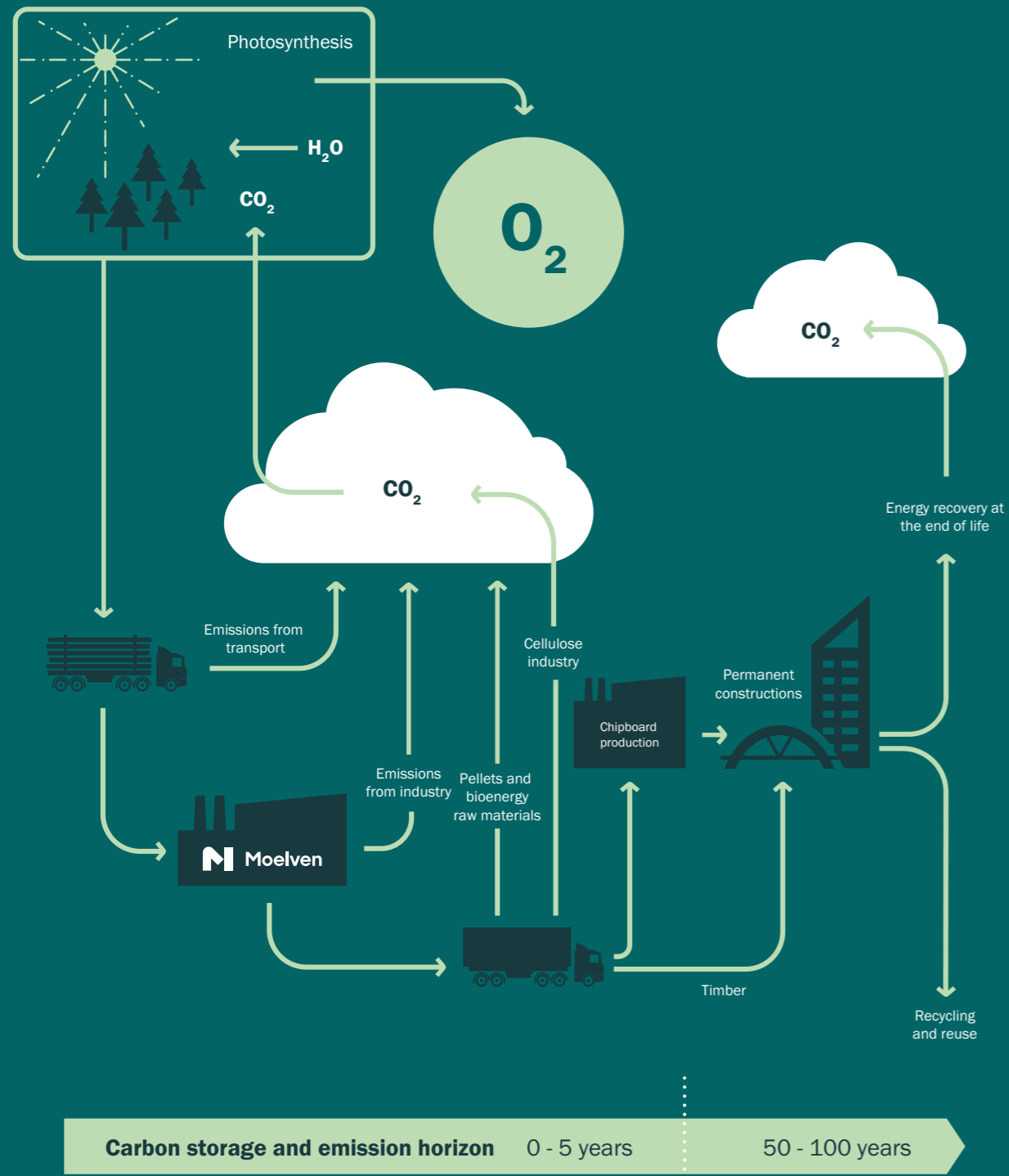
On its 1,500 square meters, Kronoteket in Karlstad houses everything from a library to a DJ corner. Moelven Töreboda AB has delivered the carrier system in glulam. Photo: Sören Håkanlind





PRIORITY AREA

# Climate action throughout the value chain



Elgiganten's new warehouse and logistics facility in Jönköping will be one of the largest in the Nordic region. The load bearing structure of the 86,000 square meter building consists entirely of glulam from Moelven Töreboda AB and Moelven Limtre AS. A total of 6,300 m<sup>3</sup> of glulam was supplied by Moelven. The glulam binds biogenic carbon corresponding to approximately 4,400 tCO<sub>2</sub>e. By comparison, the UN has calculated that the average carbon footprint per capita in Norway and Sweden in 2020 was approximately ca. 6.7 tCO<sub>2</sub>e and 3.2 tCO<sub>2</sub>e respectively.

# Carbon storage and bioenergy

## Where and why is it important?

A large proportion of Moelven's products and materials are based on timber as 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.

Responsible and sustainable forestry not only provides access to a renewable and natural raw material that stores CO<sub>2</sub>. It also contributes to safeguarding environmental values and increasing forest productivity and the ability to absorb CO<sub>2</sub>. Along with the planting of new forests, this ensures that the balance between annual harvesting and the growth of new forests is maintained.

By optimising the utilisation of raw materials and ensuring that the largest possible proportion of timber is processed into products that can be used in permanent buildings, Moelven contributes to ensuring that the carbon storage that starts with photosynthesis in the forest continues for a long time after the tree has been felled.

## Policy and approach

Moelven will work to certify raw materials from sustainable forestry and use 100 percent controlled raw materials throughout the value chain.

In Sweden, Moelven Skog AB is responsible for the timber purchases, which take place directly from the forest owner. Moelven Skog AB is thus one of the companies in the Group with the greatest opportunity to influence forestry operations. This is done in collaboration with the forest owners. The common objective is to optimise the forest's production capacity over time, while maintaining environmental values. This gives Moelven more and better raw material, the forest

owner gets better returns, and the balance between production and growth is maintained.

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. Moelven as a group nevertheless has a social responsibility and a responsibility to its suppliers to ensure that the products Moelven supplies do not come from controversial sources. Moelven therefore places great emphasis on certification and traceability in the supply chain.

## Evaluation of results

Estimates based on the production volume and Moelven's 2023 climate accounts show that the products that Moelven's timber-consuming units produce store about 4 times as much CO<sub>2</sub> as the emissions the business generates. Based on this, one could claim that the overall value chain, from forest to finished sawn timber, therefore contributes to reducing the concentration of CO<sub>2</sub> in the atmosphere, compared with leaving the forest untouched. 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. At the same time, there is uncertainty related to the extent of greenhouse gas emissions from soil after harvesting.

Residual raw materials from both forestry and the timber processing industry represent a valuable resource for bioenergy production. 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. Strategic use of bioenergy based on residual raw materials from the timber processing industry to replace fossil energy sources can be an important instrument to reduce society's climate impact.



- |  |  |   |  |
|--|--|---|--|
| <p><b>IN THE FOREST</b></p> <ul style="list-style-type: none"> <li>• FSC® FM (Forest Management)</li> <li>• PEFC FM (Forest Management)</li> <li>• EUTR (EU Timber Regulation)</li> <li>• UKTR (UK Timber Regulation)</li> </ul> | <p><b>INDUSTRY</b></p> <ul style="list-style-type: none"> <li>• PEFC CoC (Chain of Custody)</li> <li>• FSC® CoC (Chain of Custody)</li> <li>• SBP (Sustainable Biomass Program)</li> </ul> | <p><b>PRODUCTS</b></p> <ul style="list-style-type: none"> <li>• Sunda Hus</li> <li>• CE marking</li> <li>• Environmental declaration (EPD and LCA)</li> <li>• Hea O2 (Indoor air quality)</li> <li>• Declaration of Performance (DOP)</li> <li>• Building Product Declaration (BVD)</li> <li>• Building Material Assessment (BVB)</li> <li>• FSC®</li> <li>• PEFC</li> <li>• ENplus®</li> <li>• BASTA (Chemical content)</li> </ul> | <p><b>FINISHED BUILDINGS</b></p> <ul style="list-style-type: none"> <li>• BREEAM</li> <li>• Nordic swan</li> <li>• Sunda Hus</li> <li>• FDV (Management, operation and maintenance)</li> </ul> |
|--|--|---|--|

→ 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.

Description	2023	2022	2021
Total volume of timber consumed (m <sup>3</sup> )	4,093,800	4,328,153	4,421,822
Total volume of timber consumed – CO <sub>2</sub> stored (tCO <sub>2</sub> e)	2,878,902	3,038,034	3,105,022
Sawn timber and plywood produced (m <sup>3</sup> )	2,028,178	2,054,114	2,116,268
Sawn timber and plywood produced – CO <sub>2</sub> stored (tCO <sub>2</sub> e)	1,421,181	1,510,706	1,484,288
Overall CO <sub>2</sub> emissions (location based) (tCO <sub>2</sub> e)	236,422	231,379	192,842
Overall CO <sub>2</sub> emissions (market-based) (tCO <sub>2</sub> e)	337,293	315,759	280,570
Biomass, including pellets for external bioenergy - industry (fm <sup>3</sup> )	1,035,114	1,109,603	1,117,127
Energy content in sold biomass, including pellets (GWh, lower calorific value)	2,290	2,458	2,311

## CALCULATION BASIS

Source for calculation of CO<sub>2</sub> is EN16449. 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 assumed that a cubic metre saw timber of spruce has a basic density of 363 kg/m<sup>3</sup>, and 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\*0.5\*44/12= 665.5 kg CO<sub>2</sub> / m<sup>3</sup> saw timber
- **Pine:** 418\*0.5\*44/12= 766.3 kg CO<sub>2</sub> / m<sup>3</sup> saw timber

## AMBITIONS

- Moelven will have environmental assessments and certifications in place for its operations and products that meet current legal requirements at all times, along with meeting the requirements of recognised certification schemes within the markets that the Group operates in.
- Moelven shall use certified raw materials from 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). Moelven aims to have as much of its purchased timber as possible certified in accordance with recognised standards relating to sustainable forestry (PEFC and/or FSC®). At a minimum, this shall correspond to needs based on the group's sale of certified finished products.

## RESULTS

- 2.9 million tonnes of CO<sub>2</sub> stored in consumed timber.
- 1.4 million tonnes of CO<sub>2</sub> stored in sawn timber and plywood.
- 0.34 million tonnes of CO<sub>2</sub> emissions for Scope 1-3 according to the climate accounts, corresponding to 24% of CO<sub>2</sub> stored in manufactured finished goods.
- 2.1 TWh energy potential in biomass sold externally.

## MEASURES

- Improve reporting routines to reduce uncertainty and increase accuracy in the source data for calculating greenhouse gas emissions throughout the value chain.
- Increase focus on direct bio-based emissions.
- Study of downstream supply chain to improve knowledge of the products' role in the carbon cycle.





# Moelven Byggmodul AB

## The Green Construction Company

Moelven Byggmodul AB's sustainability work is integrated in the strategic work, with a focus on broad participation in the company

Sustainability work cannot be carried out by just a few people and it is a much broader topic than the environment and climate, which historically have been the most prominent issues. It concerns every one of us, and it is only together that we can make a difference and achieve more. This is Moelven Byggmodul AB's point of departure. The company has established interdisciplinary groups within three focus areas that are working in line with the company's strategy.

The groups are called **Employee Participation, Efficiency** and **The Green Construction Company**, and are based on the social, economic and environmental dimensions as well as the Moelven Group's strategic framework *Employee Participation, Creativity, Competitiveness and Sustainability*.

In 2023, major steps have been taken in the work on goals with a clearer breakdown of goals to obtain direction as to how long-term goals can be achieved. At the same time that the company has clarified its direction, much has happened and more and more people have become involved. In addition, the flow of information has been expanded, including a monthly briefing from the general manager. Sustainability dialogue and cooperation with customers and suppliers also increased throughout the year.

The following describes some of the activities that have taken place at Moelven Byggmodul AB in 2023:

### Employee Participation Focus Group

- Recording of training video to illustrate safe work with machinery and manual equipment.
- Investment in customised and safer wall racks with transport tables to improve the working environment in the factory in Torsby.
- In the course of the year, welfare committees have been started at each location and common activities have been arranged.

- Installation of sanitary pad dispensers around the company. Byggmodul AB and Moelven Notnäs/Ransby jointly organised a girl's night out that was greatly appreciated and attended by 180 women, which was far beyond all expectations.

### The Green Construction Company Focus Group

- Several certification projects have been carried out in accordance with the Nordic Swan Ecolabel or the Sweden Green Building Council.
- Studies have been carried out to improve resource utilisation and identify improvement opportunities. Among other things, it has been possible to establish a recycling stream for insulation at one of our factories.
- Moelven Byggmodul AB's architecture manual has been updated to clarify how the climate and resource footprint can be reduced.
- Tests have been carried out in a factory with wood shavings insulation as part of efforts to reduce the carbon footprint.
- Additional diesel forklifts have been replaced with electricity in accordance with the roadmap for a reduced scope 1 carbon footprint.

### Efficiency Focus Group

- Test of platform for digital document and drawing management in Torsby – available for everyone! A step into Industry 4.0, which also means significantly reduced paper usage and improved quality assurance as digital drawing always ensures the latest version.
- Focus on manufacturing technology, with the recruitment of own production engineers to each factory.
- Review of internal processes to create the right conditions for Digital 'pre-built.'
- Continued focus on non-conformity reporting, now with increased focus on non-conformity follow-up and feedback.



"To us, Eco-Lighthouse is an important first step in putting the climate and environment aspects of sustainability clearly on the agenda. Sustainability also has a social and economic aspect. We have implemented this in our strategy and will work on further development and continuous improvement of our overall sustainability focus in the future. In addition to using Eco-Lighthouse to ensure that we contribute to a green transition, we also want to inspire suppliers and partners to make environmentally conscious choices," says Frode Henning Killi, director of Moelven Byggmodul AS. Here pictured together with Inga Helene Simensen and Amalie Gjerdbakken at the placard proving that Moelven Byggmodul AS is Eco-Lighthouse certified.

## Eco-Lighthouse

### Moelven Byggmodul AS

Moelven Byggmodul AS shall be a module player with a real sustainability concept. An important step in achieving this objective has been to put in place an environmental management system. After a thorough assessment process in the spring of 2023, Eco-Lighthouse was chosen.

The work to put in place the documentation, internal control and objectives required by the environmental certification was effectively carried out from the beginning of May 2023 until certification was achieved in August of that year.

Dialogue with sister company Moelven Modus AS, which was certified in November 2022, was very useful both in the assessment of the environmental management system prior to the choice and in the work on certification.

The Eco-Lighthouse certification allows Moelven Byggmodul AS's customers to be confident that they are investing in modular solutions from a supplier that continuously works with sustainability in all aspects of its production and delivery.





# Environmentally aware 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 and traceability are 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 accounts 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. Because an increase in the use of wood as material in permanent structures contributes to longer storage of the biogenic carbon in the wood, Moelven can help make a difference by producing and developing durable products and services that meet market demand.

## 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 documentation covering statutory and market requirements and needs. Such documentation is also an important tool in the work to improve the products' environmental footprint.

Moelven is subject to multiple regulatory requirements, both national and EU. The most important EU Directives that apply to Moelven's products are the Construction Products Regulation (CPR), that concerns various CE certifications, the Registration, Evaluation, Authorisation and Restriction of Chemicals (REACH) and the Biocidal Products Regulation (BPR).

In the forestry and wood industry the raw material certification

schemes PEFC and FSC® are key certifications that document that the wood material comes from responsible forestry. Chain-of-Custody certifications require traceability through the value chain. Read more about these certification schemes on page 56.

Moelven also places great emphasis on documenting the properties of wood as a construction material. When wood is used as a construction material in permanent buildings, the carbon sink is moved from the forest into the building. Carbon storage lasts for as long as the building stands, and maybe even longer if the wood products used in the building can be recycled and reused.

The climate and environmental footprint of Moelven's operations reduces the net climate contribution from the use of our products as construction materials. Moelven is therefore constantly working to reduce its own climate and environmental footprint. Here, product development and design can make valuable contributions. This may include longer product life, improved reuse and recycling opportunities, better exploitation of forestry raw materials, etc.

Industrial building can help to significantly streamline building processes. Industrial production in controlled environments can achieve a lower climate footprint per m<sup>2</sup> finished building than with traditional construction methods. In a controlled environment, it is also easier to ensure quality, improve resource utilisation, ensure good waste management, etc. Moelven has concepts for both modular buildings and building interiors that are largely completed in the factory and assembled at the construction site. Moelven Modus AS's wall system Loop Wall is also designed for reuse and can be disassembled and reassembled several times. Compared to demolishing and then erecting new buildings, this significantly reduces the climate footprint.

## Evaluation of results

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

## AMBITIONS

- Our activities, products and value chain will make a difference in our climate action efforts
- Moelven shall have environmental assessments and certifications in place for our operations and products that meet current legal requirements at all times, along with meeting the requirements of recognised certification schemes within the markets that the Group operates in.

