

The future is built with wood



Photo: Moelven

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We are building a sustainable future with wood

Moelven has a long history, and this year the company can look back on 120 years of operations.

IT ALL STARTED WITH cartwheels in 1899. Even then we were taking steps to ensure that they lasted for as long as possible by dipping them in boiling oil to preserve the wood. The cartwheels were then fitted with a steel rim, thus completing Moelven's very first development project. The word sustainability was not part of the vocabulary in those days, but the fundamental idea of using the natural resources extracted from forests to the fullest extent possible still applied.

The development gene and innovation are well embedded in the company's DNA. The rest of our story shows this clearly. Over the years, Moelven has manufactured products for ship cranes, agricultural equipment, military materiel, homes, wooden bridges, modules, office furniture and Olympic sports halls, as well as numerous other input factors for new buildings and renovation. This journey has been made possible thanks to our employees listening to customers, developing products and, not least, always looking to make the most of the opportunities that arise.

"Sustainable" is one of the company's core values. It has been for years because of our respect for people and the environment. At the same time, today, we understand that sustainability is crucial for our competitiveness. Moelven is experiencing high demand for our climate-smart products and solutions Moelven has a large industrial portfolio, but much of our



Photo: Moelven

CEO
Morten Kristiansen

business is based on managing timber from forests and creating new value from a renewable resource. In 2018, we pushed some boundaries by constructing the world's tallest wooden building. The Mjøsa Tower in Brumunddal, an iconic building that first and foremost proves what can be achieved with wood, is paving the way for new climate-smart solutions.

After 120 years, Moelven understands that times can change quickly, but one thing we can state with conviction about the years to come is that: we will contribute to a sustainable future with wood. ●



Design: Redink
Printer: Flisa Trykkeri AS

Sustainability

– the recurring theme from vision to strategy

MOELVEN IS one of Scandinavia's leading suppliers of quality products for the construction sector. Our business is primarily based on wood. Wood is a light, bright, usable, natural and, not least, 100 per cent renewable raw material. Wood also has the important property of absorbing and binding CO₂ while it grows. Construction materials made from wood retain the carbon they absorbed during their growth phase. Therefore, using wood from sustainable forestry as a construction material can help to reduce CO₂ levels in the atmosphere. With 120 years of history in which the use of wood as a raw material has been key, Moelven has built up a corporate culture that greatly respects the value and properties that wood and forests represent as resources. Sustainability is therefore one of our core values and has always been a fundamental principle as the Group has developed its business. Today, the Group's value chain includes felling, industrial timber processing, energy production, product development, infrastructure, and construction and housing projects. We are adamant that all development, construction and operations must be sustainable, throughout the entire supply chain, "inside the fences" of our own operations, and out to the market and end-user. Naturally, sustainability also includes people, both the Group's employees and others affected by our operations. We

believe ensuring that all of our employees have a safe working environment is very important. In an industry that has historically seen high injury rates, ensuring that our employees are not injured on the job is a top priority. The goals are zero injuries and making sure that all of our employees come "home in one piece".

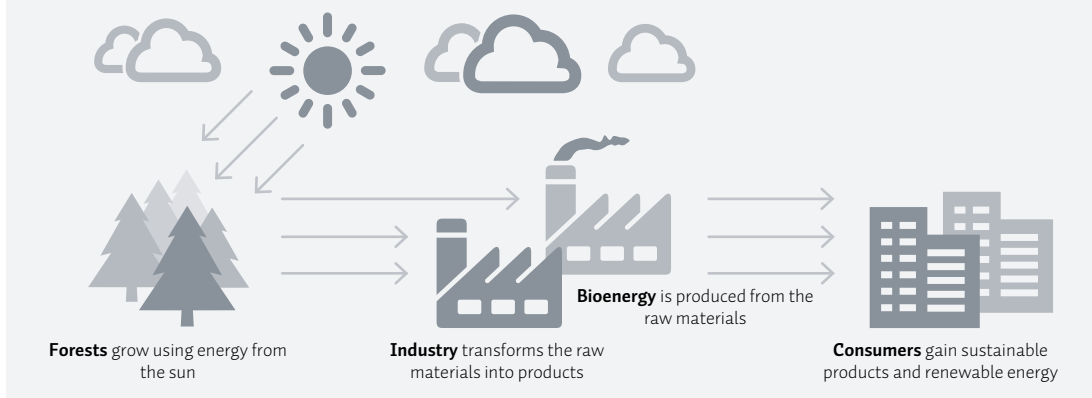
Moelven's vision, mission, values and personnel concept provide the foundations for all of our employees and the strategic choices that are taken:

- **Our vision** – The natural choice for people who want to build and live the Scandinavian way
- **Our mission** – Provide people with good spaces
- **Our values** – Sustainable, reliable, use opportunities
- **Our personnel concept** – Moelven provides opportunities for people with the drive to succeed

The emphasis on sustainability in all parts of the business and in all strategic initiatives has been made clear through the corporate strategy in recent years. A growing global market with ever-tightening environmental requirements provides excellent opportunities for future growth for Moelven's wood-based products, while giving our current and future employees a chance to help build a sustainable future with wood. ●

With 120 years of history in which the use of wood as a raw material has been key, Moelven has built up a corporate culture that greatly respects the value and properties that wood and forests represent as resources.

Sustainability throughout the value chain



Moelven's values

Sustainable

Moelven respects people and the environment. Our activities are based on renewable resources and turning sustainability and long-term thinking into competitive advantages. We are determined to take responsibility for our environment.

Reliable

Moelven can be trusted. We deliver at the agreed time and with the right quality. We focus heavily on transparency and honesty – being able to admit to weaknesses and mistakes provides a basis for progress and credibility.

Use opportunities

Moelven seeks solutions. The Group has the abilities and resources to be a leader in product development and creativity. We have always been a company at the forefront, using those opportunities that changing times afford.

Mission

Provide people with quality rooms

■ Since 1899, Moelven has produced cartwheels, barracks, ship cranes, agricultural equipment, homes, modules and numerous input factors for both new buildings and renovation. We can look back on a wide range of products and solutions, but one recurring feature is the use of wood in combination with engineering expertise, innovation and sustainability. But what do we see when we look ahead? What will we produce next year, in 5 years' time, or in 10 years' time? There are some products we are fairly certain we will still be producing in 10 years' time. We are just as certain that there are some products that will disappear and be replaced by new products. Products we are not familiar with today, but which will be important to us. In many ways, this is Moelven: We develop products ourselves and are driven by customers and partners who see new needs and new challenges. This is why we do not know what we will be producing in a few years' time.

■ What we can say is this: we want to help create good spaces – both indoors and outdoors. Good spaces are created through partnerships between customers, architects, designers and, not least, end-users. We will supply quality products that contribute to the creation of these spaces. Our market is primarily Scandinavia – it is here we source our raw materials and here we meet our customers. Moelven is not just wood – but wood is a key component in our production, in the same way that it is a key component of many Scandinavian traditions, including Scandinavian construction traditions. And, regardless of what we produce in 2019 or 2029, we want to help create good spaces.

■ This is the basis for our operations – it is our mission.

Moelven and the UN Sustainable Development Goals

The UN Sustainable Development Goals are a global plan to eradicate poverty, combat inequality and stop climate change by 2030.

SUSTAINABLE DEVELOPMENT IS ABOUT taking care of the needs of people living today without harming future generations' opportunities to meet theirs. The sustainable development goals reflect the three dimensions in sustainable development: climate and the environment, the economy and social factors.

Moelven wishes to contribute to a sustainable world,

and therefore uses the UN Sustainable Development Goals as a starting point. Moelven has identified the five most important sustainable development goals that are impacted, both positively and potentially negatively, by the Group's activities. These sustainable development goals help orient the work on sustainability in Moelven, while also placing it in a global context. ●

Climate action

"Take urgent action to combat climate change and its impacts."



Moelven can contribute to stopping climate change by reducing climate impacts and contributing to renewable bio-energy production. Moelven's wood products also store carbon and can help to increase the absorption of carbon from the atmosphere by forests.

Life on land

"Protect, restore and promote sustainable use of terrestrial ecosystems, sustainably manage forests..."



As a customer of the forestry industry, Moelven has a responsibility to promote sustainable forestry. Moelven achieves this through communication with the forest owners, as well as certification schemes such as PEFC™ and FSC® (1).

(1) FSC-C092806, FSC-C113012, FSC-C115128, FSC-C107974

Good health and well-being

"Ensure healthy lives and promote well-being for all at all ages."



Moelven has a responsibility to contribute to the safety and security of everyone affected by the Group's activities and products.

Quality education

"Ensure inclusive and equitable quality education and promote lifelong learning opportunities for all."



Training and education are important means of achieving this, while also being necessary for the sustainable further development of the Group.

Decent work and economic growth

"Promote sustained, inclusive and sustainable economic growth, full and productive employment and decent work for all."



Moelven helps to create economic growth and jobs through its operations. Moelven particularly contributes to local value creation through taxes, paying wages and buying from suppliers.

Our focus areas for sustainability

Focus on long term value creation

For Moelven, sustainability is not only about making the right choices for our surroundings, it is also about making choices that help to create long-term value for the company. Sustainability is thus a natural part of the company's strategy, through its vision, values and policies.

The timber is as old as we are

The company A/S Moelven Brug was established in 1899, and has been involved in long-term value creation for almost 120 years. Depending on species, growth conditions and site quality, a forest is ready for harvest after approximately 60-120 years. This means that some of the timber Moelven currently uses as a raw material is as old as the company itself. This is a good example of why long-term value forms a natural part of Moelven's activities.

We need to think of value creation holistically

Raw material from forests is Moelven's primary resource, but sustainability means far more than this to Moelven. It also concerns the climate, the people, the local communities, nature and the local environment. Sustainability is thus about creating long-term value through properly managing resources.

Goal of continuous improvement

Moelven takes responsibility for the environment through the sustainable and long-term utilisation of renewable resources. Our goal is continuous environmental improvement in our projects, products and services. We actively seek opportunities to reduce negative environmental impacts in a life cycle perspective. Moelven shall conduct its business in compliance with applicable statutes, regulations and rules. Moelven works for the sustainable development of society and to constantly improve the business's impact on the internal and external environment.

Four focus areas, one basic premise

In 2017, analyses were conducted to identify focus areas and long-term ambitions for sustainability. These are intended to ensure that we meet our stakeholders' expectations, are prepared for future requirements and demand, and can contribute to increased market shares and reduced costs. Moelven's sustainability strategy is based on four key focus areas and one basic premise (also see the illustration):

- ▶ We have climate-smart products and solutions
- ▶ We are safeguarding our natural resources
- ▶ We focus on people
- ▶ We create local value

Ethical business practices are the foundation of our corporate strategy; we are a reliable partner.

Systematic prioritisation

The analyses that form the basis for our choice of focus areas and important topics related to the focus areas were conducted in accordance with the Global Reporting Initiative's guidelines. They included assessments of environmental and social impact throughout the value chain, current and future stakeholder expectations, and market-related changes. The key focus areas have been chosen on the basis of what is important for long-term value creation in Moelven, and how the company affects and is affected by its stakeholders. Account has also been taken of where Moelven has the greatest positive and negative impact on our surroundings, while also emphasising those areas where Moelven has the greatest possible impact. On the basis of these assessments, the topics have been categorised as follows:



GLOBAL REPORTING INITIATIVE

The analyses that form the basis for our choice of focus areas and important topics related to the focus areas were conducted in accordance with the Global Reporting Initiative's guidelines.

For Moelven, sustainability is not only about making the right choices for our surroundings, it is also about making choices that help to create long-term value for the company.



Climate-smart products and services

AMBITION:

We and the materials we produce shall be climate positive



Safeguarding natural resources

AMBITION:

We shall use renewable resources and utilise the entire resource



Focus on people

AMBITION:

We shall be an attractive and safe workplace



Local value

AMBITION:

We shall create green workplaces



We are a reliable partner

UN Sustainable Development Goals

17 primary goals and 169 secondary goals were adopted by the UN General Assembly in September 2015. The goals are intended to act as a global road map for nations, business and civil society, and apply to all nations – both those that provide and those that receive development aid. The aim is, by 2030, to eradicate extreme poverty, ensure inclusive sustainable development and promote welfare, peace and justice for all.

Are the goals achievable?

The results from the work on the Millennium Goals in the lead up to 2015 proved that much can be achieved by working together towards common goals. The goals achieved included halving extreme poverty, halving the proportion of people without access to safe drinking water and fighting the spread of HIV/AIDS, malaria and other deadly diseases. However, achieving these goals does not mean that the problems have been resolved. These areas are still included as part of the Sustainable Development Goals.

In October 2018, BI Norwegian Business School and the Stockholm Resilience Centre published a report, “Transformation is Feasible”. The report concludes that the Sustainable Development Goals are achievable, but will, unsurprisingly, require drastic changes.

In addition to the Sustainable Development Goals, the Stockholm Resilience Centre’s analyses took account of another important factor – the fact that the planet’s tolerance limits are finite. In order to achieve the Sustainable Development Goals and create lasting improvements, we will have to use new technology and knowledge in a manner that ensures ecosystems are not destroyed.

Sustainability work in Moelven

The sustainability work at Moelven is based on materiality. Those areas that are most important for both Moelven and our surroundings, and where we also can make a difference, have the highest priority. These areas have been identified by linking the Sustainable Development Goals to the Group’s strategy. Our activities provide us with a unique opportunity to play a role in the work on stopping climate change and safeguarding the environment. Our value chain stretches from the sowing of a seed, right up to, in some cases, the wood becoming a component in a building. Moelven’s job is to make this process as climate-smart as possible and safeguard the renewable resource forests represent in the best possible manner.

The 2 degrees Celsius target and Moelven

The countries participating in the international climate

negotiations have agreed to limit the temperature rise between 1850 and 2100 to 2 degrees Celsius. There is agreement in the Paris Agreement to try and limit the temperature rise even further, to 1.5 degrees Celsius. Greenhouse gas emissions will have to be halved by 2030 in order to achieve this. By 2050, a net negative will have to have been achieved, i.e. more carbon must be being removed from the atmosphere than is being emitted. Forests will play an important role here. It is estimated that around 29 per cent of the world’s annual CO₂ emissions are absorbed by vegetation. When we use wood as a construction material, this carbon remains stored in the wood. (Read more about trees as natural carbon sinks on page 27.)

The UN Climate Panel has highlighted three important prerequisites for limiting the temperature rise to 1.5 degrees Celsius.

1. The energy sector must become sustainable

This does not just mean that the use of fossil energy must be significantly reduced in favour of renewable energy like hydro, wind, solar and bioenergy. It also means that we must use energy more efficiently.

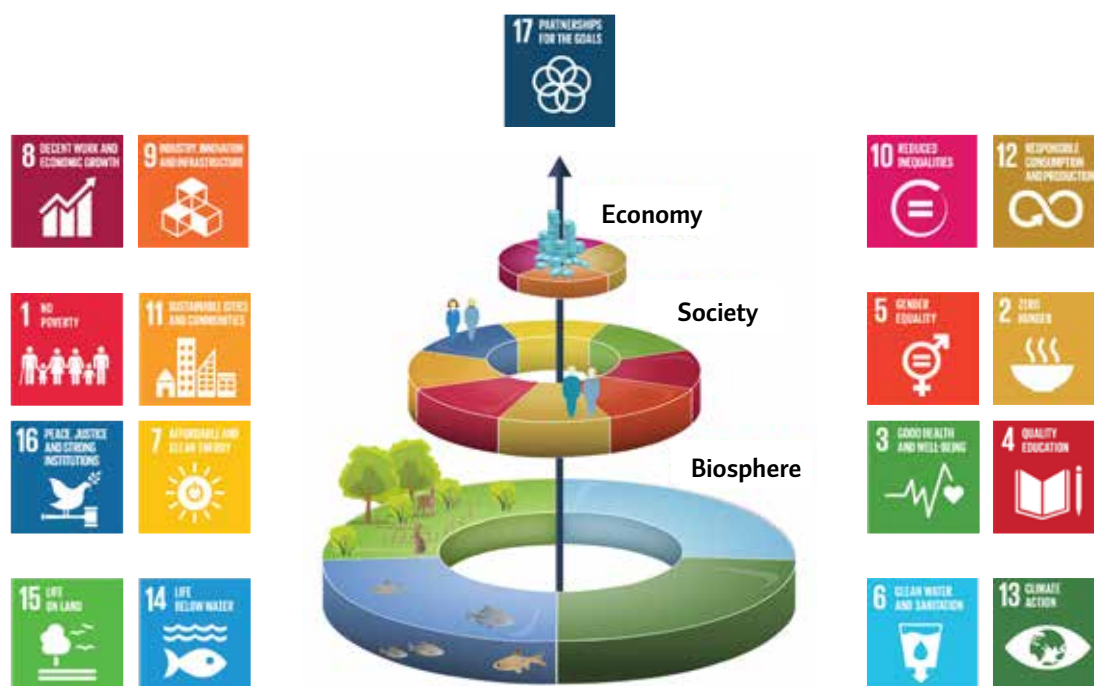
Even though most of Moelven’s energy needs are met through self-produced bioenergy, we are constantly working to reduce our consumption and increase efficiency. (Read more about energy and Moelven on page 21.)