## 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.
- Establish objectives to improve the climate footprint at product level.
- The focus on interior products and the environmental and climate benefits of using wood-based products continues.
- All input chemicals in Moelven's products must be documented.



## The reusable Loop Wall further developed with a better environmental footprint

The Norwegian Parliament has decided that wood will be an important element in the new Government Quarter, and that its construction should contribute to innovation and development at Norwegian suppliers. One of these suppliers is Moelven Modus, which provides the patented reusable wall Loop Wall for the new office spaces.

“Since the idea for the Loop Wall emerged in 2020, we have been continuously working to further develop the solution. One of the things we've looked at is how alternative raw materials can provide an even better environmental footprint. The result is that we have allowed for the possibility of replacing the traditional insulation in the core with Hunton's wood fibre insulation. This also makes it possible for the insulation to act as a carbon sink. Other benefits of wood fibre insulation are that it can improve the sound absorbing properties of the product and that it also appears to generate less dust during remodelling than traditional insulation. This is good for both the installers and the users,” says technical product manager with Moelven Modus, Kjetil Prytz.

## Development of fossil-free adhesive

Moelven is participating in a collaboration project with RISE, Stora Enso and IsoTimber to develop and assess the possibility of using a fossil-free adhesive based on lignin. As the only plywood manufacturer in Scandinavia, Moelven Vänerply is a key partner for fully testing the concept. By developing, testing and using fossil-free alternatives like lignin, one can both minimise climate impact and increase the opportunities for recycling.







# Tools for making climate-aware choices

Do you want to learn more about how the products you buy affect the environment? An EPD can provide you with a reliable and comparable answer.

## What is an EPD?

An Environmental Product Declaration (EPD) is an environmental declaration that, based on objective and standardised methods, shows what a product is made of and how it impacts the environment throughout its lifecycle. The standardised methods ensure that products within the same product category are comparable across regions and countries. It allows us to measure the impact of our choices and thus make choices that are good for the climate. This has never been more important.

## We take responsibility

Around six years ago, Moelven started work to map the climate footprint from five different products in its range. Today, approximately 40 products have undergone this process and have had their own EPDs approved. But why are these EPDs important and what information do they 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 can we make conscious and responsible choices. As a manufacturer, we have a starting point for undertaking targeted improvement work, and the customers are given the opportunity to make informed choices when choosing a product. An EPD is verified by an independent third party and provides the necessary information. We recognised both the need and the responsibility to collect this type of data about our products early on,” says Tjalling Chaudron, product developer at Moelven.

Through the EPDs, we can highlight how much of different input factors, whether they be energy, materials or services, that have been used in the different phases of production “from cradle to grave” and which climate and environmental impact this potentially has. That way, for example, you can calculate how much CO<sub>2</sub> has been released to produce the construction materials for your specific construction project.

## Own EPD generators

Moelven decided early on to use its own data in its EPDs. This

also made it natural to develop a dedicated EPD generator. This makes it both faster and easier to generate declarations for new products.

“Using generic data, i.e. data that constitutes average values, for the various input factors, is common. But we decided early on that the figures that form the basis for our EPDs would include specific 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. In addition, it provides a very good starting point for working on improvements,” Chaudron says. Currently, it is Moelven Wood and Moelven Limtre who use this EPD generator.

Moelven Modus AS has launched its own EPD generator. Moelven Modus AS’s interior products are composed of several different types of materials such as glass, plaster and metal, and this imposes different demands on the EPD generator than is the case within the wood processing part of the Group. However, the result is the same: The EPDs are specific to Moelven’s products, they highlight the good climate and environmental properties of the products, and they provide a good basis for further improvement work.



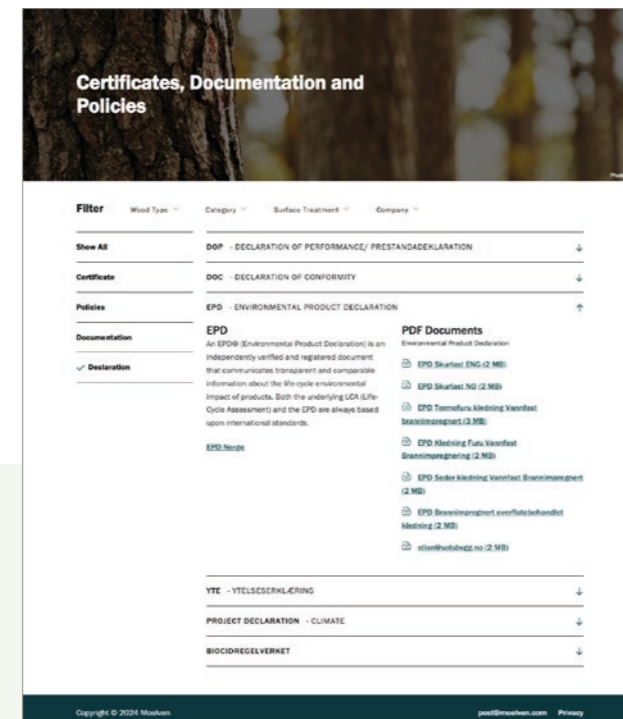
## 44-person housing rig

Moelven Byggmodul AS wanted to know more about the climate footprint from its operations, and commissioned Sweco to prepare an analysis based on a conceptual 44-person housing rig. Based on this, Moelven Byggmodul AS and its customers can now better assess alternative solutions for reducing emissions.



## Fågelporten

Tyréns conducted a climate calculation for the Nordic Swan-labelled apartment building Fågelporten in Nyköping, which Moelven Byggmodul AB has delivered. The climate calculation shows that the construction project released half the amount of carbon dioxide equivalents in production and assembly compared to traditional construction methods.



### CERTIFICATIONS AND APPROVALS

Certifications are important for both Moelven and our customers. All Moelven’s EPDs can be found on our website.

Please find a comprehensive overview of certifications and approvals here.



# Transport of goods

## Where and why is it important?

Moelven's activities require the transport of materials and products, often in large volumes and weights and across large distances. This is 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. Such environmental impacts may be greenhouse gas emissions, airborne dust, noise, traffic safety and so on. 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

Moelven is working to reduce both the environmental impact and the risk of harm to people and property as a result of transport activities. The various businesses within the Group have needs for different types of transport services, which means that the improvement work must cover different focus areas. There are a number of internal guidelines for procurement of transport services, environmental requirements for the means of transport used, transport activity at Moelven industrial areas, safety rules when loading and unloading etc. A central transport group has been established that follows up transport activities across the entire group. In order to achieve the long-term goals of cuts in CO<sub>2</sub> emissions from transport, Moelven is dependent on cooperation with other players. The cooperative work takes place both directly with the transport companies and through initiatives such as the Green Land Transport Programme, where Moelven is a partner company.

## Internal transport

Moelven's products and production structure involves a lot of

internal transport within Moelven's industrial areas. Forklifts of different sizes are mainly used for this. 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 also replacing diesel-powered forklift trucks with electric alternatives are important 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. In the event of all procurements of forklifts for the company, electric solutions must be examined and considered as an alternative.

## Transport within the domestic markets in Scandinavia

Moelven acquires transport services from several major transport companies, transport associations in Norway and haulage centres in Sweden. In some cases, the Group is also part owner, both on the timber and finished goods side.

Through close cooperation, often as the main customer and sometimes as a part-owner, Moelven has a major impact on how the companies operate, including in terms of development towards more sustainable transport. Moelven actively works with the transport companies to devise transport routes that minimise driving when empty.

An important part of Moelven's business concept is being able to offer a wide product range with short delivery times and high delivery precision. 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.

Political guidelines and infrastructure development are among the biggest challenges in the green shift for the transportation industry. Moelven has not taken a position on technology and shares the general perception in the industry that all technologies are needed in the green shift.

The combination vehicles that transport goods for Moelven



operate to a small extent on fixed routes, which means that poorly developed infrastructure both prevents efficient transport planning and results in additional costs in the form of detours to reach necessary filling stations. This is a significant obstacle in terms of increasing the proportion of lorries using alternative fuels.

An important measure to reduce environmental impact is to use modular vehicle combinations that carry more per trip. Calculations have shown that by using modular vehicle combinations, the number of trips can be reduced by up to 30 percent. A challenge with this is that the road network must be approved for the use of modular vehicle combinations, which is a challenge on some sections within Moelven's distribution network in Norway.

## Biofuels/advanced biofuels

Biofuels/advanced biofuels are currently the easiest way to reduce the carbon footprint from transportation. These may be used on the existing infrastructure and the vehicles can alternate between traditional diesel and advanced biofuels. Biofuel is available as a separate fuel HVO100 or as a mixture into regular diesel fuel.

Sweden has for many years been at the forefront when it

comes to the introduction of biofuels in diesel, with a minimum mixture of 30.5 per cent in 2023. However, as of 2024, the requirement has been reduced to 6.0 per cent, which will lead to increased CO<sub>2</sub> emissions from fossil sources. In Norway, the requirement for mixture has been 29.5 per cent in 2023. As of January 2024, the requirement is 31.5 per cent.

The mixing of biofuels has a major impact on the climate footprint of transport activities. The outcome of political processes will therefore have a major impact on the climate impact of Moelven's transport in the years to come.

## Timber and wood chip transport

Timber transport is an important part of the forestry industry, which also accounts for a significant environmental impact. 74-tonne timber trucks can quickly contribute to significantly reduce the environmental impact through increased payload per trip and thus a reduced number of trips. The prerequisite is that the road network is approved for the use of such vehicles. 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

## AMBITIONS

- Increasing the use of modular vehicle combinations, rail and sea transport where possible.
- Electrical alternatives must be explored and considered where possible when acquiring new assets for internal transport.
- Develop plan for transition to fossil-free transport.

## RESULTS

- EURO 6 class has been implemented by the transport companies Moelven collaborates with in Scandinavia.
- 2 biogas-powered lorries have been put into use for goods transport in Sweden.
- 1 electric lorry has been put into service in Norway.
- Increasing proportion of transport carried out by modular vehicle combinations in Norway.
- Increased use of rail transport with a lower climate footprint than road transport.

## MEASURES

- A Group-wide steering/collaboration group for the optimisation of the logistics area.
- Audit of established KPIs, measurement methods for the transport activities in terms of both sustainability and optimisation of logistics solutions, as well as the development of systems for necessary data collection
- Continuing to focus on modular vehicle combinations, 74-tonne timber transports and other projects to test vehicles. An additional electric lorry will be put into service in Norway, and an electric modular vehicle combination is scheduled for use in Sweden in the autumn of 2024.
- Assessing responsible business operations and environmental impact in the supply chain.



## HVO 100

HVO is a renewable fuel similar to regular diesel. HVO is an acronym for Hydrogenated Vegetable Oil, but the term is a slightly misleading because the fuel can be made from both vegetable oils and animal fats from slaughter waste. The raw materials are processed with hydrogen gas under high pressure and high temperature to form a synthetic diesel, HVO, which can either be mixed with fossil diesel or used in its pure form, HVO 100.

## LIQUID BIOGAS (LBG)

LBG is a biogas in liquid form. Biogas is a 100 per cent renewable product formed by the decay of organic matter. Several different sources can form the basis for production, such as treatment plants, landfills and agriculture. To liquefy biogas, the gas is cooled down to -160 °C, where condensation of the gas increases energy density.

## THE GREEN LAND TRANSPORT PROGRAMME

The GLP is a public-private partnership working to cut emissions for heavy vehicles by 55 percent by 2030. This is done by gathering the industry, sharing knowledge and, among other things, initiating infrastructure projects for electricity, biogas, or hydrogen. The GLP has 72 partner companies and 24 member organisations representing the key players in the transport and energy sector.



of transport that also contributes to reducing the environmental footprint from transport when the conditions are right.

**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. For goods to Europe, return capacity with foreign transport companies is largely used. Typically, this is combined transport, i.e. the trailer is loaded onto rail at combined terminals and transported by train on parts of the route, and then the final section is by road in the destination country.

Moelven is conscious of which transport companies that are used and initiated a supply chain assessment in 2022, which is aimed at both working conditions and the environment. Decent working conditions and the use of modern vehicles are of great importance to both the drivers themselves, traffic safety and the environment.

**Evaluation of results**

The EURO 6 class has been introduced by the transport

companies Moelven collaborates with in Scandinavia. The use of modular vehicle combinations is increasing and 74-tonne timber trucks are being trialled.

The testing of alternative drive trains in cooperation with transporters continued. In collaboration with different transport companies, two biogas combination vehicles have been acquired and brought put into service in Sweden. One more will be put into service in Norway in the first quarter of 2024. An electric lorry has been put into service in Norway.

Significant market changes in the Scandinavian market in 2022 resulted in a turn towards exports and partly major changes in transport patterns. The Scandinavian market has also been weak throughout 2023, upholding the pattern of a high export share and longer transport distances. In 2023 the reporting of transport of goods from suppliers has been extended to include the transport of more groups of goods, including transport where the supplier is responsible for the freight. It has been proven difficult to obtain sufficient data, so the figures involve a significant uncertainty. Comparable figures for 2022 have not been available, and the figures have therefore not been converted.

Transport of goods to customers (tkm*)	2023	2022	2021
Road transport	739,989,772	671,494,606	914,110,982
Rail transport	273,970,237	125,729,858	106,264,661
Sea transport	2,047,306,411	2,004,454,105	465,465,461
Proportion of tonne kilometres by modular vehicle combinations in Norway	13.8%	6.5%	-

Transport of timber to Moelven (tkm*)	2023	2022	2021
Road transport	304,051,065	304,022,970	330,585,682
Rail transport	12,281,940	18,744,564	13,591,227
Sea transport	52,508,874	35,885,335	20,425,925

Transport of other goods to Moelven (tkm*)	2023	2022	2021
Road transport	167,491,990	70,082,596	41,591,517
Sea transport	34,745,537	-	-

\* tkm = tonne kilometre. Calculated by multiplying the weight of the goods by the transport distance in kilometres.

Forklifts (number)	2023	2022	2021
Diesel powered, EURO-6	62	59	72
Diesel powered, EURO-5	173	179	180
Biodiesel powered	9	9	9
Electrical	171	166	185
LPG powered	0	1	0



## Environmental discount at Moelven: Environmentally aware choices for our customers

For around a year, Moelven Wood in Norway has been offering our trade customers an environmental discount as part of our commitment to sustainability. But what exactly does this discount mean and how can it benefit both the environment and customers?

**What is an environmental discount?**

An environmental discount is an incentive scheme where we reward customers who choose climate-friendly distribution solutions. For us, it’s about reducing the environmental impact and promoting responsible business operations.

**How does it work?**

By ordering modular vehicle combinations directly from us, our customers can obtain an environmental discount. This provides several benefits:

- **Fewer heavy goods vehicles on the roads:** By combining loads so that there is more freight per vehicle, we reduce the number of heavy goods vehicles on the roads by as much as 30%. Fewer vehicles on the roads lead to better road safety and less road wear.
- **Lower CO<sub>2</sub> emissions:** Modular vehicle combinations have a significantly lower climate impact compared to smaller transport units.

**How do our customers qualify for an environmental discount?**

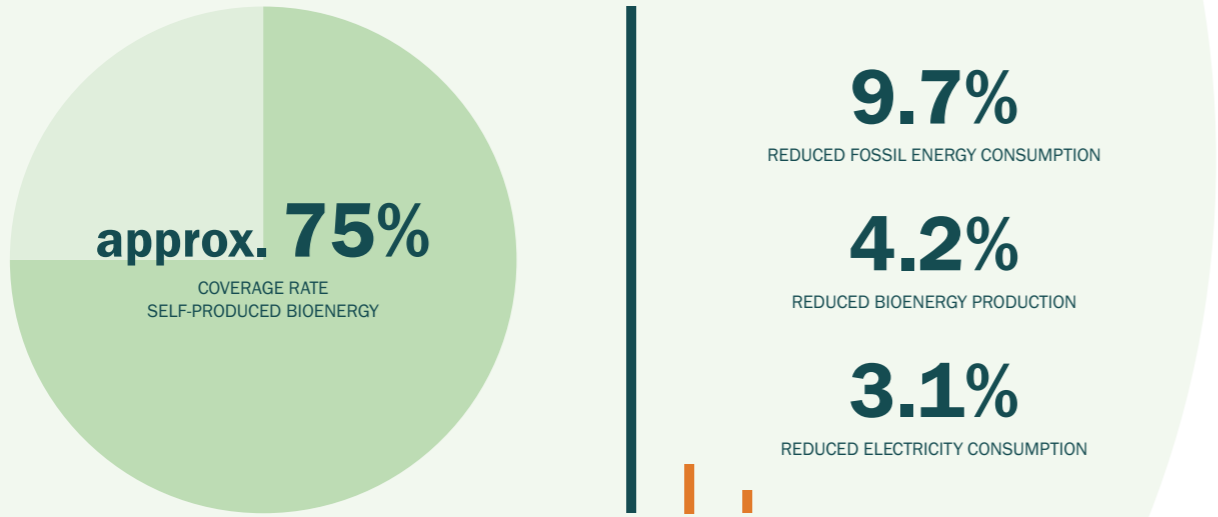
To achieve environmental discount, customers must follow certain guidelines:

- **Full loads of rational goods:** Customers must order full loads of rational goods directly to a building material supplier.
- **Approved road network:** The road network must be approved, and the building materials supplier must have the capacity to accept modular vehicle combinations.
- **Ordering requirements:** Customers can choose between different order combinations that we know fill the vehicles optimally.