2. Cities must be built in a climate-friendly manner

More than half of the world’s population lives in cities, and the proportion is rising. Urban development must therefore facilitate low emissions, while ensuring that buildings and infrastructure do not have to rely on fossil energy sources. Moelven contributes to this by delivering sustainable, wood-based construction materials, as well as industrialised, climate-smart construction methods. We are thus helping to reduce emissions from construction activities and exploiting the carbon sink property of trees.

3. People’s consumption and lifestyles must be sustainable

Individuals can also help to cut greenhouse gas emissions. The choices we make in everyday life are very important when it comes to our carbon footprint. Through certification schemes, product tests and, not least, transparent sustainability reporting, Moelven hopes to focus on what else we can do, besides making it easy for our customers to choose good-quality, sustainably-produced products. ●



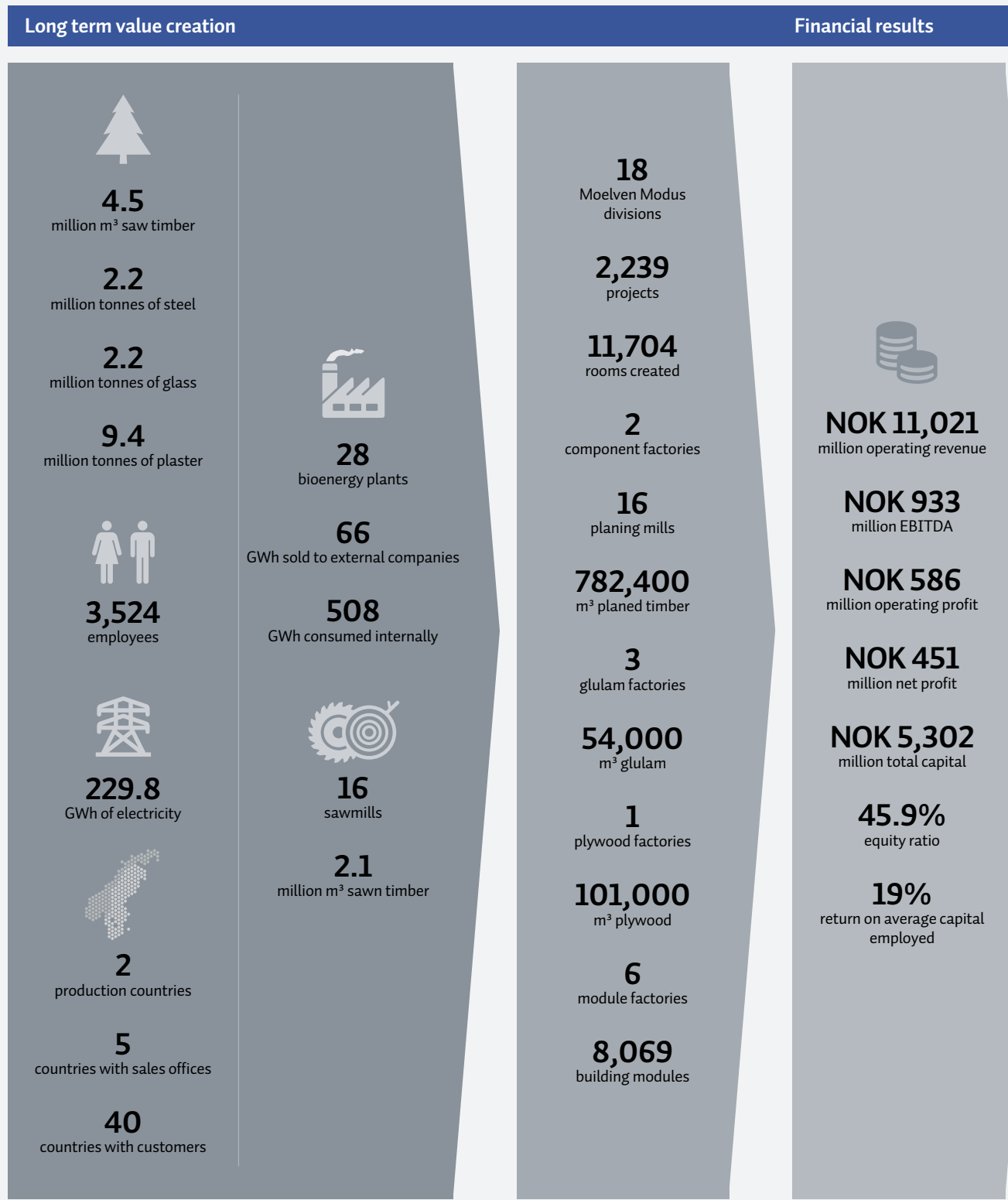
The Sustainable Development Goals target ecosystems (biospheres), society and the economy. Moelven’s activities are heavily linked to the climate (goal 13) and life on land (goal 15), but at the same time they depend on healthy, well-educated people (goals 3 and 4) in order to be able to contribute to promoting lasting, inclusive and sustainable economic growth, full employment and decent work for all (goal 8).

Stakeholder engagement and expectations

Moelven’s sustainability strategy, and the materiality analysis, has been defined on the basis of an assessment of the stakeholders’ opinions. The table shows the groups that have been identified as Moelven’s stakeholders, what they are interested in and how we communicate with them.

Stakeholder group	Their concerns	How we communicate with them
Customers	<ul style="list-style-type: none"> Price and quality Certification Sustainable forestry Climate Waste 	<ul style="list-style-type: none"> Sales and marketing Digital media Customer surveys Meetings and conversations Quarterly and annual reporting
Future and current employees	<ul style="list-style-type: none"> Working conditions Vision Corporate social responsibility Environment Personal development 	<ul style="list-style-type: none"> Meetings and conversations Digital media Trade fairs Advertising
Authorities	<ul style="list-style-type: none"> Innovation Cooperation Climate Forestry Reporting 	<ul style="list-style-type: none"> Meetings and conversations Cluster collaborations Quarterly and annual reporting
Local community	<ul style="list-style-type: none"> Environment Jobs Local value creation Transparency 	<ul style="list-style-type: none"> Marketing Digital media Meetings and conversations Quarterly and annual reporting
Owners	<ul style="list-style-type: none"> Long-term strategy Resource optimisation Climate and the environment 	<ul style="list-style-type: none"> Meetings and conversations Quarterly and annual reporting
Suppliers (incl. forest owners)	<ul style="list-style-type: none"> Sustainable financial operations Resource optimisation Sustainable forestry 	<ul style="list-style-type: none"> Meetings and conversations Cluster collaborations Digital media
Special interest organisations	<ul style="list-style-type: none"> Resource optimisation Biofuel Certification Biodiversity 	<ul style="list-style-type: none"> Meetings and conversations Conferences Cluster collaborations Digital media
Capital markets	<ul style="list-style-type: none"> Long-term strategy Risk and opportunities Transparency 	<ul style="list-style-type: none"> Meetings and conversations Quarterly and annual reporting

Our vision – The natural choice for people who want to build and live the Scandinavian way





Basic premise – We are a reliable partner

Four focus areas	Important topics	Results in 2018	Goals and priorities
<p>Climate-smart products and solutions</p> <p>We and the materials we produce shall be climate positive</p>	<ol style="list-style-type: none"> Energy consumption in own production Goods transport Production of bioenergy Climate benefits from forests Climate-smart design Waste management 	<ul style="list-style-type: none"> 133,966 tonnes of CO₂ emissions 1,491,034 tonnes of CO₂ stored in finished goods 812,639,286 tkm road transport 133,723,275 tkm rail transport 121,337,790 tkm sea transport 	<ul style="list-style-type: none"> 8% reduction in electricity consumption by 2020 Deployment and operation of methodology for energy efficiency Minimum Euro 6 lorries by 2022 Streamline logistics Increase transparency and traceability of climate impact towards customers
<p>Safeguarding natural resources</p> <p>We shall use renewable resources and utilise the entire resource</p>	<ol style="list-style-type: none"> Sustainable materials Resource optimisation Resource-efficient design and packaging Waste management in production 	<ul style="list-style-type: none"> 100% of timber controlled >51% recovery factor 318 tonnes of plastic recovered 1,407 tonnes of plastic consumed 84.3% sorting ratio 	<ul style="list-style-type: none"> 90% waste sorting ratio at all facilities by 2020 Identify opportunities to reduce waste and increase recycling Reduce plastic consumption Work for introduction of environmentally-friendly alternatives to plastic
<p>Focus on people</p> <p>We shall be an attractive and safe workplace</p>	<ol style="list-style-type: none"> HSE Engaged and competent employees Safe chemical use 	<ul style="list-style-type: none"> 10.9 LTI rate 41.2 LTI2 rate 199.2 absence due to injury rate 2,844 risk reports 5.5% absence due to illness 3,524 employees, and a total of 31 apprentices 	<ul style="list-style-type: none"> LTI < 5, LTI2 < 20, absence due to illness < 4% Risk reports >3500 Development and execution of HSE courses for all supervisors Joint management system for HMS for entire group Fixed procedures for implementation and follow-up of employee surveys
<p>Local value</p> <p>We shall create green workplaces</p>	<ol style="list-style-type: none"> Economic value creation in local communities Local environment 	<ul style="list-style-type: none"> NOK 4,519.4 million in total value creation in Norway and Sweden 3,524 direct jobs No violations of the Pollution Control Act or similar legislation that have led to fines 	<ul style="list-style-type: none"> No violations of the Pollution Control Act or similar legislation in 2018 Survey economic value creation in Sweden

This holiday cottage harmonises well with its surroundings in beautiful Saltum in Denmark. With its facade and terrace in Moelven ThermoAsk, the cottage received Jammerbugt Municipality's Architectural Award in 2016.





**Climate-smart
products and
solutions**

We will build more with less

We need to use more wood in construction in order to achieve the climate goals, but at the same time use as little materials as possible.

“WE WANT TO BUILD IN an environmentally-friendly way, be climate-smart and sustainable, and this means we must not over-consume our natural resources”, says Johan Åhlén, general manager at the world’s oldest glulam factory, Moelven Töreboda in Sweden.

The factory constructs and manufactures load-bearing wooden structures that can be used in, for example, sports halls, bridges, apartments and high-rise buildings. When we build using wood, we move the carbon stock from the forest into the building, which continues to store the carbon dioxide for as long as it stands.

“Slender, well thought through structures, and other technical solutions, enable us to use as little materials as possible and thereby avoid wasting natural resources,” says Åhlén.

The Mjøsa Tower in Ringsaker is an example of this. The world’s tallest wooden building consists of glulam columns, beams and diagonals, which provide a strong and light main framework. The lift shaft is made of solid wood, while the building’s top seven floor

elements are made of concrete to provide weight and reduce movement caused by strong winds. Choosing the right material in the right place makes the building more resource-efficient.

Constructing more in wood will allow us to reduce the greenhouse gas emissions that occur when we use non-renewable materials. However, perhaps the greatest impact is achieved by focusing on what produces the best end result.

“We would love to use wood everywhere, but we aren’t afraid to combine it with steel and concrete if this produces the best result,” says Åhlén.

Another example of this kind of combination is Ulls Hus, the new main building of the Swedish University of Agricultural Sciences in Uppsala, which mostly contains wood, but also some steel and concrete. Moelven believes that the most important thing is not to use more resources than necessary.

“This is the mindset we need, both privately and professionally, when we’re choosing what to eat, when and where to go on holiday and how to build using wood,” says Åhlén. ●



MOELVEN TÖREBODA

Founded in 1919, it is currently the world’s oldest glulam factory.

It is located in Töreboda Municipality, Sweden.

It manufactures and sells load-bearing glulam wooden structures that can be used in sports halls, bridges, apartments and high-rise buildings, for example.

Glulam is a construction material composed of many layers of dimensional lumber bonded together with adhesives to form long beams. These can in turn be shaped and assembled into bigger beams with large spans.



Johan Åhlén, the general manager at Moelven Töreboda, believes that the most important thing is not to use more resources than necessary. Moelven Töreboda manufactures and sells load-bearing glulam wooden structures.



“Slender, well thought through structures, and other technical solutions, enable us to use as little materials as possible and thereby avoid wasting natural resources.”

Johan Åhlén

The new main building of the Swedish University of Agricultural Sciences, Ulls Hus, combines both wood, steel and concrete.

Wooden glulam structures being hoisted into place in the Mjøsa Tower.



Photo: Jens Haugen/Aniti



Photo: Jens Haugen/Aniti

Climate accounts

Moelven reported its climate accounts in accordance with the GHG Protocol for the first time in 2017. This is the most widely recognised method for greenhouse gas reporting that provides a transparent and clear result.

(Tonnes CO ₂ equivalents)	Change %	2018	2017
Scope 1 (Emissions in Moelven)	65.3	17,555	10,741
Fuel oil		6,151	532
Diesel		10,628	8,829
Biodiesel		11	
Petrol		20	18
LPG		695	
Moelven owned goods transport (to customer)		0	1,246
Moelven owned goods transport (from supplier)		50	69
Direct biobased emissions (outside scope)	-13.5	354,620	409,859
Bark		188,151	282,600
Sawdust		64,966	21,254
Chopping chips		61,748	79,556
Wood shavings		6,500	21,106
Cellulose chips		4,477	4,003
Pellets		228	739
Firewood and BROT		27,722	
Biodiesel		767	331
Scope 2 (Emissions related to electricity consumption)			
Location-based calculation	22.3	3,105	2,539 (14,079*)
Market-based calculation	-0.5	115,784	116,307 (80,899*)
Scope 3 (Emissions outside Moelven)	4.0	113,306	108,737
Goods transport to customers performed by third parties		69,862	63,208
Third party goods transport (from supplier)		41,457	44,639
Air travel		540	296
Work-related car transport		1,446	595
Total emissions (scope 1, scope 2 location-based, scope 3)	9.8	133,966	122,017
Total emissions (scope 1, scope 2 market-based, scope 3)	4.6	246,646	235,785

The climate accounts are based on emissions of CO₂, as no emissions of other greenhouse gases have been identified or quantified, such as CH₄, N₂O, HFC, PFC, SF₆ or NF₃. Since 2017 was the first year of reporting in accordance with the GHG Protocol, 2017 has been set as the base year for future comparisons.

Emission factors have largely been obtained from Defra (Department for Environment, Food & Rural Affairs, UK). Emission factors for electricity are based on NVE's factors in Norway, while the 2015 factors from the Swedish Energy Markets Inspectorate and Reddis et al. have been used for Sweden.

For calculations of biobased 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.

* Figures in brackets are figures reported in the Sustainability Report for 2017. New figures have been adjusted to take account of changed emission factors.

Sustainability reporting was implemented in the financial reporting system in 2018. A reporting manual was also developed that clarifies the expectations and reporting requirements for individual units in the Moelven Group. These improvements have enhanced the quality of climate reporting for 2018, and some of the changes in greenhouse gas emissions can be attributed to this.

The biomass boiler that provides thermal energy for Moelven Valåsen AB was put out of operation in 2018 due to a fire. At the time, the biomass boiler was owned and operated by an external party, and Moelven Valåsen AB bought the thermal energy. A backup solution involving an oil-based heating system was established to ensure energy supplies. The fuel oil was purchased by Moelven.