Good for the environment and the customer! An environmental discount is a smart way to support sustainable choices. By choosing modular vehicle combinations, our customers contribute to a better environment while achieving economic benefits.

It is a win-win situation for all parties.

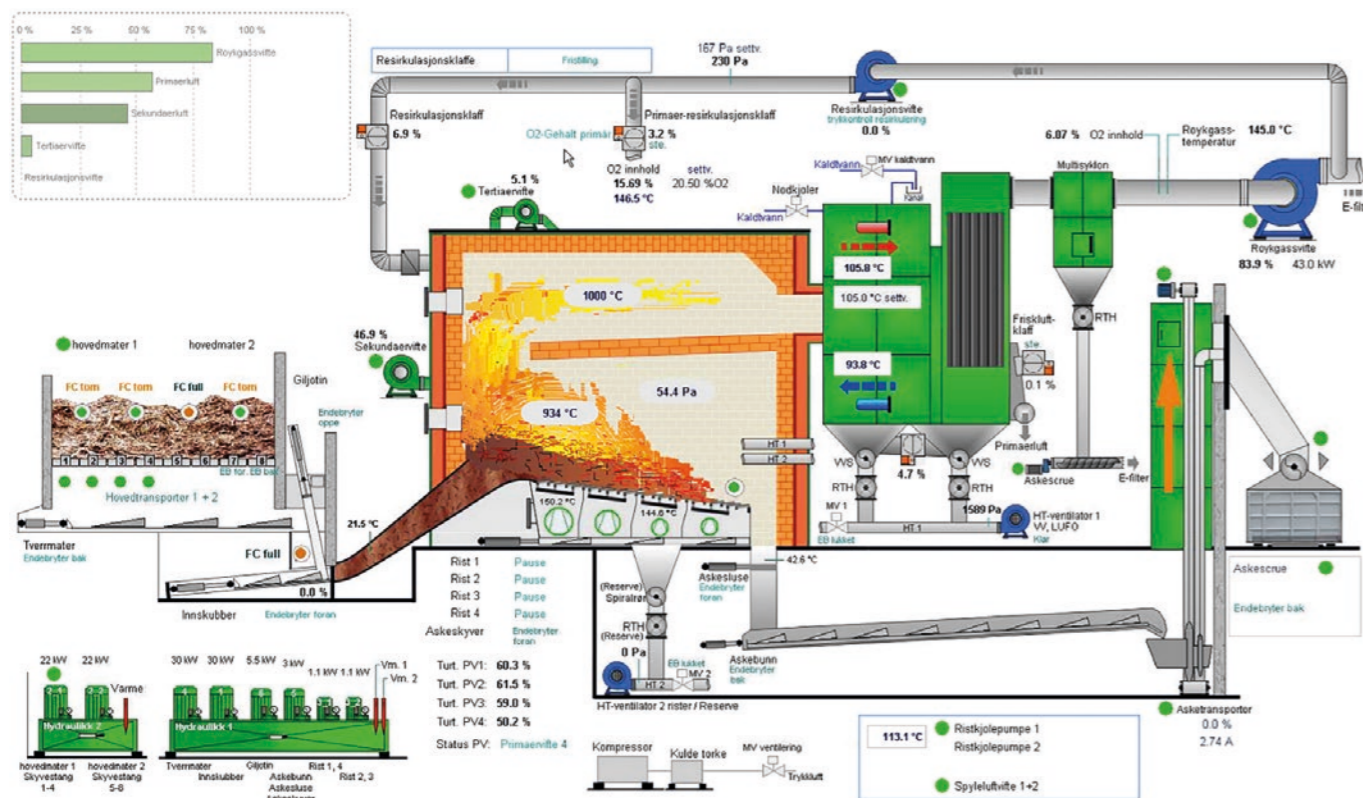
# Energy consumption in our own production



## Where and why is it important?

Moelven's industrial activities require significant amounts of energy. Although around 3/4 of the energy demand is covered by self-produced bioenergy based on residual raw materials from the sawmill activity, the proportion covered via purchased

electric power is the largest single source of greenhouse gas emissions after transport. Energy consumption in our own production is important to Moelven and its stakeholders since it represents both an environmental strain and a major expense.



Process diagram from the control system at one of our biofuel plants. The plant produces hot water from bark and residual raw material from the sawmill. The energy in the hot water is used in the timber dryers to dry timber. Shown from the left side of the diagram, the bark being transported in, the combustion process, heat exchange systems, flue gas purification and ash output. This biofuel plant produces approximately 70 GWh of thermal energy a year, which corresponds to the energy consumption of just over 5,000 households.

## Policy and approach

Moelven works continuously to improve the efficiency of the energy consumption at its facilities. This will be done by actively participating in the technological and market-related development of the bioenergy sector. In addition, fossil fuels will be replaced by alternative and more environmentally friendly sources of energy as far as practically and financially viable.

Moelven has a goal of covering 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 and drying processes, where the operation of the electric motors for the timber dryers requires significant energy. The overall energy consumption in these areas is strongly linked to production volumes. The work to improve efficiency is aimed at reducing energy requirements for each unit produced. In the 2023 to 2025 strategy plan emphasis is on a strategic focus for more energy-efficient drying. This involves replacing the oldest and least energy-efficient concrete driers with new driers, which will result in lower energy consumption per unit produced due to the improved controls and heat recovery. At the same time, capacity is improved and enables 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. Moelven has been actively working for several years to utilise modern technology to optimise quality and raw material utilisation while minimising energy consumption.

A detailed energy survey has been carried out of all of the Group's operations in Sweden. The survey results form the

basis for the Group's objective of an annual improvement in energy efficiency of 2 per cent. In order to conduct efficient and targeted improvement work, in 2022, an internal project was initiated to review the Group's overall energy strategy in terms of both procurement/production, consumption, measurement and rationalisation of all energy categories. The objective was to lay the foundation for the design of an energy strategy that takes into account both the opportunities that lie in the Group's value chain and the energy situation society will face in the years to come. Based on the conclusions from this project, in 2023 efforts have been made to establish an organisation and systems for measuring and monitoring energy efficiency work.

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.

## Evaluation of results

Total energy consumption decreased in 2023 compared to the previous year. This is mainly due to a lower level of activity than the previous year. The investment programme of approx. NOK 210 million, which was adopted in 2022 to upgrade the drying park of several sawmills, will provide a major improvement in energy efficiency, but has not yet proceeded far enough to produce a noticeable change in the results for 2023. The results in 2023 are also negatively impacted by the extensive investment activity that has been ongoing in 2023 and continues into 2024 with the completion of projects that will improve energy efficiency in the long term.

Category – Volume (GWh)	2023	2022	2021
Total fossil energy consumption	43	47	48
Total bioenergy production in the Group (lower calorific value)	788	836	835
Lost bioenergy	121	122	94
Total energy consumption, purchased	217	224	235
Purchase of district heating	100	93	96
Total sales of bioenergy	67	70	72
<b>Total energy consumption in the Group (GWh)</b>	<b>960</b>	<b>1 008</b>	<b>1 048</b>
Consumed bioenergy (GWh)	700	737	765

## AMBITIONS

- Annual improvement in energy efficiency >2%.
- 95% of the heating requirements for premises and drying will be covered by self-produced bioenergy.
- 10% reduction in non-volume dependent electricity consumption compared to 2017 by the end of 2024.

## RESULTS

- Fossil energy consumption decreased by 9.7 per cent in 2023.
- Bioenergy production reduced by 4.2 per cent in 2023.
- Electricity consumption reduced by 3.1 per cent in 2023.

## MEASURES

- Review of the Group's overall energy strategy in terms of procurement/production, consumption, measurement and rationalisation of all energy categories.
- Revise existing targets and establish more activity-specific KPIs to analyse energy consumption and energy efficiency at Group, division, company and department level.
- Establish action plan for realising revised objectives.



# Production of bioenergy

## Where and why is it important?

Bioenergy is energy that is produced from biomass formed in current ongoing biological processes. Bioenergy is thus a renewable energy source. 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. 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. For Moelven, bioenergy is also an important area because it contributes to the use of all raw materials and thus also good economic operations.

## Policy and approach

The energy potential of the annual production of chips and bark products, including cellulose chips, is between 2.5 and 3.0 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.

The Group's sustainability policy 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. In the Group's long-term strategy plan from the autumn of 2022, a goal of an annual improvement of energy efficiency of at least 2 per cent has been included. This applies to electrical energy and bioenergy combined.

## Evaluation of results

In 2023, Moelven had a total thermal bioenergy consumption of 700 GWh. Of this, 600 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 2023, this amounted to 100 GWh. In these cases, the bioenergy is generally produced using biomass from Moelven, but the bioenergy plant is owned by external parties.



Description	2023	2022	2021
Energy content in sold biomass, including pellets (GWh, lower calorific value)	2,290	2,458	2,430
Bioenergy produced in Moelven (GWh, lower calorific value)	788	836	835
Consumed bioenergy (GWh)	700	737	765
Bioenergy bought from companies outside the Group (GWh)	100	93	96
Bioenergy sold to companies outside the Group (GWh)	67	70	72

## AMBITIONS

- To the extent possible, we will phase out the use of boilers running on fossil fuel and replace these with bioenergy plants.
- Implement an increase in activity according to the Group strategy without increasing electricity consumption.
- Annual improvement in energy efficiency > 2%.
- 95% of the heating requirements for premises and drying will be covered by self-produced bioenergy.

## RESULTS

- 2290 GWh (lower calorific value) of energy potential in biomass, including pellets sold to external bioenergy industries.
- 788 GWh thermal bioenergy produced using our own bioenergy plants.
- 67 GWh thermal bioenergy sold to external parties.
- 74% of total energy needs met through bioenergy

## MEASURES

- Improve measurement and reporting of bioenergy production and consumption.
- Assessment and preparation of a plan for rationalisation is ongoing.

## Resource use: What are the trees that are cut down used for?



### 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.

### Saw timber

Saw timber 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 timber. The rest becomes wood chips. By using residual raw materials e.g. to produce pallets, bioenergy raw materials, chipboard raw materials and similar, we can fully utilise the resources of the forest.

### 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.



Moelven makes a living from refining a renewable natural resource and that comes with a commitment. We can fully utilise the resources of the forest by using controlled wood from sustainable forestry, using the various parts of the wood for what they are best suited and using residual raw materials to produce e.g. pellets, chipboard and biofuel. Sustainable forestry also involves planting new trees after the final harvest. In this way, we make sure that future generations can also harvest renewable raw materials from the forest.





# Safeguarding natural resources

## AMBITION

We will use renewable and sustainably managed resources, and utilise them in full



For 125 years, Moelven's basic idea has been the same: To use the natural resource from the forest to the fullest. Photo: Moelven and Sören Håkanlind





PRIORITY AREA

# Safeguarding natural resources



The re-establishment of forests after harvesting through planting or natural rejuvenation also contributes to future generations benefiting from the forest as a renewable resource, carbon sink and livelihood for biodiversity. In both Norway and Sweden, we have legislation to ensure the reproduction of forests after logging. Photo: Johan Alp



# Certified and traceable materials

## Where and why is it important?

Forests play an important role in the carbon cycle of nature by taking up CO<sub>2</sub> from the atmosphere and storing it as biogenic carbon. The forest is home to a variety of species, including trees, plants, fungi, insects, birds and mammals.

Moelven is a major purchaser of timber and has both a responsibility and an opportunity to contribute to responsible forestry by imposing requirements on the supply chain. Responsible forestry contributes to the forest being managed with regard to the forest as both a renewable resource and carbon sink, as well as the basis for the continued use of the forest. This includes protecting forests and safeguarding environmental values such as biodiversity and conditions for taking part in outdoor activities.

## Policy and approach

Knowledge of the origin of the raw materials used in our production is important, both for quality considerations and as the basis for own control procedures and improvement work. A key element in the Group's sustainability policy is that Moelven will have environmental assessments and certifications in place for its operations and products that meet current legal requirements at all times, along with meeting the requirements of recognised certification schemes within the markets that the Group operates in. Moelven aims to have as much of its purchased timber as possible certified in accordance with recognised standards relating to sustainable forestry (PEFC and/or FSC®). As a minimum, all timber purchased by Moelven shall be checked in accordance with applicable requirements



Photo: Jesper Anhede

for controlled wood set by recognised chain of custody standards (PEFC CoC and/or FSC® CoC). PEFC and FSC® are international NGOs (non-governmental organisations) that work for responsible forestry, and issue certificates to actors who meet the criteria they have defined. The organisation promotes responsible forestry through third-party certification. Common to both standards is a three-stage certification (see illustration).

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).

Moelven currently has two multi-site certificates in the PEFC CoC and FSC® CoC schemes. These are traceability certifications that follow the value chain from timber to finished products, which is an important prerequisite in the work to ensure that the finished products do not contain raw materials from controversial sources. See the license codes for Moelven's multisite certificates from FSC® and PEFC on page 110.

Besides the external audit required to maintain the certifications, Moelven has established a dedicated internal group responsible for internal control and internal auditing within the traceability area.

In Norway, Moelven buys timber via the forest owners' associations as wholesalers, while procurement in Sweden takes place directly from private forest owners. The company Moelven Skog AB is responsible for the procurement and also performs a number of different services in forestry, including harvesting. In addition to being included in the traceability certification, the company therefore also has a so-called Forest Management certificate PEFC.

Certifications such as documentation for sustainable materials are becoming increasingly important both in the trade and in the project market, primarily towards the residential and commercial building segment. Various environmental certifications for buildings such as Nordic Swan, BREEAM and Sweden Green Building Council require that certified wood products are used.

## 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 certified, and a proportion of it is certified twice in accordance with both PEFC and FSC®. 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. The certification proportion of these products is high and Moelven continuously works to only procure certified products to the greatest possible extent. For those products that are not certified, Moelven works with a DDS system to ensure that the products come from responsible forestry.



## CERTIFICATION IN THREE PARTS



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.

## AMBITIONS

- Moelven will use renewable and sustainably managed resources, and utilise them in full
- Moelven shall use certified raw materials from 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).
- Moelven will have environmental assessments and certifications in place for its operations and products that meet current legal requirements at all times, along with meeting the requirements of recognised certification schemes within the markets that the Group operates in.

## RESULTS

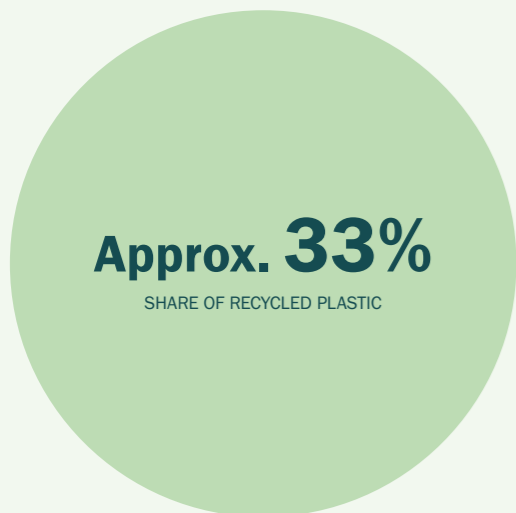
- 100 per cent of the timber is checked in accordance with the applicable requirements for controlled wood and a high proportion is PEFC certified or FSC® certified.
- PEFC CoC multisite and FSC CoC multisite certificates renewed in 2023.
- Errors committed made in connection with a harvesting commission in Sunne in Värmland provided the basis for an external audit of the incident. The audit concluded that the errors committed were violations of the certification rules, but categorised as "minor deviations".

## MEASURES

- Increase the proportion of certified timber from Swedish forests for our Swedish sawmills. Continue checks and increase the proportion of certified retail products.
- Evaluation of the incident in Sunne has been carried out both internally in Moelven and with external parties. The experience has formed the basis for updating internal instructions, control systems and training programs to avoid similar incidents going forward.



# Resource-efficient design and packaging



## Where and why is it important?

Moelven's impact on the environment occurs both by actual production and downstream in the value chain through customers' and end-users' use and handling of products and packaging. Material use is optimised while waste quantities are 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 or transported outdoors, and are thus exposed to the elements. The correct packaging is important in order to preserve quality, although this often also presents an environmental challenge in the form of waste. 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. The use of recycled materials and enabling recycling in the value chain is therefore of great importance.