The consumption of fuel oil during the period when the backup solution was operational is the primary reason for the increase in Scope 1 emissions in 2018.

The changes in operations associated with direct biobased emissions were minor, with the exception of the situation at Moelven Valåsen AB described above. Therefore, the changes in reported emissions are main-

ly attributable to changed reporting routines, where system delimitations have been more clearly defined. This is especially true in situations where Moelven is not the owner of the biomass boiler, but is the biomass supplier and bioenergy buyer. In accordance with the GHG Protocol, these emissions will be dropped from the reporting, and are in any case defined as climate neutral emissions.

Electricity consumption remained more or less unchanged in 2018 compared with 2017, with a reduction in consumption of around 1 GWh (0.5 per cent). Therefore, the difference in emissions from 2017 can be attributed to the various nations' changes to emission factors, which are published by the Norwegian Water Resources and Energy Directorate (NVE) (Norway), Energinet (Denmark), AIB (the certifying body for European guarantees of origin) and the International Energy Agency (IEA). New emission factors for Scope 2 emissions were also used in 2018. This was due to the Swedish authorities not publishing market-based and location-based emission factors using the same calculation method, as is done in Norway and Denmark. The figures reported for 2017 have thus been adjusted accordingly.

We have climate-smart products and solutions

Many of Moelven's operations impact the climate.

FORESTS ABSORB CO₂ from the atmosphere through photosynthesis and store it as carbon in trees. Timber logs are processed into high-quality, long-lasting products and materials, while the residual products such as bark and chips can be used to produce bioenergy.

More than half of the log is turned into sawn timber at a sawmill. This is then processed and can in many cases replace competing materials that have a greater impact on the climate than wood-based products and solutions.

At the same time, storing carbon in wood products helps to expand storage capacity in the carbon cycle. Production and long-term use of wood products can thus have a positive climate impact.

The other half of the log ends up as chips and bark. This is used in industrial processes such as raw mate-

rial for bioenergy or for paper and cardboard production. Bioenergy produced using biomass from forests is defined as renewable, as it is part of the natural carbon cycle. Moelven produces bioenergy that we use ourselves in production, or sell to external customers. Moelven also sells a large proportion of its biomass, which is used for energy production, for example in district heating plants.

Moelven also has a negative impact in the climate through the use of energy based on fossil fuels. The operations consume electricity and fuel to power their activities. Moelven also contributes to suppliers' greenhouse gas emissions through its purchases. It is transport in particular that has a negative climate impact. ●

Tall and Green

Global warming, combined with expected world population growth, means that the construction industry is looking for more climate-friendly solutions. There is a need to build taller and more densely in urban areas in order to absorb the population growth, and this is where wood comes in as a solution.

“Research shows that tall buildings constructed with wooden load-bearing structures will significantly reduce emissions in material production,” says environmental consultant and architect, Bård S. Solem. Calculations show examples of reductions in emissions far in excess of 50 per cent for the load-bearing structures.

“The Mjøsa Tower is a pilot project, constructed using glulam structures, that could pave the way for other sustainable projects that explore new solutions for the use of materials,” says Solem.

Frostaliden, which is in Skövde, is another example where tall wooden buildings have been chosen to ensure more climate-friendly construction methods. Six new high-rise buildings housing 350 apartments will be constructed in Frostaliden, which will become one of Sweden’s largest areas for high-rise wooden buildings. Just like in the Mjøsa Tower, the buildings will have wooden load-bearing structures with Moelven’s self-developed deck solution, Trä8.

Photo: Studio Ekberg AB/Linus Romberg



**MOST
IMPORTANT**

Energy consumption in own production

Where and why is it important?

Moelven consumes a considerable amount of energy in its production. Together with transport, this is the largest driver of greenhouse gas emissions. It is therefore a key component in the Group's ability to supply climate-smart products and services.

Energy consumption in own production is important both to Moelven and its stakeholders since it represents both an environmental challenge and a major expense. Moelven produces a large proportion of its own energy consumption through the incineration of biomass.

Policy and approach

Moelven's goal is to reduce energy consumption at its facilities. This will be done by actively participating in technology and market development of the bioenergy sector, and by investigating alternative energy use at those plants that currently use fossil fuels.

To achieve this, Moelven has itself set a target of supplying at least 95 per cent of the energy needed for heating premises and drying from self-produced bioenergy in the timber industry.

Moelven also actively works on innovation. One example of this is "The smart digital sawmill" project, which is being carried out at Moelven Valåsen AB's sawmill in Karlskoga in Sweden. This involves the introduction of modern digital technology to increase efficiency and reduce energy consumption. A detailed energy survey is also being carried out of all of the Group's operations in Sweden.

Evaluation of results

Moelven's total energy consumption fell slightly in 2018 compared with 2017. This can primarily be attributed to clearer internal guidelines for bioenergy reporting. It is believed that the reporting for 2017 contained errors linked to boilers owned by external parties, but where Moelven buys the energy in the form of district heating and delivered the biomass for energy production. There is a risk that some of the data was counted twice in the energy accounts for 2017.

Fossil energy consumption has increased by almost 40 per cent, which is also attributable to improvements to reporting routines. In addition to this, there was a significant increase in fuel oil consumption (see "Climate accounts" on page 18 for further details about this).

Moelven has set itself an overarching goal of reducing electricity consumption by 8 per cent from 2017 levels by 2020. In 2018, energy consumption was reduced by only around 0.5 per cent and therefore a lot of work remains to be done in order to achieve this goal. One important element of this work is establishing a "Moelven standard" for implementing energy efficiency measures based on the lessons learned in the "The smart digital sawmill" project and energy survey (see page 22). The plan is to start deploying this in the second half of 2019.

Various methods for establishing a variable benchmark for energy consumption will also be evaluated in 2019. This should contribute to better continuous energy consumption monitoring that also takes account of variations in factors such as production and outside temperatures. ●

Category – Volume (GWh)	2018	2017*
Total fossil energy consumption (fuel)	61	44
Total bioenergy production in the Group (lower calorific value)	723	622
Lost bioenergy	145	159
Total electricity consumption, purchased	230	231
Purchase of district heating	164	286
Total sales of bioenergy	70	66
Total energy consumption in the company	893	958
Consumed bioenergy (GWh)	508	397

AMBITIONS

- ▶ We shall be climate-positive
- ▶ Energy consumption will be reduced
- ▶ 95% of the energy needed for heating premises and drying comes from self-produced bioenergy in the timber industry

RESULTS

- ▶ 61 GWh fossil energy consumption
- ▶ 723 GWh bioenergy production
- ▶ 230 GWh electricity consumption
- ▶ 92% of the energy survey in Sweden has been completed

MEASURES

- ▶ Reduce electricity consumption by 8% by 2020
- ▶ Establish more KPIs for energy use and energy efficiency
- ▶ Deploy energy efficiency measures
- ▶ Extend existing targets

* The figures for 2017 have been corrected for errors identified in connection with the report for 2018.

Energy efficiency

In 2019, Moelven will complete its energy survey of all of our operations in Sweden. The results from the survey, which has been conducted over a 4-year period, form an important part of the basis for the measures that will be implemented to achieve the goal of reducing our electricity consumption by 8 per cent by 2020.

In addition to the energy survey, we are carrying out a project at Moelven Valåsen AB in Sweden to assess, identify and test new technologies in the development of “the smart digital sawmill”. Since the project started, the sawmill in Karlskoga has been able to make the wood drying process more energy efficient and has come up with several other processes with great potential as far as improving efficiency is concerned.

Moelven has focused on ensuring that the infrastructure, systems, data and patterns that are developed and introduced are documented, standardised and owned by the Group. This will allow the measures to be refined using our own resources and to be deployed to other units in the company. This is crucial if we are going to successfully increase the efficiency of our energy consumption in a manner that reduces the specific energy consumption of each production unit.

Measures that make us more energy efficient

Energy meters

Installing energy meters that continuously record heat and electricity energy data allows the organisation to maintain an overview of energy levels at all times. This provides a good basis for improvement and efficiency work.

Sorting timber using X-ray technology

X-ray machines that analyse each log to determine what the timber is best suited for allow each log to be used to the fullest extent. Both Moelven Valåsen and Moelven Våler have started sorting logs using X-ray machines. The sawmill in Våler was the first in Norway to make use of this technology.

Traceability

In Valåsen, Moelven has introduced an advanced tracking system that makes it possible to track wood through the entire process, from the initial splitting of the log to the finished product. This allows potential problems to be identified as early as possible in the process, thus saving both time and money.

New and upgraded driers

Timber has to be properly dried before it is ready for use and quite a lot of heat is required to get the moisture out of it. By investing in new driers and overhauling its old driers, Moelven Valåsen has managed to lower its energy consumption by 21 per cent per produced cubic metre.

X-ray sorting timber reduces waste and allows Moelven Våler to ensure the optimum use of the logs.


**MOST
IMPORTANT**

Goods transport

Where and why is it important?

The timber and construction industries, which are Moelven's main activities, are transport sensitive. Large volumes of materials and products are transported over great distances. This applies to transport from suppliers to Moelven, internal transport within Moelven, and transport out to the markets.

Transport is a very important area for the Group, both environmentally and financially, and influences the company's strategies and decisions. As far as the market is concerned, efficient logistics solutions are a prerequisite when it comes to being able to offer customers fast, accurate deliveries. It can also be a burden for many stakeholders, as transport can have a negative impact on the climate and local environment.

Policy and approach

Moelven is a co-owner and member of several transport cooperatives that perform a large proportion of the transport jobs at Moelven. This means that Moelven has a lot of influence with the transporters and can stipulate requirements for how they run their operations. The different industry affiliations and transport needs of the other participants in the transport collectives help to increase the opportunities for improving efficiency by setting up transport routes that minimise journeys with no loads.

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.

Moelven's sustainability policy sets targets and guidelines for transport in the company. The environmental impact of transport must be minimised by coordinating and optimising product flow. The environment must be

taken into account when choosing transport methods, and minimum environmental requirements must be stipulated when choosing partners. The applicable requirement for road transport in 2018 was a minimum of Euro class 5. When new vehicles are acquired these must be at least Euro class 6. The goal is for all road transport to be performed using Euro class 6 or better vehicles from 2022.

These targets and guidelines have been implemented in cooperation agreements with road transporters in both Norway and Sweden.

Moelven also actively works on the framework conditions for transport. One example of this is the "Godspakke Innlandet" (freight package for the Interior Region) initiative, where Moelven has joined forces with other industry partners to quantify the costs and benefits of various governmental measures. Better roads that allow higher maximum axle pressure limits and longer vehicles are measures on the part of the authorities that will help to reduce the environmental impact of road transport.

Evaluation of results

Transport of products to customer (where Moelven is the invoice recipient) (tkm)	2018	2017
Road transport	580,720,806	460,822,667
Rail transport	79,891,661	129,770,775
Sea transport	162,734,230	121,337,790

Transport of timber to the company (Moelven) (tkm)	2018	2017
Road transport	297,316,339	275,738,298
Rail transport	2,831,074	3,952,500
Sea transport	44,927,506	31,327,500

Transport of other goods to the company (Moelven) (tkm)	2018	2017
Road transport	83,334,527	76,078,321

The scope of road transport increased by 18 per cent in 2018. The main reasons for this were the improved reporting routines that capture more precise information, and railway track repairs that resulted in rail transport being unavailable for periods of time. Rail transport is a highly efficient means of transport when conditions permit, and it is also more climate efficient. We, therefore, strive to use rail transport wherever possible. ●

AMBITIONS

- ▶ The environmental impact of transport must be minimised by coordinating and optimising product flow
- ▶ Minimum Euro class 5 for

road transport

- ▶ Minimum Euro class 6 when new vehicles are acquired
- ▶ The environment must be taken into account when choosing transport methods

RESULTS

- ▶ KPIs have been established for transport at company and division levels.

MEASURES

- ▶ Survey the use of Euro class 5 and Euro class 6 lorries
- ▶ Improve transport reporting, including the transport of goods to customers



**MORE
IMPORTANT**

Climate benefits from forests

Where and why is it important?

A large proportion of Moelven's climate-smart products and materials are based on using timber as a raw material. Forests are a part of the natural carbon cycle, and store large amounts of CO₂ absorbed from the atmosphere through photosynthesis. By contributing to efficient and sustainable forestry, as well as ensuring that timber is used efficiently, Moelven can help to increase the ability of forests to absorb CO₂ from the atmosphere and store it in products. The climate impact is thus positive.

Policy and approach

In Sweden, timber is bought directly from the forest owner. Moelven Skog AB is responsible for purchasing timber in Sweden and is one of the companies in the Group with the greatest opportunity to influence forestry operations. Moelven Skog AB's vision, "More TIMBER in forests", is about how the company can help maximise the potential of forests by working with forest owners. This provides Moelven with access to more and better raw materials, while also providing forest owners with good returns.

In Norway, it is Moelven Virke AS who is responsible for purchasing timber. Due to the fact that forest owners are organised differently in Norway, purchases are made via forest owner associations. Moelven Virke AS is thus not directly involved in harvesting or managing forests like Moelven Skog AB. As a Group, Moelven nevertheless has a responsibility to its suppliers to treat and process the products in a sustainable manner and, irrespective of national borders, Moelven believes certification and traceability are

Description	2018	2017*
Total consumed timber (m ³ fub)	4,352,472	4,443,553
CO ₂ equivalents stored in consumed timber	3,078,551	3,195,298
Produced sawn timber and plywood (m ³)	2,203,243	2,254,582
CO₂ equivalents stored in produced volume (tonnes)	1,562,961	1,619,542
Biomass sold for renewable energy production (lm ³)	2,924,000	2,873,000
Energy content of sold biomass (GWh)	1,821	1,794
Total CO₂- emissions(CO₂te, location-based)	133,966	133,558
Total CO₂- emissions(CO₂te, market-based)	246,646	200,377

very important when purchasing raw materials.

Moelven's sustainability policy states that at end of use, wood products must return more than three times the energy they have consumed throughout their life cycle through energy recovery (incineration).

Evaluation of results

Large amounts of CO₂ absorbed from the atmosphere are stored in Moelven's wood products as carbon. Through sustainable forestry and products with long service lives, Moelven will help to increase the carbon cycle's absorption of CO₂, which may reduce CO₂ concentrations in the atmosphere when compared to leaving the forest untouched. It is important to be aware that there are several uncertainty factors that affect the overall picture, such as greenhouse gas emissions from the soil after deforestation.

When Moelven's climate accounts are compared with the overall amount of CO₂ stored in products, it is clear that the amount of CO₂ stored in the products is several times greater than Moelven's greenhouse gas emissions. This may indicate that Moelven and the materials the Group produces are climate positive. To reach a final conclusion, we need a better understanding of, and insight into, forestry after deforestation.

Moelven's sales of pulpwood to the bioenergy industry and direct sales of district heating based on biomass can replace fossil energy sources and thus reduce society's climate impact. ●

Calculation basis:

The source used for calculating CO₂ is EN 16449. The source used for density is Bramming et al. (2006). Physical and mechanical properties in Norwegian spruce and pine. An activity in the SSFF project. Treteknisk Rapport 65, 2006.

It is estimated that a cubic metre saw timber of spruce has a basic density of 363 kg/m³ and that pine has a basic density of 418 kg/m³. Basic density is dry weight of wet volume (>30% wood humidity). The carbon content is assumed at 50 per cent of the dry weight. Equal proportions of spruce and pine are assumed.

Spruce: 363 x 0.5 x 44/12 = 665.5 kg CO₂/m³ saw timber

Pine: 418 x 0.5 x 44/12 = 766.3 kg CO₂ / m³ saw timber

* The figures for 2017 have been corrected for errors identified in connection with the report for 2018.