## Policy and approach

A key objective for Moelven is to have optimal raw material utilisation where the value of the raw material is safeguarded in the best possible way, both in terms of raw material utilisation and value of the products created. The requirements and design of the end products from the various processes must also be adapted to the industrial structure, so that production can be as efficient as possible. Packaging and distribution are also part of the industry. Unnecessary packaging should be avoided while maintaining the requirements for protection of the products during transport and storage. 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. Through mass production with good planning, resource usage is rationalised and waste quantities are reduced, while also making waste management easier. At the construction site, both time consumption and waste volume are significantly reduced. In addition, the concept provides excellent opportunities for recycling and reuse.

Exact cutting within the Group's timber processing activities contributes to reduced waste volumes for customers. Stubs that arise in production can be handled effectively as part of the industrial process, and be included as input goods in bioenergy production or other fiber-consuming industry. In connection with internal transport of goods, every effort is made to ensure that the conditions allow for transport to take

Moelven Wood's product "Værbitt", is a dyed CU impregnated pine cladding. Værbitt is Moelven's solution for customers who want durable and transparent coloured pine cladding with a long service life. It is in durability class 1 - Very durable against rot, as well as being produced in fixed lengths that result in less stubs and wastage at the construction site.



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 employ a waste management system 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. The cover plastic that Moelven uses on sawn timber and construction wood is based on 50 per cent consumer recycled plastic. This plastic meets the strict requirements of the packaging and is 100 percent recyclable.

## Evaluation of results

The change in plastic consumption from 2021 to 2022 is mainly due to deliveries and production in 2022 having consisted of a larger proportion of products with less packaging consumption. The decline in consumption from 2022 to 2023 is due to lower activity levels.



## Packaging based on 50 per cent recycled plastics

"I'm here to protect your Timber products, wood be nice to do it again. Please recycle me."

Towards the end of 2021, Moelven, in collaboration with Swedish Trioworld, moved as one of the first players in the industry to plastic packaging made from 50 per cent consumer recycled plastic. This has resulted in a more circular solution, significantly reducing the carbon footprint from packaging. The new plastic is 100 percent recyclable.

	2023	2022	2021
Plastic packaging (tonnes)	476	534	2,008
Recycled plastic packaging (50% PCR plastic)	1,044	1,269	
Bioplastic packaging (tonnes)	53	45	45
Polyurethane (tonnes)	1	4	4
<b>Total plastic consumed (tonnes)</b>	<b>1,574</b>	<b>1,807</b>	<b>2,058</b>
Plastic recovered (tonnes)	440	418	581
Cardboard packaging (tonnes)	109	130	113

## AMBITIONS

- Product development with a view to reducing climate footprint and resource consumption.
- Raw material utilisation must be optimised and the re-use and recycling of residual raw materials must be enabled as far as possible.
- Actively strive to minimise the use of plastic and find alternative materials
- A share of at least 30% recycled plastic.

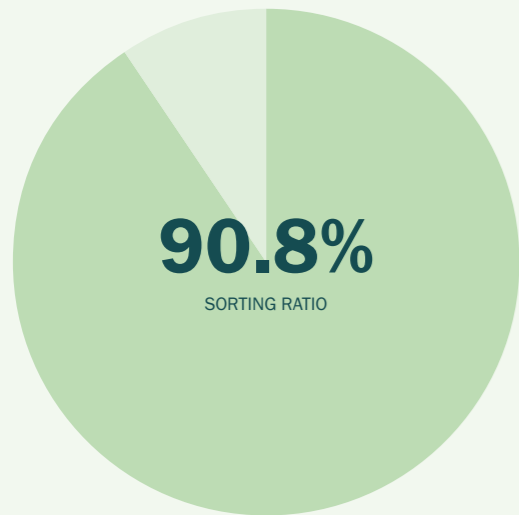
## RESULTS

- 1,547 tonnes of plastic consumed.
- Approx. 33% share recycled plastic
- 440 tonnes of plastic recovered.

## MEASURES

- Developing resource-efficient products and production methods.
- Systematically identify opportunities for reducing waste and for alternative packaging materials.
- Collaborate with the value chain on solutions that can reduce packaging consumption.

# Waste management



**14,464**

TONNES OF WASTE IN TOTAL

**984**

TONNES OF HAZARDOUS WASTE

**440**

TONNES OF WASTE SORTED AS PLASTIC

## 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, 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 low volume of waste and a high degree of sorting could be indications of efficient production and a reduction of negative environmental impact, which in turn affect the Group's costs and profitability.

## Policy and approach

Moelven's sustainability policy includes guidelines and objectives both with regard to arrangements to prevent waste from occurring and the waste management itself.

- 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 90 per cent.
- 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 2023 includes 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. Emphasis has been placed on entering into agreements with as few actors as possible to facilitate close cooperation to achieve the most environmentally friendly waste management for the entire group. With joint waste collection partners, greater transfer value between the companies and better opportunities for identifying circular solutions internally

	2023	2022	2021
Hazardous waste	984	725	1,056
Other waste	13,480	15,384	15,132
<b>Total volume of waste</b>	<b>14,464</b>	<b>16,109</b>	<b>16,187</b>
Waste sorted as normal wood	3,706	4,466	4,728
Waste sorted as impregnated wood	182	277	638
Waste sorted as plastic	440	418	581
Waste sorted as metal	1,251	1,052	1,293
Waste sorted as plaster	1,176	1,204	1,157
Other waste sorted locally	5,396	6,866	5,483
Mixed industrial waste (not sorted locally)	1,329	1,133	1,193
<b>Total volume of waste</b>	<b>14,464</b>	<b>16,109</b>	<b>16,187</b>
	90.8%	92.9%	92.6%

within the Group is achieved.

Several of Moelven's locations apply LEAN production methods. These are based on continuous improvement and a reduction of wasting in the organization. Waste impacts production costs and must therefore be reduced to a minimum.

## Evaluation of results

Waste management has a high 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 amount of waste in 2023 was 14,464 tonnes, which is a significant reduction compared to 2022. This is mainly due to reduced activity at certain units. The sorting ratio fell from 92.9 per cent to 90.8 per cent. The decline is due to a greater investment activity in 2023 that has resulted in an increased amount of non-sortable waste fractions when demolishing and disassembling old buildings and plants. The Group's goal is to achieve a sorting ratio of at least 90 per cent, and in 2023 the sorting ration was 90.8 per cent.

## AMBITIONS

- Actively work on waste reduction and waste management in accordance with the waste pyramid priorities
- Sorting and recycling waste to the extent technically possible.

## RESULTS

- 14,464 tonnes of waste in total
- 984 tonnes of hazardous waste
- 440 tonnes of waste sorted as plastic.
- 90.8% sorting ratio.

## MEASURES

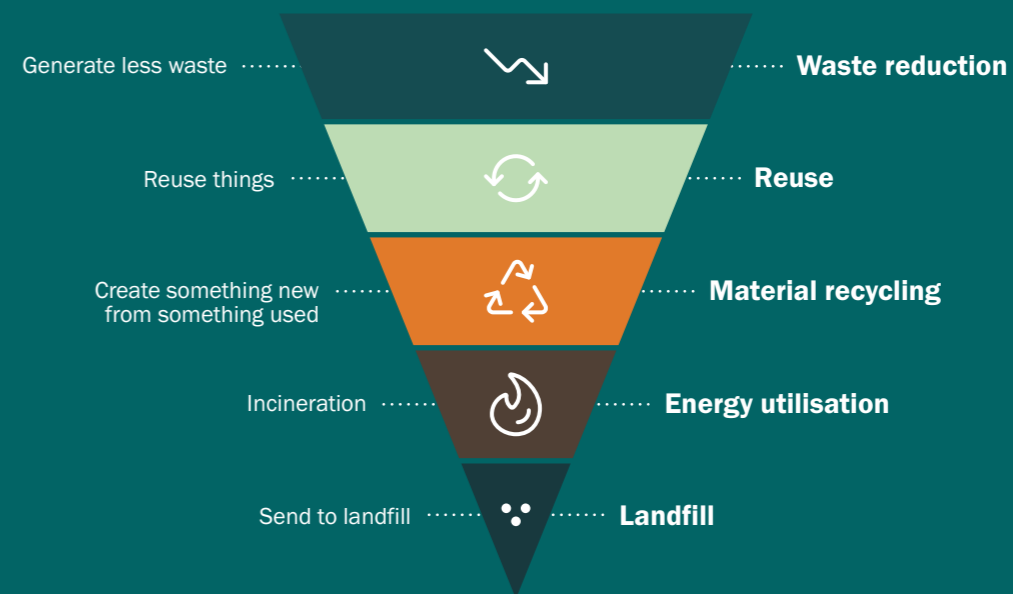
- Continue mapping of waste and follow-up of KPIs including the calculation of CO<sub>2</sub> emissions from waste.
- Strengthen coordination of waste management further across the entire Group.
- Collaboration in the value chain to reduce waste volumes and emissions from waste using solutions such as material recovery rather than incineration.
- Continue working to increase the sorting ratio to more than 90% for all companies.





### WASTE STATION

The waste station at Moelven Limtre AS is strategically located on site, well signposted and designed in a way that eases the sorting of the waste fractions. By facilitating easy access for forklifts, wheel loaders and other vehicles, it ensures efficient and proper waste management, even for larger fractions. Established waste stations where containers are in one place, make internal logistics more efficient and contribute to greater control over the filling rate of each container. In this way, we also avoid unnecessary transport related to collection and emptying. Moelven Limtre AS has made significant efforts to improve and maintain its sorting ratio, which in recent years has been 90% and higher.



### 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 4.0 - 4.5 million m<sup>3</sup> of saw timber. There is therefore huge potential in resource rationalisation and optimisation, even with minor production changes.

Moelven continuously works to achieve optimum utilisation of resources and on ensuring that no raw materials go to waste. This is an important topic for Moelven since it affects profitability. Forests are a renewable resource, but they must be managed in a sustainable manner. The forest both absorbs and stores CO<sub>2</sub>, and it provides a livelihood for much of the diversity we rely on for ecosystems to be in balance. For both climate and environment, it is important that we avoid wasting one of our most valuable natural resources.



CEO Morten Kristiansen and system engineer Ahmed Nasrullah study pieces of raw material that have been mechanically identified and removed at Moelven Profil AS. The sorting is due to faults such as twigs, cracks, resin pockets, etc. Parts with approved quality are finger jointed and become wooden components for window production, while the removed pieces end up as raw material for bioenergy.

## Policy and approach

Moelven is concerned with 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. This results in a mix which overall provides the highest value utilisation of 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.

The use of camera sorting helps improve resource utilisation. Timber is sorted and, if necessary, 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.

There are major improvement and development opportunities in advanced data analytics and in leveraging real-time updated operational information. Data analysis based on historical measurements and results provides a basis for planning improvements. Real-time updated operational information provides process control opportunities that have not been previously available. One of Moelven's priority areas is displaying real-time production data to the operators involved so that they have an opportunity to improve the work processes directly.

The system currently under deployment links data from several different systems, including HSE, and allows the users themselves to decide how to compile and present the information. This is important as the need for information varies in different places in the business.

## Evaluation of results

In 2023, the recovery factor was lower than normal. Resource optimisation through saw extraction from the log is not only based on maximising the recovery factor. An important principle for Moelven is to utilise the entire log, and exploit the full value of the raw material. Regardless of how the extraction is carried out, all residual raw materials, including chips and bark, must be used internally or sold.

In some cases, the desired final product will also affect the recovery factor. For example, the production of sawn timber with a lower moisture content as a raw material for glulam production will result in a lower recovery factor than the production of sawn timber with a higher moisture content. All of these

conditions mean that the recovery factor varies from year to year, depending on raw material dimensions, efficiency in production, demand for finished goods, etc. In any case, it is crucial that every stage of production works to exploit the resources as efficiently as possible. An important part of this work is the deployment of a technical system platform and work methodology. During 2023, the concept developed by Timber has been rolled out to several units. At Moelven Årjäng AB, special emphasis has been placed on the collection of data related to energy consumption, which will provide a good basis for the improvement work related to energy efficiency.

## Better exploitation of the log with new timber sorting

The new high-tech timber sorting line at Moelven Soknabruket AS plays along with nature, customers and employees.

The brand new timber sorting line has up to three times the capacity of the previous one, as well as X-ray scanning and a 3D frame.

"This enables us to better saw the timber for what it is best suited for. In this way, we reduce waste and make full use of our natural resource," says Nils Anton Hæhre, general manager of Moelven Soknabruket AS.

### Training of Moelven colleagues

The facility is built in the same way as the timber sorting line at Moelven Våler AS, and the new one being built at Moelven Edanesågen AB. It's not a coincidence.

"Our operators have been to Våler and been trained on the machines there. They have also visited us here. It's great to be able to exchange experience like that within the group," Hæhre says.

He says the employees have been deeply involved throughout.

"They have been involved in designing all facilities, from dining rooms to changing rooms. Now the noise level is much lower than previously and the drivers have safer access to and from the timber trucks, after we moved the plant to another part of the site. The operators say they are very pleased," Hæhre says.

### Energy efficient and environmentally friendly timber irrigation

Along with the timber sorting, new timber irrigation is being built. Watering is climate controlled and water consumption is adjusted to the irrigation needs, which is energy efficient and better for the environment. In addition, a basin is built where the sawmill can cache water. This provides the opportunity to fill

the basin with pumps at a time of day when there is low electricity consumption and a low electricity price. After irrigation, the water will be collected in a natural treatment park where particles are filtered out and the concentration of nitrogen and phosphorus is reduced through uptake by plants growing in the treatment park.

"All in all, there are many positive effects of the investment, on everything from the working environment, to climate and environmental impact, as well as the quality of our products," Hæhre says.



### AMBITIONS

- We shall utilise resources optimally.

### RESULTS

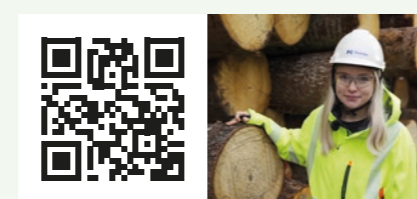
- A technical system platform for systematic improvement work and process control has been established.
- Sawmill yield below the targeted level.

### MEASURES

- Ensure organisational maturity for the digitalisation of work methods for digital industrial process control.
- Deployment of the technical system platform and work methods for systematic improvement work where the organisational foundation is in place.
- Monitor relevant KPIs for optimising the use of residual materials.

### HOW A SAWMILL WORKS

Join us on the sustainable journey from seed to finished wood product. Read more and watch video.







## Glulam beams from skating rink reused in residential building

When the Isdala skating rink is demolished, the 40-year-old glulam beams in the building will be reused in the residential building Kvarteret Återbruket in Gothenburg.

Gothenburg Municipality aims to reduce CO<sub>2</sub> emissions from construction projects carried out by the city by 90 per cent before 2030. Circular building is very efficient way to reduce both emissions and waste.

When the Isdala skating rink is demolished, the glulam beams – which were once supplied by Moelven Töreboda AB – will be reused in the apartment building Kvarteret Återbruket in Gothenburg.

The beams are transported from Gothenburg and “home” to Moelven Töreboda. There they will be refurbished and adjusted before they become part of a residential building with around 70 apartments and continue to be useful for a long time to come.

“This is a very interesting pilot project that we were pleased to be a part of. We are confident that reuse will be a prerequisite for building sustainably in the future. Glulam is well suited for this, as it retains its strength and is easy to process into other dimensions,” says Johan Åhlén, CEO of Moelven Töreboda AB.



Both photos: Sören Håkanliind



# Water consumption

**3,064,687 m<sup>3</sup>**  
WATER CONSUMPTION 2023

**2,774,638 m<sup>3</sup>**  
SURFACE WATER CONSUMED

**259,632 m<sup>3</sup>**  
MUNICIPAL WATER CONSUMED

**30,964 m<sup>3</sup>**  
GROUNDWATER CONSUMED

## 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, 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.

At Moelven, the majority of water consumption is linked to the irrigation of timber and drying of sawn timber. The timber is irrigated during the summer season to ensure quality. Without irrigation, timber is more exposed to drying out, 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 currently 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.

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.

## Evaluation of results

Moelven introduced group reporting on water consumption from 2021 onwards. The total water consumption for the Group in 2023 was 3,064,687 m<sup>3</sup>, a reduction of approximately 13,22 per cent from the previous year. Since the reporting procedures in the area are relatively new, the figures are still characterised by greater uncertainty than in areas with more established procedures. The water largely comprises surface water from lakes and rivers. Groundwater constitutes approximately 1 per cent and around 8 per cent is mains water.

The use of municipal water is reduced compared to the previous year. Consumption in 2022 was abnormally high at some units due to leaks. 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 applied to the surface of the wood that is dried in order to maintain control of the process. 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.



The image shows a chamber drier at Moelven Mjøsbruket AS. 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. Water is therefore sprayed to maintain high humidity in the chamber. When the wood is cut into e.g. panels, it is important to make sure that the wood is tension-free. 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.

Water consumption	2023	2022	2021
<b>Total volume of waster consumed (1000 m<sup>3</sup>)</b>	<b>3,064,687</b>	<b>3,545,015</b>	<b>2,407,508</b>
Water consumption - Surface water (rivers and lakes) [m <sup>3</sup> ]	2,774,091	3,119,559	2,116,959
Water consumption - Groundwater [m <sup>3</sup> ]	30,964	24,969	40,994
Water consumption - Mains water [m <sup>3</sup> ]	259,632	400,487	249,555

## 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

- 3,064,687 m<sup>3</sup> water consumed in 2023 compared to 3,545,015 the previous year.

## MEASURES

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





# People in focus

## AMBITION

We will be an attractive and safe workplace.



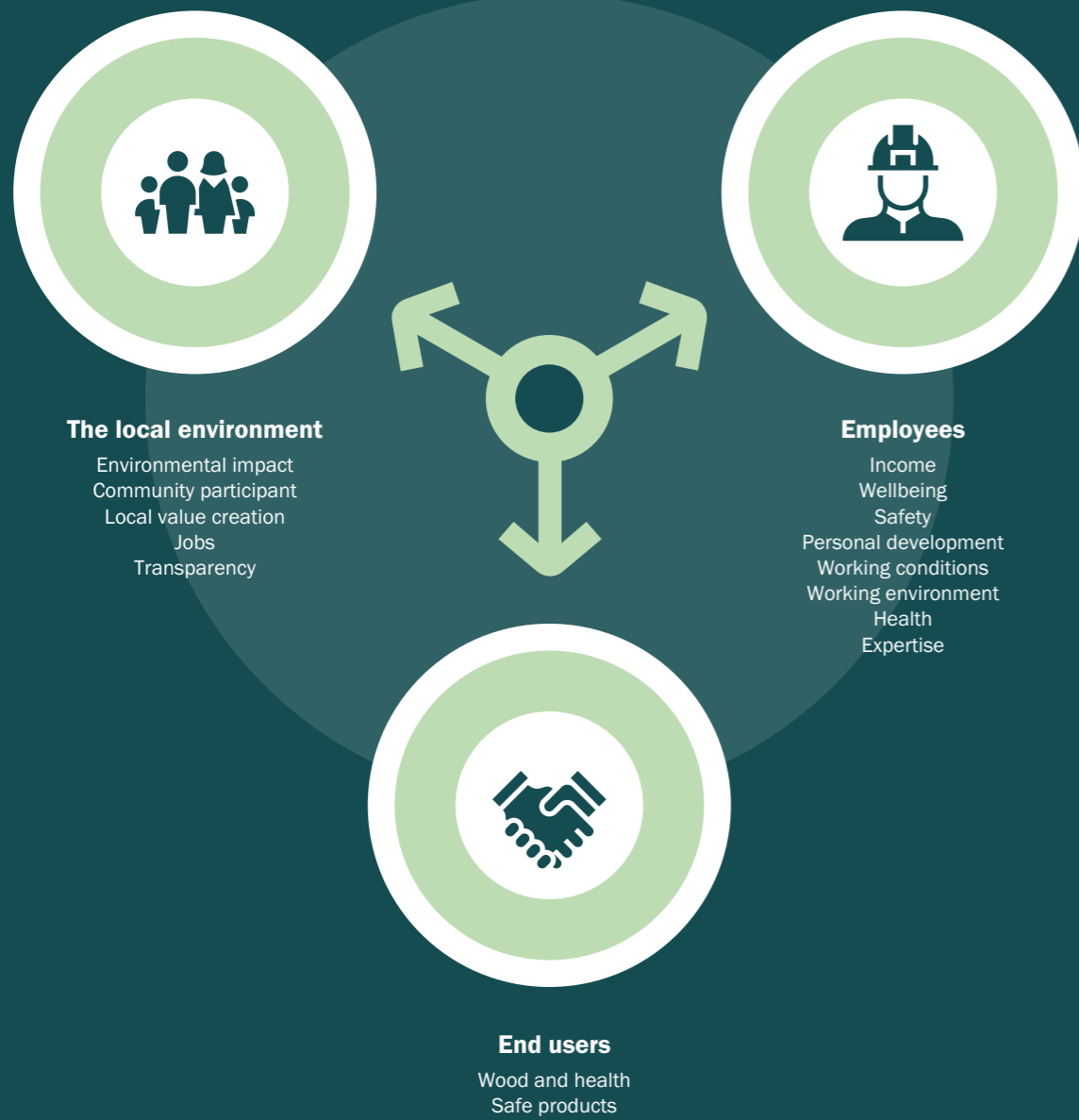
**Above:** Inga Helene Simensen, HR and HSE manager at Moelven Byggmodul AS and former HSE and sustainability adviser Jorid Kleiven, celebrated this autumn as the company was recognised as an Eco-Lighthouse. **Below:** In addition to the Eco-Lighthouse certification, the company also celebrated the completion of module number 100,000. The management team gave away water bottles, treated all employees and invited retirees to coffee and cake. In the front of the picture are Managing Director Frode Henning Killi and production worker Vidar Olsen.





PRIORITY AREA

# People in focus



Operator Besim Dinarica at Moelven Byggmodul AS is one of 3,256 employees in the Moelven Group.



# Health, safety and the environment

## Moelven focuses on its employees

In recent years, we have worked actively with employee participation and leadership at Moelven. This, combined with intensified systematic work in the HSE area, is the cornerstone of ensuring that all employees return home in one piece. Systematic HSE work creates an improved working environment by ensuring that employees have safe and secure working conditions. Managers and decision makers are given more information and knowledge about the work environment and the possible risks, so they can make more informed decisions. The focus on employees and leadership contributes to increased job satisfaction, well-being and motivation. Among other things, the results are apparent through a lower injury rate, lower sick leave and increased productivity.

Systematic HSE work is ongoing work and Moelven will keep this as the top priority going forward. Our people matter the most.

## 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, LTI2 rate, number of incidents recorded and absence due to illness.

The priority action plan "HSE towards 2023" brought Moelven a big step forward in the systematic improvement work. The action plan was largely concluded in 2023. At the same time, a new action plan was being developed: "HSE towards 2025".

Several of the elements of HSE towards 2023 live on as independent measures. In HSE towards 2025, we have chosen to raise the bar and thus introduce new focus areas.

Work with fire prevention measures is always central, but will receive increased attention in 2024 and beyond. Moelven is in an industry where fire is unfortunately a real risk. Fires that are allowed to develop can quickly become devastating. Improving fire prevention work through both technical and organisational measures will therefore be key to the programme going forward.

Furthermore, we are increasing efforts and focus on presence work and skills development. These are key areas to strengthen and will bring positive changes to our HSE culture.

Reporting hazardous conditions, conversations about serious incidents that have occurred and actions to create a safer working day are areas in which each of our 3,256 employees are making a contribution. The work with active employee participation and active leadership is a major contributor to ensure belonging and the confidence to speak up and care for one's colleagues.

## Presence

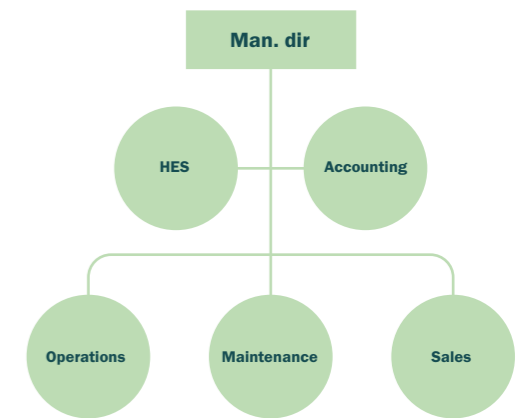
As mentioned, presence is an important area for Moelven – we want to make sure we are present at work. After several years of increased absenteeism rates and numbers, presence work will be a major focus area going forward with measures such as:

- Health-promoting measures to prevent sick leave
- Close follow-up in case of illness
- Tools to facilitate work

The Safety Committee consists of the group management, HSE manager and employee representatives. The HSE professional forum consists of representatives from all divisions and the HSE manager.



The Safety Committee | 5-6 meetings annually



HSE roles at company level | Yearly conference



Everyone wants to actively improve our workplace," says HSE hero Christoffer Nilsson. He became an HSE hero for his daily involvement in improvement work. Photo: Christoffer Nilsson with his diploma to the right.



Have you considered what good food and being greeted with a smile and care mean for a good workday? Marit Bruget, canteen manager at the headquarters in Moelv, knows how important this is. She received the HSE hero award for her efforts for a good work environment. Photo: Marit Bruget was presented with the diploma by HR Director Yngve Andreassen and Chief Administration Officer Morten Sveiverud.



Steffen Engeland was presented with the HSE hero of the month award for his efforts to ensure safe project execution. Photo: Steffen Engeland was presented with the diploma by division manager Bjarne Hønningstad.

The goal is to reduce sick leave in the years ahead. Moelven is extending the good health insurance scheme for its employees, which helps ensure that anyone who needs it can access treatment and return to work more quickly.

We call attention to those employees who have contributed something extra to a good work environment, good safety or health in the workplace, by selecting the HSE hero of the month. Suggestions for candidates come from all parts of the group and this is one of the ways we highlight the minor and major measures implemented in everyday work.

## Systematic improvement work

Systematic HSE work is an key element of Moelven's strategy. Explicit requirements and guidelines, both generally and at each company, are part of this. In our common management system for HSE, quality and the external environment, Landax, managers can find support for their systematic improvement efforts. Here the guidelines, requirements and policies in the HSE area are consolidated. In addition, the system is used for the work on risk management, irregularities and improvement work.

Moelven strengthens employee knowledge through courses and information on our shared knowledge platform Workplace. Here we focus on sharing knowledge about challenges and good practices across companies.

HSE is 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. In the Safety Committee and Technical Forum for HSE, we work with relevant guidelines and group-wide HSE issues. Moelven 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.

## HSE roles

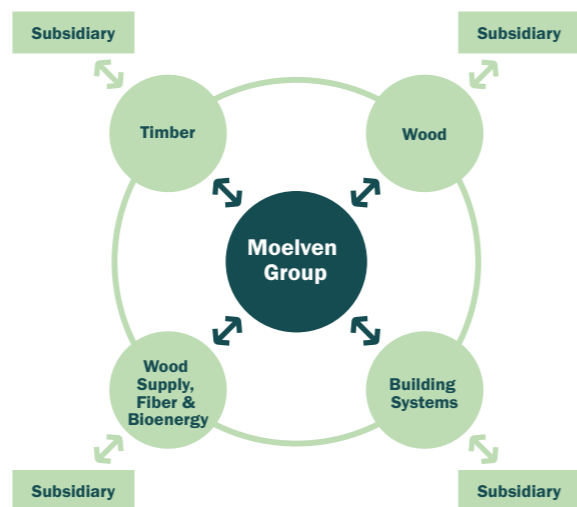
The HSE roles established and formalised in the companies have a dedicated responsibility to work on securing and safeguarding the work. Nevertheless, it is a shared responsibility among all Moelven employees to contribute to the success



of our HSE work. We have taken this responsibility through our active leadership and active employee participation.

**Risk assessments**

Risk assessments constitute the foundation of a safe and secure working environment and set out the premises for the need for training, procedures, working methods and various safety measures. Strengthened work on risk assessment and risk reduction has therefore been a priority for a long time. Risks have been mapped and assessed in all departments and this has been done with the involvement of employees and safety representatives. The risks are documented and assessed in Landax. This commitment to risk reduction has been highlighted through requirements for action plans and new, repeated assessments to ensure that the selected measures have provided the desired effect. All risk assessments classified as red have been reviewed by local company boards for accountability and prioritisation of measures. The work on risk management is continuous work that aims to create a safer workday for our employees, step by step.

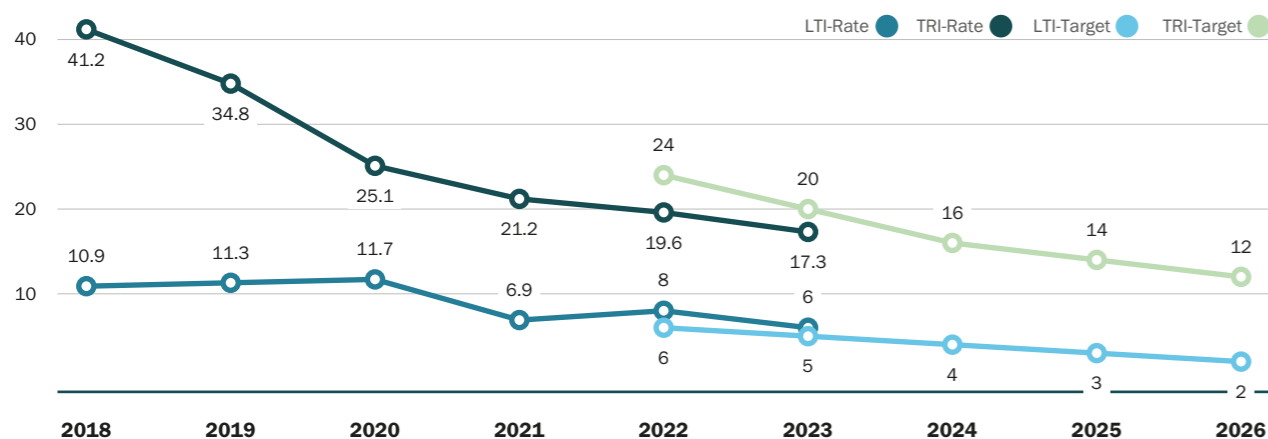


HSE professional forum  
Weekly coordination meetings

**HSE courses**

Moelven's employees Moelven are given basic knowledge about HSE through our own courses. The courses are adapted to individual roles and set the standard for how things should be at Moelven. The courses were rolled out in the autumn of 2022 and are taken annually by all employees. This helps to enhance knowledge about HSE in general.

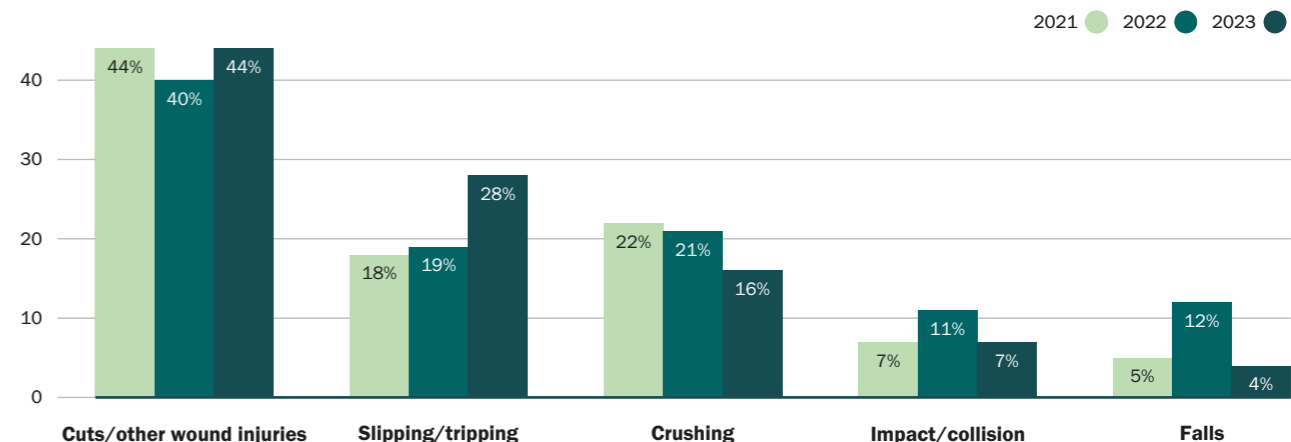
**Development in number of injuries, 2018-2023**



**LTI rate** - Injuries resulting in absence per million hours worked. The LTI rate in 2023 was 6.0. The target was 5.

**TRI rate** - Number of injuries resulting and not resulting in absence per million hours worked. The TRI rate in 2023 was 17.3. The target was <20.

**Cause of injury 2021-2023**



**Learning through internal audits**

In recent years, Moelven's internal auditors have audited several HSE topics such as guidelines, technical equipment and HSE procedures. This is part of the continuous improvement work. Internal audits contribute to a better overview of the business processes and control mechanisms, leading to greater confidence that rules and policies are adhered to. In addition, audits can help uncover inefficiencies or weaknesses in the business processes, which companies in turn can use in their improvement work.

The findings from the audits are also used as input for Moelven's overall improvement work. Good practices and proposals for solutions are shared across companies.

**Incident investigation**

Learning across companies and between employees is an important part of ensuring that all employees arrive home in one piece. Moelven investigates incidents as a tool to examine safety barriers and root causes of serious incidents. Investigations result in a report assessing barriers and proposals for improvement measures for the company in question. We also prepare learning sheets where the incident and preventive measures are described.

The learning sheets are intended to create knowledge about incidents, awareness of risk in one's own daily work and specific actions the individual can take to prevent similar events from happening in their own unit.

The investigation of incidents and preparation of learning sheets is an established methodology for highlighting risks and learning from incidents across the Group.