AMBITIONS

- ▶ We and the materials we produce shall be climate positive

RESULTS

- ▶ 3.1 million tonnes of CO₂ stored in consumed timber
- ▶ 1.5 million tonnes of CO₂ stored in sawn timber and plywood
- ▶ 1,821 GWh of potential energy in biomass for external bioenergy producers

MEASURES

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



Sustainable transport measures

Road transport

Moelven has a clear objective of reducing its climate footprint within transport and it closely monitors advances within alternatives to fossil fuels and electric vehicles. Biofuels are used to the extent that they have been added to ordinary fuel, but the entire vehicle fleet will need to be replaced before it will be possible to use 100 per cent biofuel. Electric vehicles may also be an option in some areas. Unfortunately, the technology has not advanced enough for it to be introduced in those areas where Moelven has the largest transport volumes, in timber transport and goods transport. Range remains a challenge in these areas, at the same time as the increased net weight of the vehicles, due to the batteries, would significantly reduce payload capacity. This is especially true of the Norwegian road network, as many locations have relatively strict axle pressure limits. In order to reduce transport emissions as fast as possible, Moelven is therefore focusing on introducing new, modern vehicles with the lowest possible emissions, streamlining logistics, minimizing journeys with no loads and using modular vehicle combinations wherever possible. Modular vehicle combinations, which can be up to 25.25 metres long and weigh up to 60 tonnes, provide more space for cargo per vehicle and can thus

result in fewer journeys. This reduces both the costs and environmental impact per m³ of timber.

Moelven Trysil has calculated that the fact that it was unable to use modular vehicle combinations in 2017 resulted in 314 additional loads of timber and byproducts, which incurred the company additional expenditure of nearly NOK 2 million. The sawmill's access road can now carry such lorries, but, more than 4 years after modular vehicle combinations were permitted in Norway, they still cannot use many roads.

Rail transport

With the "Godspakke Innlandet" (freight package for the Interior Region) initiative, we can reduce the forestry and timber industries' transport costs by NOK 57 million each year, making the industry more competitive due to faster deliveries and reduced greenhouse gas emissions.

The "Godspakke Innlandet" initiative is part of the technical agencies' input to the national transport plan aimed at improving goods transport by rail. Among other things, the package proposes electrifying the Kongsvinger – Elverum – Hamar railway line, new connecting tracks in Kongsvinger, Elverum and Hamar, and new multi-purpose terminals in the Interior Region.

Norway makes extensive use of rail

transport within raw material supply and fibre sales for its industrial timber processing business. This transport method is used for both raw materials for Moelven's industrial processes, as well as for pulpwood and fibre products for customers. Depending on the contract with the customer, Moelven is sometimes responsible for transport, while in other cases the customer is responsible for transport. The latter transport is not included in Moelven's climate accounts, but is included below to illustrate its scope. The total annual rail transport associated with timber supply and fibre sales amounted to 250,810,238 tonne kilometres (tkm) and involved 486 train journeys in 2018. Transporting all or parts of this volume by road would not be sustainable, either in terms of environmental impact or financially. In addition to this, come the positive environmental effects of the products being transported. Moelven delivers substantial volumes of raw materials for bioenergy, which has a positive climate impact due to the bioenergy replacing oil heating. One of Moelven's customers, Stockholm Xergy (formerly Fortum Värme), has calculated that the heat production from the company's bioenergy plant outside Stockholm alone can help to reduce CO₂ emissions by 650,000 tonnes annually due to the phasing out of fossil power.



On the side of nature

The impact of forestry on the climate.

Why do we fell trees?

Scandinavian forests bind around 55 per cent of our man-made CO₂ emissions. So why then is it a good thing to fell trees to produce wooden buildings and other wood products?

One important reason is the ability of trees to act as natural carbon sinks. As with most plants, photosynthesis enables trees to absorb carbon dioxide (CO₂). Trees use the most CO₂ as they are growing and absorb less CO₂ once they are mature. When a tree rots or is burned, the carbon dioxide is released again, but if the tree is felled and used as, for example, construction materials, it continues to act as a carbon sink. An ordinary wooden house/building will, for example, bind around 16 tonnes of CO₂ in the wood.

According to the UN Climate Panel, in order to successfully limit global temperature rises to less than 2 degrees Celsius by 2100, we must bind more carbon than we release. We can do this by "capturing" greenhouse gases from the atmosphere and storing them underground or by practising active forestry and using more wood in construction. Producing trees requires little energy and they can replace non-renewable construction materials that emit more greenhouse gases.

Environmental organisations say that we must stop deforestation, so why is using more wood in construction a good thing?

The world's forests are gigantic carbon sinks and to avoid emissions from these sinks, deforestation must be reduced. However, there is big difference between chopping down rainforest, which is often not replaced by new forest, and the forests here in Scandinavia. For each tree that is

felled in Scandinavia, two new trees are planted, which when growing consume more CO₂ than grown trees. This means that active forestry helps to bind more CO₂ than would be the case were the forest to be allowed to gradually die naturally. According to Trefokus, increased forest production would enable us to increase the amount of captured CO₂ from around 1.2 billion tonnes in 2013 to 1.5 billion tonnes in 60-70 years.

What happens to the wildlife when forest is felled?

A number of measures are implemented to ensure that forestry does not reduce a forest's biodiversity, but instead safeguards all the species that live there. Surveying all of the animal and bird species that live in the forest allows us to ensure that biotopes that are home to rare and endangered species are protected. Requirements have also been produced that set out how much forest must be managed out of consideration for bird species and at what times of the year they must not be disturbed.

Will there be too little forest in Scandinavia if we use more wood in construction?

Forests cover around 38 per cent of the Norwegian mainland and these areas are home to almost eleven billion trees with a diameter of 5 cm or more. Norwegian forest owners have a good, long history of sustainable management. In fact, Norwegian forests are growing by around 25 million cubic metres of wood each year, while around 10 million cubic metres of wood are extracted annually. Moelven is a major buyer of wood and to ensure that the raw materials we use come from sustainable forestry, we buy certified wood.

What about virgin forest?

Forest protection is important for preserving biodiversity, outdoor recreation and the cultural landscape. 10 per cent of the forest in Norway must be protected and

this means that in these areas nature is able to develop free of human influence. However, the climate effects of forest protection are disputed. If the trees are felled before they die, they can be used as a substitute for products produced using fossil resources such as oil, coal and gas, and thus prevent greenhouse gas emissions.

What happens to felled areas after the trees have been felled?

In Scandinavian forests, a lot of carbon is stored in the root systems and in the soil, and during felling CO₂ emissions from the soil increase for a period of 10-30 years before the new vegetation again ensures the net absorption of CO₂. After felling, forest owners must ensure that new forest is established within three years. This can be done by planting, sowing or natural regeneration due to seeds. Mineral soil can be exposed in these areas in order to ensure that the new forest is established faster, grows better and has higher survival rates. Preparing the land like this disturbs the soil and can thus result in some carbon loss, but at the same time the new forest will be able to bind CO₂ again faster.

Does forestry produce greenhouse gas emissions?

Although the raw materials from forestry are climate-friendly, forestry does produce greenhouse gas emissions. The emissions come from sources such as the fuel consumed by forestry machinery and logging lorries that carry the wood from the forest to industrial facilities. These emissions are included when calculating the effects of replacing other construction materials with wood. The effects can be further increased by substituting biofuel for fossil fuel, and using electric forestry machinery and logging lorries when these become available.

Sources: Skog – en viktig del av klimaløsningen, Skog.no, Regjeringen.no, Trefokus



Sustainable forestry

Moelven Skog AB buys timber from more than 10,000 forest owners in the Swedish counties of Värmland, Västra Götaland and Örebro, and is responsible for supplying raw materials to the Group's timber-consuming units in Sweden. The goal is to operate long-term, sustainable forestry. The company is constantly striving to refine and improve its work methods and routines to ensure that felling takes place at the right location at the right time of year, and to minimise the environmental impact of heavy logging equipment. The company also believes the certification of forest owners and providing the general public with insights into modern forestry are important.



Recycling and reuse

Moelven Modus develops, produces and installs sustainable, efficient room solutions for commercial buildings. The company carries out around 2,000 office projects every year. One of the companies that has chosen its flexible system interiors is the building and construction company Peab, which is constructing a new office building for its operations in Stockholm. The system walls are not just flexible, they can also be reused. The walls can be dismantled and rebuilt on new sites to suit new needs, again and again and again.