The companies themselves conduct root cause analyses for all injuries and other circumstances with a high potential for harm. 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.

**Evaluation of results**

**Injury statistics**

In recent years, Moelven has taken major steps forward to ensure a safe and good working environment for its employees. The measures implemented to prevent adverse events have been numerous in recent years. Increased focus through knowledge, systematic improvement work and clear requirements has yielded results.

The decline in the LTI2 rate from 2021 to 2022 was approximately 7.5 per cent, while the reduction from 2022 to 2023 was around 8 per cent. We are therefore on a steady decline in the number of injuries per hour of production.

Unfortunately, some of the injury figures are somewhat higher than our goals. In 2022, the goal was to achieve LTI <6, while the result was 8. For 2023, LTI ended at 6, while the target was 5.

However, the LTI2 figures are below the target; 19.6 compared to a target of 24 for 2022 and 17.3 compared to 20 for 2023. This means that too many of our injuries were of such a nature that they resulted in absence.

However, it is pleasing that we are seeing a downward trend in our injury statistics. Although we managed to achieve our goal for LTI2, an injury in Moelven is always one injury too many. We have a zero vision and our goal is for everyone to arrive home in one piece from every working day at Moelven.



**Reporting frequency**

In order to reduce the number of injuries, it is critical that we do something about the hazardous conditions and near misses that are reported. A high reporting frequency is evidence of the risks employees uncover during everyday work. An increase in the reporting of near misses and hazardous conditions is therefore linked to a reduction in injuries. It is thus important that we motivate reporting and ensure feedback to the reporter. This is done through management courses, training in the use of Landax and structured meeting points in the departments.

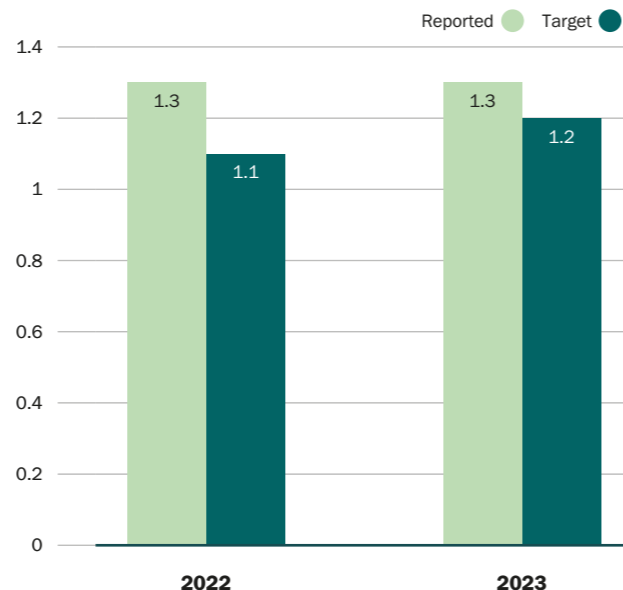
Reporting of hazardous conditions and near misses is an important area for Moelven and we have targets for the number of reports. In 2022, the target was 1,1 reports per employee per year. In 2022, employees in Moelven submitted 1.3 reports per employee/year.

For 2023, the target was 1.2, and with a result of 1.3 we have exceeded the target.

All incidents and hazardous conditions are recorded in our common reporting system. Reasons, measures and responsibilities are documented and provide a good overview of the types of injuries, severity and possible causes. In 2023, most of our injuries were cuts and wounds caused by various types of small tools. On this basis, we have initiated several measures to make the workday safer. Analysis of trends in our reporting system allows us to implement measures in the areas where we see the greatest potential for injury and/or the greatest injury rate.

Our reporting system provides us with a good overview of trends, who is affected, possible causes and injury category.

The illustration below shows the cause of injury for reported injuries, near misses and first aid cases and shows the percentage of total reported injuries. Injuries can be reported with several types of injury per incident.



**Absence due to illness**

Absence due to illness in 2023 was 6.8 per cent, of which 3.4 per cent was long-term absence.

In the work with HSE towards 2025, presence is a focus area, where Moelven is working to increase presence. In this regard, we have prepared a toolbox to help supervisors. Examples of tools are a presence poster, an overview of adaptation opportunities, clarification of rights and duties for managers and employees and mental health courses. We have

also chosen to focus on developing our managers so that they are better equipped to follow up their employees. The work to reduce sick leave is an ongoing effort and will remain in focus going forward.

In 2023, an employee survey was carried out at all Moelven companies and measures are being worked on at both the company and group levels. The results of the survey for the Group show an improvement in several areas.

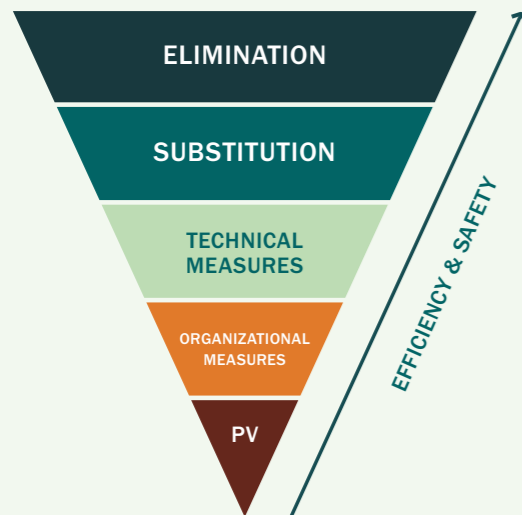
HSE focus areas	2023 Target	2023 Result	2024 Target
LTI rate	Less than 5	6.0	Under 4
TRI rate	Less than 20	17.3	Under 16
Number of registered incidents	1.2 report per employee/year	1.3 per employee/year	1.2 per employee/year
Absence due to illness	4.0%	6.8%	4.0%

*An increase in the reporting of near-accidents and hazardous conditions is linked to a reduction in the number of injuries. It is therefore crucial that we continue encouraging reporting and ensure that those who submit reports receive feedback.*





# 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 processing rate 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. The main EU regulations applicable to Moelven's products are:

- CPR - "Construction Products Regulations".
- REACH - "Registration, Evaluation, Authorisation and Restriction of Chemicals" (REACH).
- BPR - "Biocidal Products Regulations".

In both Norway and Sweden, legislation requires businesses using chemicals to assess the need for the chemicals used and whether it is possible to replace them with less hazardous substances. In addition, there are several regulations related to labelling, storage, etc.

Moelven continuously works to ensure that relevant regulatory requirements are incorporated into applicable

procedures and that all products Moelven manufactures comply with the requirements of directives, statutes and regulations. The handling of chemicals in the production processes is included as an item during risk reviews and HSE audits at the units. In 2022, campaigns, training and audits were prepared for chemical handling that will be carried out in 2023. 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:

- **CLP labelling and safety documentation of all chemicals used.**
- **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.
- **Prioritising eco-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. The changes in the amount consumed from 2022 to 2023 are due to variations in production volumes and utilisation rates.



## 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

- Continuous 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.
- Internal audits focused on chemical handling were conducted in 2023.

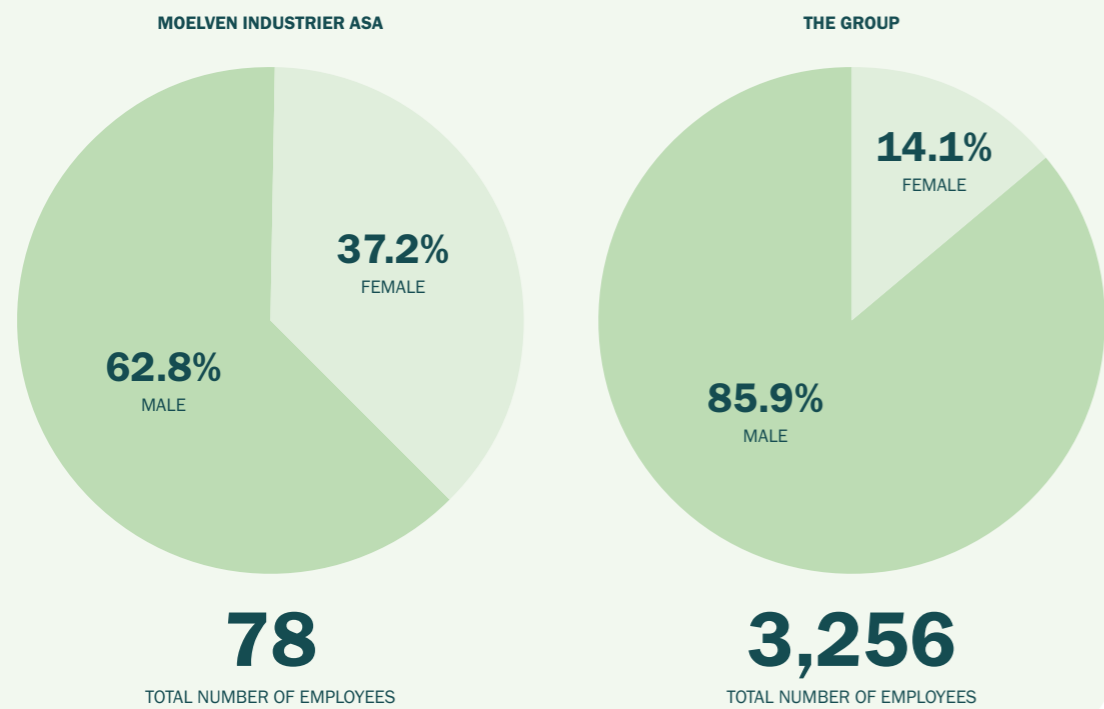


Name	Description	2023	2022	2021
<b>Impregnating fluid (litres)</b>	<b>Area of application:</b> Provides resistance to moisture, rot and fungus attacks and increases a product's service life.	842,414 (Cu)	1,176,288 (Cu)	1,151,778 (Cu)
	<b>Potential health impacts:</b> Moelven's Cu-impregnated products contain the element copper (Cu). Besides this, the products contain no heavy metals.  Moelven also supplies glulam based on TMF-impregnated materials. The impregnation fluid does not contain heavy metals and consists of biodegradable antifungals. No negative health impacts have been identified when the pressure-impregnated products supplied by Moelven are used properly.	19,000 (TMF)	18,850 (TMF)	20,650 (TMF)
<b>Paint, primer and stain (litres)</b>	<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.  <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.	1,190,886	1,233,165	1,624,254
<b>Fire impregnation (litres)</b>	<b>Area of application:</b> Moelven's unique Fireguard impregnation provides resistance and passive protection against fire and is used for both interior and exterior products.  <b>Potential health impacts:</b> The product has been shown to be an environmentally friendly impregnation agent, it meets the requirements of the EU Construction Products Directive and waste can be handled as ordinary treated wood. No hazardous chemicals are emitted during use or in the event of fire.	200,000	260,000	200,000

Name	Description	2023	2022	2021
<b>Glue (kg)</b>	<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.  <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 health impacts for the user when used properly.	6,404,249	6,430,642	6,654,604
<b>Royal impregnation (litres)</b>	<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.  <b>Potential health impacts:</b> The "royal treatment" involves drying Cu-impregnated products, and then '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.	62,731	48,433	45,992
<b>Osmo (litres)</b>	<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.  <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.	3,983	5,088	10,538



# Diversity and equality at Moelven



At Moelven we 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.

Moelven’s Code of Conduct states that we will have an inclusive work culture and actively work to ensure a positive working environment characterised by equality and diversity. In this, our culture and the support for our work are essential in order to succeed. 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.

Reporting procedures have been established that enable all employees and external parties to anonymously report any violations of laws, regulations, intragroup guidelines or other misconduct.

An important measure for monitoring the work on diversity and gender equality is the anonymous employee survey that all Group companies conduct each year.

The employee survey was conducted for the third time at all

units in the Group.

The response rate increased to 88 per cent, from 80 per cent in 2022 and 74 per cent in 2021. The increase in support for the survey is in itself an indication that the development of the work culture and work environment is moving in the desired direction.

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. In 2024, an evaluation of the employee survey will be carried out as Moelven as a group has conducted it over the last three years, in order to optimise the methods we use to gain insight into how employees are doing at work.

Legislation in Norway and Sweden requires companies of a certain size to conduct salary surveys focusing on salary 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 tables on the next page show the results from the survey conducted in 2023 for the Group’s parent company, Moelven Industrier ASA:

Gender representation in the company	Female			Male			Total		
	2023	2022	2021	2023	2022	2021	2023	2022	2021
Members of the Board of Directors	2	2	2	5	5	5	7	7	7
Employees	29	31	35	49	44	45	78	75	80
Temporary employees	2	3	5	2	6	12	4	9	17
Part-time employees	2	2	3	4	4	5	6	6	8
Percentage	37.2%	41.3%	43.8%	62.8%	58.7%	56.3%	100%	100%	100%
Absence due to illness	3.12%	3.13%	3.14%	1.84%	0.79%	3.35%	4.96%	-	-
Absence due to children’s illness (days)	18	5	9	11	18	2	29	23	11
Parental leave (days)	35,2	246	129	0	87	60	35,2	333	189

Women’s pay as a proportion of men’s pay (by role level)	2023	2022	2021
1 - Group Executive Board	1)	1)	1)
2 - CEO staff/support	2)	2)	-
3 - Middle managers with HR responsibility	2)	2)	2)
4 - Middle managers with professional responsibility	105%	92%	92%
5 - Salaried employees	89%	2)	2)
6 - Operations	96%	2)	2)
7 - Trainees/apprentices	107%	106%	106%

1) Cf. Note 26.3 in the Group’s annual report  
2) Information exempt from public disclosure for reasons of privacy

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.

Percentage of women by role level	2023	2022	2021
1 - Group Executive Board	33%	33%	25%
2 - CEO staff/support	0%	0%	0%
3 - Middle managers with HR responsibility	20%	20%	20%
4 - Middle managers with professional responsibility	35%	48%	48%
5 - Salaried employees	62%	50%	50%
6 - Operations	33%	80%	80%
7 - Trainees/apprentices	50%	29%	29%



## The ‘Girls’ Night Out’ in Torsby resulted in a record number of applicants

When Moelven Notnäs Ransby AB held a girls’ night out in May 2023, there were 180 women who wanted to hear more about what it’s like to work with us. Moelven is one of the largest employers in Torsby, but most of the employees are men. With the girls’ night out, we hoped to inspire more women to want to work at Moelven in the future.

Later that week when we announced vacancies for forklift operators, there were a record number of female applicants, resulting in a female forklift operator and a female operator. This autumn, we also hired one of the visitors from the girls’ night out in the role of market administrator at Moelven Notnäs Ransby AB.



The project group behind the girls’ night out was hoping for an attendance of more than 10 people. They were shocked when 180 women wanted to hear more about what it’s like to work in Moelven.

”

*“In the past, we’ve barely had any female applicants for forklift operator positions, but this time nearly 30 percent of the applicants were women. It is a direct result of the successful girls’ night out.”*

**Peter Broberg**, CEO, Moelven Notnäs Ransby AB

Newly hired operator Cajsa Hedlund, forklift operator Karolina Bergsman and former forklift operator Matilda Olsson.



Terje Melheim is the Employee & Management Development Manager at Moelven. Active leadership enables employees to assume responsibility, become engaged and contribute towards development.

## Leadership encourages active employee participation

2023 was the year Moelven’s internal leadership development really took off. More than 120 Moelven managers have now completed the basic management module. Over three two-day sessions, work in groups and the involvement of own employees in development, the basic module has a scope of 80-100 hours for the participants. Self-awareness, self-management and managing others are the main elements of the basic module.

Managerial development follows some important principles. All content is owned by Moelven, although external partners have contributed supplementary expertise during development and with capacity in implementation. When we meet, it’s to train – because the time we have together is valuable. In order to achieve an effect from the measures, groups are organised in all modules for work and training between the gatherings, and own manager and employees are integrated as part of the development.

The manager’s superior follows a separate module where the focus is on how to assist his manager in setting relevant goals and how to follow up along the way. Focus is on coaching leadership and on how to challenge and support by asking forceful questions. More than 50 managers have participated in

the module designed for the purpose.

240 managers have participated in the Manager Communication module. This is a digital module based on podcast episodes, meetings with learning partners and digital training meetings. Managers and technical advisers who train their communication skills are important for active employee participation where access to information and open conversations is good.

In the spring of 2024, the HSE Management module for general managers will be rolled out in the organisation, and other new modules will be developed that will become a part of Moelven’s management development programme throughout the spring and autumn of 2024.

The goal of management in Moelven is to trigger employee participation. Moelven’s active employee participation is about how everyone takes responsibility, contributes with commitment and develops themselves and the company.

Active employee participation is how we at Moelven bring our values to life. The values come to life in all the small and big choices each and every Moelven makes every day. In Moelven, it is the people who make the difference. Active leadership triggers employee participation.



# Taking responsibility together with SOS Children's Villages

For the second year in a row, Moelven is supporting SOS Children's Villages with a fixed 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.

In 2023, Moelven organised a gingerbread house campaign for Moelven's employees, for the benefit of SOS Children's Villages. The gingerbread houses symbolise the important work SOS Children's Villages do to strengthen local communities, including education and assistance for parents, so that children in vulnerable families can remain living at home.

## Important supporter for children and young people around the world

"Supporters like Moelven have an incredible impact on the work we do for children and young people around the world. The annual support is an important contribution to our initiatives where the needs are greatest, and where face the worst conditions," says General Secretary Sissel Aarak of SOS Children's Villages.







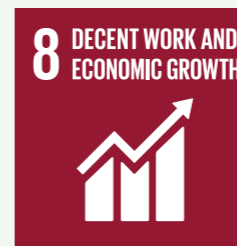
# Local values

## AMBITION

We will contribute to local value creation.



In September 2023, the team leaders Mari Slaatsveen, Hege Sagstuen Larsen and Stine Therese Hagen (below), together with the rest of the employees at Moelven Byggmodul AS, could celebrate module number 100,000 leaving the factory.





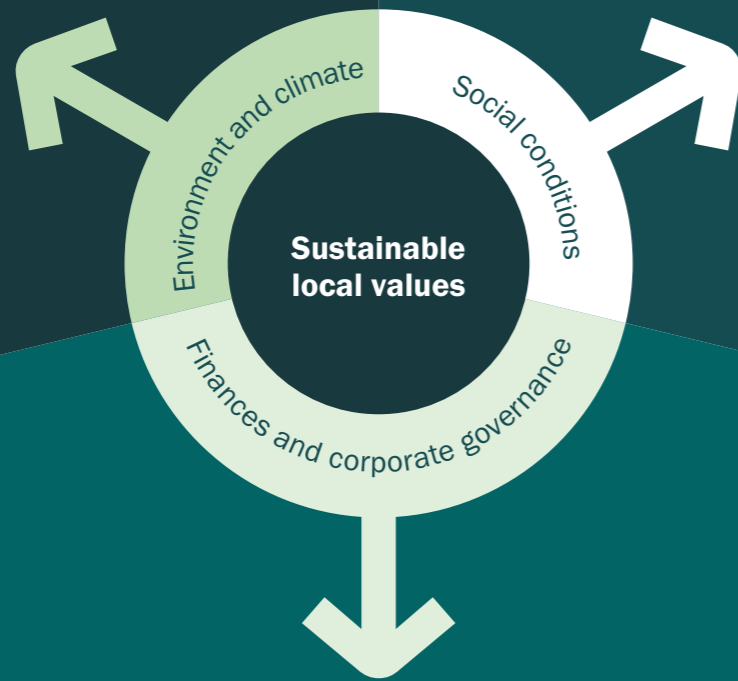
PRIORITY AREA

# Local values

Continuous improvements and collaborations with the local community to reduce Moelven's local environmental footprint.



Safe and secure jobs and the payment of taxes and fees contribute to the welfare society.



Reliable, transparent and ethical development and operation of Moelven's activities contributes to economic growth with ripple effects in the local community.



Glulam is a popular and natural choice for agricultural buildings. Moelven supplies climate-friendly solutions with a short production time for machine halls, barns, cowsheds, stables, paddocks, tool houses, garages and workshops.



# 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 good and reliable reputation is essential for our business activities and must ensure credibility towards our customers, suppliers, lenders and other stakeholders. It also contributes 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 we must always maintain a healthy ethical and moral profile in relation to associates, customers, suppliers and other business associates. This means 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 responsible 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.

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 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 concerns 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.

## 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.

## 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 reports of discrimination or abusive treatment of employees.
- No reported instances of corruption or price fixing.
- One uncovered case of negative influence in the supply chain. In cooperation with the supplier in question, measures have been implemented that have remedied the matter.

## 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.

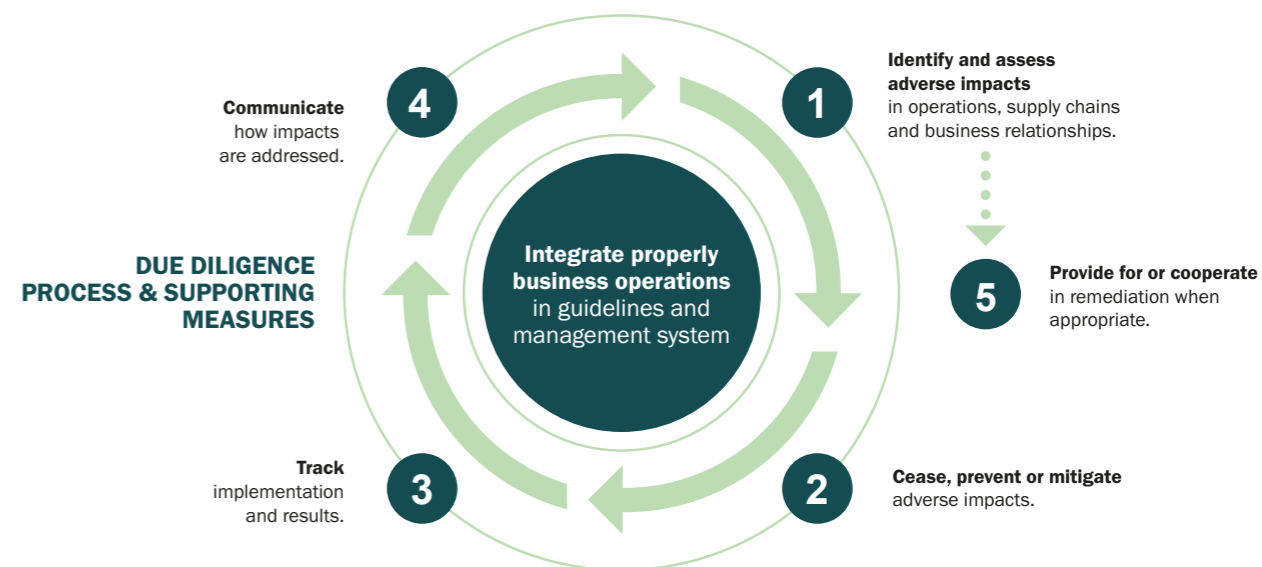
Human rights:

# The Transparency Act and responsibility in the supply chain

The Transparency Act, which entered into force in Norway on 1 July 2022, requires businesses to identify risks of breaches of basic human rights and decent working conditions in their supply chains. Moelven does not accept conditions at suppliers’ or customers’ operations that constitute such breaches or other unethical conditions. Moelven bases its work for accountability

and transparency in the supply chain on the OECD’s Due Diligence Guidance for Responsible Business Conduct.

Centrally, procedures and tools are provided to for compliance with the requirements of the Transparency Act to those suppliers that are not already covered by existing control routines.



## THE OPENNESS ACT

Moelven’s statements in accordance with the Openness Act can be found by scanning the QR code, or by visiting our website: [www.moelven.no/apenhetsloven](http://www.moelven.no/apenhetsloven).



## GDPR

Moelven has shared procedures in place concerning the processing of personal data. The procedures apply to all employees and others who perform work or services on behalf of Moelven. Anyone who is employed or handles personal data at Moelven has an individual responsibility and obligation to ensure that the data is processed in accordance with applicable routines and regulations. The regulations are relatively comprehensive, so guides have been produced for selected areas. Data protection officers have also been appointed at corporate, divisional, and company levels, as has a corporate-level expert privacy group. More information is available by scanning the QR code.



## REPORTING

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 whistleblowing matter may also be reported directly to the Group’s Whistleblowing Ombudsman via e-mail to [varsling@moelven.com](mailto:varsling@moelven.com) or via the QR code.



# Local environment

## Where and why is it important?

Moelven has a total of 26 incineration 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 defined as renewable bioenergy, because it is part of a far shorter carbon cycle than energy from fossil energy sources. Moelven covers more than three quarters of its energy requirements for industrial activities using self-produced, renewable bioenergy. Bioenergy production does impact the local environment through, among other things, emissions of particulate matter, NOx, SOx and CO.

Moelven also affects the local environment through e.g. goods transport to and from our industrial sites and noise from our facilities.

In addition, significant amounts of water are used for irrigation of timber to prevent it from drying out and being 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

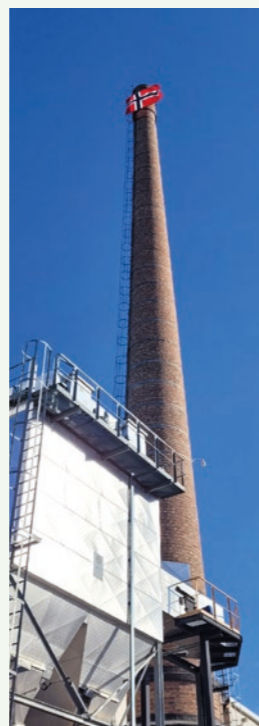
Moelven must be a natural part of the local community where our businesses are located. We will work to reduce local environmental impact through focus on continuous improvement, and we will contribute to economic value creation. Compliance with environmental and pollution laws, local regulations and permits is a matter of course.

## Evaluation of results

Moelven's bioenergy plants vary in size from 1 to 15 MW, with an average of around 8.5 MW. These combustion systems mainly use residual raw materials such as bark and various chip fractions from the timber processing industry 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

## How does treatment of emissions from a modern heating plant take place?



"Langmo-pipa" is a landmark in Brumunddal. The 60-metre-high factory pipe was built for Berger Langmoen AS in the mid-1940s, and is currently part of Moelven Bioenergi AS's bioenergy plant. Today, the flue gas undergoes several purification processes before it is released into the open air. The extension to the left in the picture is the electrical filter. This is the final part of the process. High voltage is used to give dust particles a negative charge so that they can be collected using positively charged collection electrodes.

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.

Incinerator plants	2023	2022	2021
Bioenergy plant - total installed capacity [MW]	179	180	173
Average capacity per plant (boiler 1 + boiler 2) [MW]	9	8	8
Number of boilers reported	26	28	27

### AMBITIONS

- Minimise emissions of dust, NOx, SOx and CO.

### RESULTS

- No recorded breaches of the Pollution Control Act or similar legislation in 2023 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.
- Ongoing assessment of the need for improvement and upgrading of the heating plant to meet upcoming statutory requirements.



# 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 34 legal entities across 40 production sites in Norway and Sweden. Most production companies are located in rural areas in close proximity to the forest and forestry industries, where they are often important cornerstone companies. Moelven wants to make local purchases where we can, and help create local work opportunities and vibrant local communities

Organising companies as legal entities creates ripple effects in the local economy. This takes place 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

In 2023, the Moelven Group had a total operating profit of NOK 381 million. The total value creation for the Group in 2023 was NOK 4,889 million, with NOK 2,313 million for the Norwegian businesses and NOK 2,575 million for the Swedish businesses.

The data used to calculate Moelven's tax and duties contributions in Norway and Sweden is the accounting data from Moelven's Norwegian and Swedish companies. As 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 the secondary and tertiary effects (ripple effects) due to employees and subcontractors also contributing to economic activity in the local community. The calculated tax contribution is therefore a sober estimate for the overall contribution to society.

	Norway	Sweden	Group
Operating revenue	6,322	7,622	12,936
Value creation	2,313	2,575	4,889
Number of employees	1,592	1,650	3,256
Corporate tax*	3	65	69
Total paid Employer's National Insurance Contributions	147	260	407
Tax paid on wages	299	233	532
Public subsidies	1	23	23
<b>Tax contribution</b>	<b>449</b>	<b>580</b>	<b>1,031</b>

\* Tax payable based on profit for the year

### AMBITIONS

- We will contribute to local value creation

### RESULTS

- Estimated tax contribution of NOK 1,031 million in 2022.

### MEASURES

- Strategic planning for the robust development of a decentralised industrial structure.



## 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 20,800 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.

### WE SUPPORT



#### Human rights

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

#### Labour

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

#### Environment

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

#### Anticorruption

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

## CDP and EcoVadis

Moelven reports to CDP and EcoVadis. Both of these are international evaluation schemes used to identify and evaluate the status of companies in relation to various areas, taking into account social sustainability, climate and environmental impact and corporate governance.



# Key figures for the last 5 years

Amounts in NOK millions	2023	2022	2021	2020	2019
<b>THE GROUP</b>					
Operating revenue	12,936	14,439	14,872	11,665	10,297
EBITDA	708	2,106	3,389	1,011	630
Depreciation	324	331	351	344	296
Impairment	3	18	52	4	-2
Operating profit	381	1,756	2,986	662	335
Financial items	-52	-3	5	-59	-96
Result before tax	329	1,754	2,991	604	240
Total capital	7,710	7,904	8,269	5,833	5,518
Equity in per cent	58.2	59.9	55.5	49.1	42.9
Operating margin in per cent	2.9	12.2	20.1	5.7	3.3
Investments	1,085	501	420	272	479
Number of employees	3,256	3,332	3,312	3,391	3,399
<b>TIMBER</b>					
Operating revenue	4,075	4,944	5,046	3,445	3,119
EBITDA	265	1,239	1,794	366	243
Depreciation	106	106	103	103	97
Impairment	-	-	-	4	-
Operating profit	159	1,132	1,691	259	146
Financial items	16	1	-9	1	-5
Result before tax	175	1,133	1,682	260	141
Total capital	2,497	2,907	3,079	1,743	1,513
Operating margin in per cent	3.9	22.9	33.5	7.5	4.7
Investments	289	177	194	88	116
Number of employees	664	653	630	636	629
<b>WOOD</b>					
Operating revenue	4,757	5,528	6,164	4,730	4,018
EBITDA	197	757	1,504	482	265
Depreciation	117	112	117	111	102
Impairment	-	0	3	-	-2
Operating profit	80	645	1,384	372	165
Financial items	-16	13	-20	-19	-29
Result before tax	64	658	1,364	353	136
Total capital	3,908	3,392	3,866	2,802	2,514
Operating margin in per cent	1.7	11.7	22.5	7.9	4.1
Investments	514	234	155	130	117
Number of employees	1,078	1,084	1,108	1,099	1,114
<b>BUILDING SYSTEMS</b>					
Operating revenue	3,570	3,833	3,913	3,347	3,003
EBITDA	236	84	160	166	135
Depreciation	64	69	140	90	78
Impairment	3	-	49	-	-
Operating profit	172	15	19	76	57
Financial items	8	-2	4	-5	-4
Result before tax	179	13	23	71	53
Total capital	1,795	1,775	1,694	1,909	1,751
Operating margin in per cent	4.8	0.4	0.5	2.3	1.9
Investments	65	36	54	22	56
Number of employees	1,310	1,408	1,383	1,490	1,494
<b>OTHER ACTIVITIES</b>					
Operating revenue	5,484	4,741	4,553	3,802	3,728
EBITDA	5	-31	-6	-4	-14
Depreciation	40	43	41	41	19
Impairment	-	18	-	-	-
Operating profit	-35	-93	-47	-45	-32
Financial items	-60	-14	31	-36	-58
Result before tax	-95	-107	-16	-81	-90
Investments	219	54	18	32	190
Number of employees	204	187	191	166	162



# Restatements of information

Chapter of the Sustainability Report 2023	Page	Original text/data in the Sustainability Report 2022	Corrections in the Sustainability Report 2023	Cause
Climate accounts	18	2022 and 2021 data	2022 and 2021 data	Correction of errors uncovered in 2023. Improved source data and emission factors. Changed system delimitation.
Carbon storage and bioenergy	36	2022 data	2022 data	Correction of errors uncovered in 2023.
Transport of goods	46	2022 data	2022 data	Changed system delimitation and correction of errors uncovered in 2023.
Energy consumption in our own production	49	2022 and 2021 data	2022 and 2021 data	Correction of errors uncovered in 2023.
Production of bioenergy	50	2022 and 2021 data	2022 and 2021 data	Correction of errors uncovered in 2023.
Water consumption	62	2022 data	2022 data	Correction of errors uncovered in 2023.







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Til styret i Moelven Industrier ASA

## Uavhengig revisors attestasjonsuttalelse om Moelven Industrier ASAs Klimaregnskap 2023

### Konklusjon

Vi har utført et attestasjonsoppdrag for å oppnå moderat sikkerhet for at Moelven Industrier ASAs («selskapet») klimaregnskap inkludert i selskapets bærekraftsrapport i kapittel for Klimaregnskap («Rapporten») for året som ble avsluttet 31. desember 2023, i alt det vesentligste er utarbeidet i samsvar med Greenhouse Gas (GHG) Protokollen.

Basert på utførte handlinger og innhentet bevis, som beskrevet under avsnittet Utførte handlinger, er vi ikke blitt oppmerksomme på noe som gir oss grunn til å tro at Rapporten ikke i alt det vesentlige er utarbeidet i samsvar med Greenhouse Gas (GHG) Protokollen som forklart i kapittel for Klimaregnskap i Rapporten.

### Grunnlag for konklusjonen

Vi har gjennomført attestasjonsoppdraget i samsvar med Internasjonal attestasjonsstandard (ISAE) 3410 – «Attestasjonsoppdrag om klimagassrapporter», utgitt av International Auditing and Assurance Standards Board.. Våre oppgaver og plikter i henhold til standarden er beskrevet nedenfor under «Revisors oppgaver og plikter».

Vi er uavhengige av selskapet i samsvar med kravene i relevante lover og forskrifter i Norge og International Code of Ethics for Professional Accountants (inkludert internasjonale uavhengighetsstandarder) utstedt av International Ethics Standards Board for Accountants (IESBA-reglene), og vi har overholdt våre øvrige etiske forpliktelser i samsvar med disse kravene.

Vi anvender internasjonal standard for kvalitetsstyring (ISQM 1), *Kvalitetsstyring for revisjonsforetak som utfører revisjon og forenklet revisorkontroll av regnskaper samt andre attestasjonsoppdrag og beslektede tjenester*, og opprettholder et omfattende system for kvalitetskontroll inkludert dokumenterte retningslinjer og prosedyrer vedrørende etterlevelse av etiske krav, faglige standarder og gjeldende lovmessige og regulatoriske krav.

Innhentet bevis er etter vår vurdering tilstrekkelig og hensiktsmessig som grunnlag for vår konklusjon.

### Ledelsens ansvar for bærekraftsrapporten

Styret og daglig leder («ledelsen») er ansvarlig for utarbeidelsen av Rapporten, og for informasjonen i den, i samsvar med Greenhouse Gas (GHG) Protokollen som forklart i kapittel for Klimaregnskap i Rapporten.

Ledelsen er også ansvarlig for slik internkontroll som den finner nødvendig for å kunne utarbeide en Rapport som ikke inneholder vesentlig feilinformasjon, verken som følge av misligheter eller utilsiktede feil. Videre er ledelsen ansvarlig for å forhindre og avdekke misligheter, samt for å identifisere og sikre at selskapet overholder de lover og forskrifter som er relevante for selskapets aktiviteter.

### Iboende begrensninger

Det foreligger en generell mulighet for at det oppstår feil og mangler som ikke avdekkes av internkontrollen knyttet til utarbeidelsen av Rapporten. Vårt attestasjonsoppdrag er ikke utformet for å avdekke alle svakheter i denne internkontrollen. Våre handlinger er utført på utvalgte deler av dokumentasjonen som ligger til grunn for Rapporten og handlingene er ikke utført gjennom hele rapporteringsperioden.

### Revisors oppgaver og plikter

Vår oppgave er å utføre et attestasjonsoppdrag som skal gi moderat sikkerhet, og avgi en konklusjon på grunnlag av de handlinger vi har utført.

Vårt ansvar er å:

- planlegge og utføre oppdraget for å oppnå moderat sikkerhet for at rapporten er uten vesentlig feilinformasjon, enten det skyldes misligheter eller feil.
- avgi en uavhengig konklusjon, basert på prosedyrene vi har utformet og bevisene vi har innhentet, og
- formidle vår konklusjon til styret i Moelven

Omfanget av vårt arbeid omfatter ikke framtidige hendelser eller selskapets overholdelse og oppnåelse av målsettinger og forventninger. Vårt arbeid omfatter heller ikke informasjon på nettsider som Rapporten refererer til, med mindre dette er spesifisert i denne attestasjonsuttalelsen.

### Utførte handlinger

Vi har utøvd profesjonelt skjønn og opprettholdt profesjonell skepsis gjennom oppdraget. Vi har utformet og utført våre handlinger for å innhente bevis som er tilstrekkelig og hensiktsmessig som grunnlag for vår konklusjon om klimaregnskapet presentert i selskapets bærekraftsrapport.

Et attestasjonsoppdrag som skal gi moderat sikkerhet innebærer forespørsler, hovedsakelig til personer som er ansvarlig for å utarbeide informasjonen i Rapporten, samt analytiske kontrollhandlinger og eventuelt andre handlinger. Valgte handlinger baseres på vår forståelse av Rapporten og andre omstendigheter ved oppdraget, samt hvor det etter vår vurdering, er risiko for at vesentlig feilinformasjon kan oppstå. Våre handlinger omfattet:

- Sammenlignet informasjonen i Rapporten mot de relevante kriterier i GHG Protokollen.
- En risikovurdering, inkludert et mediesøk, for å identifisere forhold som kan ha betydning for selskapet i rapporteringsperioden.
- Forespørsler til ledelsen for å opparbeide en forståelse av selskapets prosesser for å identifisere vesentlige usikkerhetsmomenter og metodikk i utarbeidelsen av Rapporten.
- Intervjuer av utvalgte ansatte, både på hovedkontoret og forretningsområder, som er ansvarlige for å fremskaffe informasjonen i klimaregnskapet.
- Gjennomgang av et begrenset utvalg av relevant intern og ekstern dokumentasjon for å vurdere påliteligheten av Rapporten.
- Sammenlignet informasjonen som er presentert i klimaregnskapet med tilsvarende informasjon i relevante underliggende kilder for å vurdere om all relevant informasjon i slike underliggende kilder er inkludert i Rapporten.

Handlingene som utføres på et attestasjonsoppdrag som skal gi moderat sikkerhet, varierer i type og tidspunkt fra, og er i mindre omfang enn, et attestasjonsoppdrag som skal gi betryggende sikkerhet. Følgelig er graden av sikkerhet som oppnås ved et attestasjonsoppdrag som skal gi moderat sikkerhet, betydelig lavere enn ved et attestasjonsoppdrag som skal gi betryggende sikkerhet.

Oslo, 22.03.24

KPMG AS

Stein Erik Lund  
Statsautorisert revisor

#### Offices in:

Oslo	Elverum	Mo i Rana	Tromsø
Alta	Finnsnes	Molde	Trondheim
Arendal	Hamar	Sandefjord	Tynset
Bergen	Haugesund	Stavanger	Ulsteinvik
Bodø	Knarvik	Stord	Ålesund
Drammen	Kristiansand	Straume	





2024

# Sustainability Policy

Sustainability has been at the core of Moelven's operations, ever since Moelven Brug AS was established at Anderkvern in Moelv in 1899. We may not have used that specific term, but we have always been committed to ensuring the best possible management of vital renewable resources.

Sustainability is a fully integrated aspect of our company strategy through our values, vision, mission, human resources strategy and policies. This means that we should make choices that help create long-term value for the company, while taking social considerations, the environment and the climate into account.

It is our aim to constantly deliver more sustainable projects, products and solutions. To succeed in this goal, all of Moelven Group's employees must commit to actively taking advantage of new opportunities to create competitive jobs and ensuring a

safe workplace which cares for and protects both people and the environment. Our aim is to contribute to where we meet the needs of today without harming future generations' opportunities to meet theirs.

Moelven has outlined four priority areas and one basic premise for sustainability. The latter is based on our Code of Conduct, which applies across the Group. Our four priority areas are related to five of the UN Sustainable Development Goals. Along with our Code of Conduct, this helps us to identify the most important aspects for long-term value creation at Moelven and for the world at large. This comprises the basis of our sustainability focus at Moelven.

<p><b>3</b> GOOD HEALTH AND WELL-BEING</p> <p><b>4</b> QUALITY EDUCATION</p>	<p><b>8</b> DECENT WORK AND ECONOMIC GROWTH</p>	<p><b>13</b> CLIMATE ACTION</p>	<p><b>15</b> LIFE ON LAND</p>
<p><b>People in focus</b></p> <p><b>Ambition</b> We will be an attractive and safe workplace</p>	<p><b>Local values</b></p> <p><b>Ambition</b> We will contribute to local value creation</p>	<p><b>Climate action throughout the value chain</b></p> <p><b>Ambition</b> Our activities, products and value chain will make a difference in our climate action efforts</p>	<p><b>Safeguarding natural resources</b></p> <p><b>Ambition</b> We will use renewable and sustainably managed resources, and utilise them in full</p>

We are a reliable partner





**Priority area**  
People in focus

**Ambition**  
We will be an attractive and safe workplace

**UN Sustainable Development Goal**

**Relevant sub-goal**  
**3.9** - By 2030, substantially reduce the number of deaths and illnesses from hazardous chemicals and air, water and soil pollution and contamination.

**4.4** - By 2030, substantially increase the number of youth and adults who have relevant skills, including technical and vocational skills, for employment, decent jobs and entrepreneurship.

**Moelven's policy**

- Moelven has a vision of zero workplace injuries, and believes that all injuries are preventable.
- All Moelven employees will participate in HSE training.
- Moelven will have active employees that take personal responsibility, develop their expertise and are committed to their day-to-day work.
- Moelven will have active managers who communicate and act in a trustworthy manner, focus on achieving results and facilitate innovation and development.



**Priority area**  
Local values

**Ambition**  
We will contribute to local value creation

**FUN Sustainable Development Goal**

**Relevant sub-goal**  
**8.2** - Achieve higher levels of economic productivity through diversification, technological upgrading and innovation, including through a focus on high-value added and labour-intensive sectors.

**8.8** - Protect labour rights and promote safe and secure working environments for all workers, including migrant workers, in particular women migrants, and those in precarious employment.

**Moelven's policy**

- Moelven will be a natural part of the local community and contribute to local economic value creation.
- Moelven will work actively to reduce its local environmental impact by focusing on continuous improvements.
- Moelven will 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.



**Priority area**  
Climate action throughout the value chain

**Ambition**  
Our activities, products and value chain will make a difference in our climate action efforts

**UN Sustainable Development Goal**

**Relevant sub-goal**  
**13.3** - Improve education, awareness-raising and human and institutional capacity on climate change mitigation, adaptation, impact reduction and early warning.

**Moelven's policy**

- Moelven will actively work to reduce its climate and environmental footprint.
- The environmental impact of the Group's logistics and transport operations will be minimised through coordination, optimization, and synchronization of the flow of goods. Environmental considerations shall be taken into account when choosing the mode of transport, and the Group's current objectives related to environmental standards shall be considered when selecting partners.
- Moelven will actively participate in technological innovations and market-oriented developments in the bioenergy sector, as well as investigate alternative sources of energy to replace the use of fossil fuels for heating at our plants.
- Moelven will have environmental assessments and certifications in place for its operations and products that meet current legal requirements at all times, along with meeting the requirements of recognised certification schemes within the markets that the Group operates in.
- Moelven will actively engage in sustainable procurement practices in order to reduce our environmental footprint throughout the value chain.



**Priority area**  
Safeguarding natural resources

**Ambition**  
We will use renewable and sustainably managed resources, and utilise them in full

**UN Sustainable Development Goal**

**Relevant sub-goal**  
**15.2** - Promote the implementation of sustainable management of all types of forests, halt deforestation, restore degraded forests and substantially increase afforestation and reforestation globally.

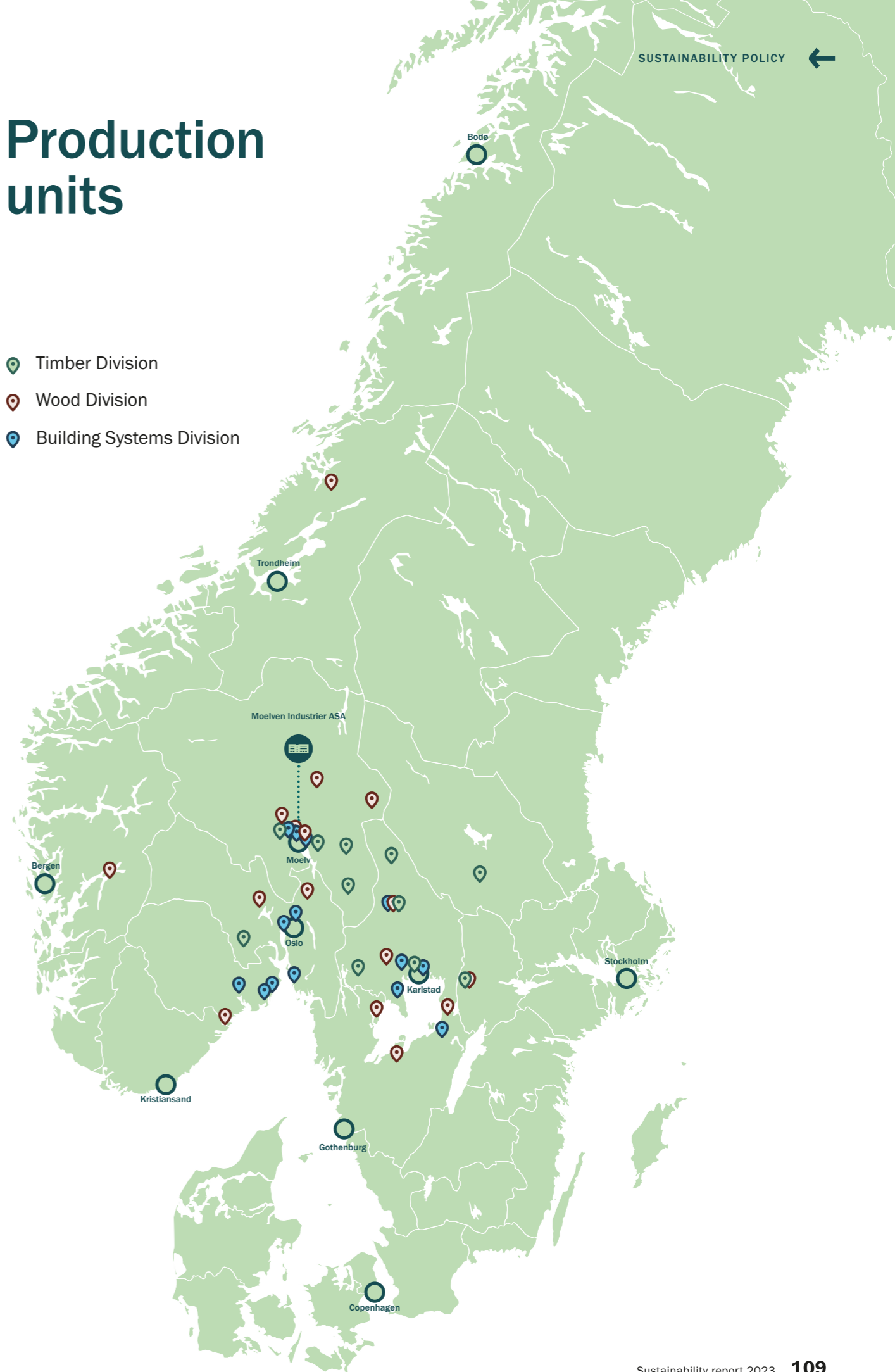
**Moelven's policy**

- Moelven will make use of all lumber components, including all by-products.
- Moelven will optimise its raw material utilisation to improve resource efficiency and to maximise the value of the raw materials used.
- As a minimum, all timber purchased by Moelven should be checked in accordance with applicable requirements for controlled wood set by recognised chain of custody standards (PEFC™ CoC and/or FSC® CoC). Moelven aims to have as much of its purchased timber as possible certified in accordance with recognised standards relating to sustainable forestry (PEFC and/or FSC®). At a minimum, this should correspond to the needs that arise from the Group's sale of certified finished products.
- Moelven will not be involved, directly or indirectly, in:
  - Unlawful logging or trade of wood or forestry products.
  - Destruction of areas with high preservation value during forestry operations.
  - Forestry involving violations of time-honoured rights or human rights.
  - Introduction of genetically modified organisms to our forestry operations.
  - Significant transformation of natural 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 will actively work to improve the resource efficiency of its products and assess the need for and the environmental consequences of packaging.
- Moelven will actively work to reduce waste and have a minimum sorting ratio of 90% for residual waste.
- Moelven will actively work to minimise the use of plastic, and strive to find alternative and sustainable materials to plastic.



# Production units

- 📍 Timber Division
- 📍 Wood Division
- 📍 Building Systems Division



## Basic premise

We are a reliable partner

### Moelven's policy

- -Moelven must be a company people can trust.
- -Moelven must always be aware of its stance on anti-corruption. This applies both in dealings with suppliers and customers at the corporate level, and in the individual business.
- -Moelven recognises that anti-corruption efforts is an important part of the company's strategy for long-term sustainable development.
- -Moelven's code of conduct applies to all of the Group's activities and must be observed by all employees and anyone else who represents the group in any way.
- -Moelven will work actively to ensure that the members of the Group's supply chain comply with the UN Declaration of Human Rights and other requirements set out in the Group's code of conduct.

Moelven is committed to publishing its results and progression towards this policy in its annual sustainability report.





Moelven strives to communicate actively and transparently with the market and to provide all interested parties with equal access to financial information. [www.moelven.no](http://www.moelven.no) includes performance reporting, financial status and information on the policies Moelven is governed by.

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



License codes for Moelven's multisite certificates from FSC®:



The mark of responsible forestry



The mark of responsible forestry

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Promoting Sustainable Forest Management  
[www.pefc.co.uk](http://www.pefc.co.uk)

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Viared Center in Borås is built with a strong focus on sustainability and the environment. Moelven has supplied glulam and façades for the project. Photo: Sören Håkanlind