Modular construction as a construction method

Over 50 years, Moelven Byggmodul has delivered more than 120,000 modules to the construction market. These include modules for permanent and temporary buildings in segments such as schools and kindergartens, hotels and student accommodation. Using sustainable, wood construction materials, minimising construction waste and loss on the construction site, and short construction times are just some of the factors that make this construction method sustainable.



Passive house

Moelven is passionate about sustainable solutions, and constructing passive houses can save both the environment and the wallet. A home built in accordance with the passive house standard requires around 25 per cent of the energy required by a normal home. Passive measures such as extra thermal insulation, extra tight sealing and heat recovery reduce the need for energy. By building with Iso3, which is produced by Moelven Multi3, you avoid heat loss because the end result is a wall completely free of cold bridges. Moelven also wants to contribute to the development of solutions for the buildings and urban areas of the future, which could help to realise the ambition of the zero emission society. We are therefore a partner in the Research Centre on Zero Emission Neighbourhoods in Smart Cities.

Illustration: Tegn-3

**MORE
IMPORTANT**

Climate-smart design

Where and why is it important?

Moelven produces climate-smart products and materials, which have a lower climate impact than many competing materials. The products may have a climate impact in both production and use, and it is therefore important to consider the product's entire life cycle. Certification is important, both as part of quality assurance routines and when it comes to providing our customers with enough information to make sustainable product and material choices. Many of the certification schemes cover more than just the climate, this chapter will therefore also cover other environmental impacts

Buildings and the construction industry account for around 40 per cent of the world's energy consumption and 33 per cent of the world's greenhouse gas emissions. Moelven therefore plays an important role in producing and developing climate-smart products and solutions. Customers and consumers are becoming increasingly interested in environmental impact. The climate impact of various products and solutions is of particularly great significance, which makes this topic important.

Policy and approach

Certification allows customers and consumers to make informed choices and compare different products and materials. Moelven's products therefore have certifications that cover the customers' various requirements and needs.

The raw material certification schemes PEFC™ and FSC® are key certifications that document that the

wood material comes from responsible forestry. Read more about these certification schemes in the chapter "Sustainable materials".

Moelven is also subject to several regulatory requirements for certification. Generally, Moelven's products are subject to one EU directive, the Construction Products Regulation (CPR), which deals with various CE certifications. Directives such as Registration, Evaluation, Authorisation and Restriction of Chemicals (REACH) and the Biocidal Products Regulation (BPR) are also relevant, but in significantly fewer areas.

In Norway, BREEAM-NOR, the Norwegian adaptation of BREEAM, is the largest driver when it comes to choosing climate-smart products. This is in the industry's own environmental certification tool for buildings. Its purpose is to encourage sustainable design and construction throughout the entire construction project, from the early phases to the finished and delivered building. BREEAM-NOR is an effective tool for coordinating the various parties in a construction project and integrating a sustainable mindset in all links of the chain. BREEAM-NOR sets requirements for, among other things, material selection, such as deliveries of certified products in PEFC™ Chain of Custody or FSC® Chain of Custody, Environmental Product Declarations (EPDs), Eco-products, and emission tests on interior products (HEA2 with M1 certificate or AgBB).

Besides certifications and regulatory requirements, Moelven also works on the marketing of its products and materials, and is a key market player in promoting wood as a climate-smart product and construction material. Here, Moelven has a responsibility and an opportunity to influence consumers to make climate-smart choices by choosing Moelven's products. Among other things, Moelven has interior designers actively working on this issue.

Evaluation of results

A large proportion of Moelven's products and materials are certified under various certification schemes. The next page includes a summary of relevant environmental certifications and tools that are relevant for Moelven's products and materials. ●

AMBITIONS

- ▶ Moelven's products and materials shall be climate positive

RESULTS

- ▶ The spruce and pine products Moelven produces can be sold certified
- ▶ The spruce and pine products Moelven produces come with environmental assessments or product certification

MEASURES

- ▶ Continue the work on surveying environmental assessments and product certifications in the Group
- ▶ The spruce and pine products Moelven produces will be covered by EPDs in 2019

Environmental certifications and tools

There are a number of different bodies with their own certification and documentation schemes related to environment and health. These tools and certification schemes can either cover a product alone, or an entire building or a project. A large proportion of Moelven's products and materials are covered by one or more tools and certification schemes. This gives customers and users the opportunity to make informed choices based on sustainability criteria.

Environmental product declarations (EPDs)

An EPD is a brief, independently verified and registered document that communicates transparent and comparable information about the life-cycle environmental impact of products. Both the underlying life-cycle assessment (LCA) and the EPD are always based on international standards. Independently verified environmental declarations ensure that environmental information is provided in accordance with the four requirements: objectivity, comparability, credibility and addability.

Moelven has developed around 25 EPDs and will present five new ones during the course of 2019.

Byggarubedömningen (BVB)

BVB is a Swedish association that has developed a system for assessing construction materials based on sustainability. The assessments are based on the life-cycle environmental impact and chemical content of the construction materials. BVB is also working on establishing an assessment system for social factors in the value chain.

SundaHus

SundaHus Miljödata is a tool that assesses the environmental properties of different products in the construction industry. This tool allows Moelven's customers to compare different products based on a standardised assessment model.

The CE Mark

The CE mark (CE = Communauté européenne) is a declaration that the manufacturer, or its representative, guarantees that all of the requirements stipulated for the product in the applicable directive/regulation are deemed to have been complied with.

A product with correct the CE marking has free access to the market in the European Economic Area (EEA).

Construction product declarations (CPDs)

A construction product declaration is a standardised way of describing a product. Information concerning the material's origin, chemical content, environmental impact, and certifications, as well as a description of the product's installation, use and how to handle it after use.

BREEAM-NOR

BREEAM-NOR is an environmental certification system for buildings. The system is an effective tool for coordinating the various parties in a construction project and integrating a sustainable mindset in all links of the chain.

Also see the separate discussion.

BASTA Bedömningar

BASTA is a Swedish product certification scheme for chemical content in products. The EU requirements in the REACH Directive lie at the core of BASTA's product certification.

The Swan ecolabel

The Swan ecolabel is the official Nordic ecolabel, established by the authorities to provide consumers with credible environmental information. The scheme is operated on a non-profit basis. The ecolabel reduces the environmental strain from production and consumption by assessing a product's entire life cycle and all relevant environmental issues that arise along the way. The Swan ecolabel makes it easy to select the most environmentally friendly product or service, and represents a reduced climate impact, the sustainable use of resources and a poison-free society.

**MOST
IMPORTANT**

Production of bioenergy

Where and why is it important?

Bioenergy is energy that is produced from materials formed in ongoing biological processes. Unlike fossil energy, bioenergy emissions are considered climate neutral since they are part of the carbon cycle, assuming net positive forest growth. Bioenergy can also replace fossil energy sources and therefore makes a positive contribution to the zero emission society.

At Moelven the energy is both utilised as heat and sold externally as district heating. 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. Moelven needs to exploit the entire log in order to ensure profitable operations, and bioenergy is thus an important resource for creating value from wood chip and bark products.

Policy and approach

The energy potential of the Group's chip and bark products, including cellulose chips, amounts to around 2.5 TWh (moisture 60 per cent). Therefore, considerable potential exists in terms of both increased own production and a larger market for bioenergy in general.

Moelven's sustainability policy contains the following goals and guidelines:

- ▶ Moelven must reduce energy consumption at its facilities and obtain at least 95 per cent of the energy needed for heating premises and drying from self-produced bioenergy (timber industry).

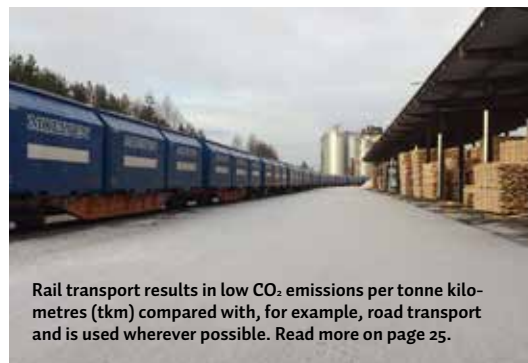
- ▶ Moelven shall actively participate in technology and market developments in the bioenergy sector, and by investigating alternative energy use at those plants who use fossil fuel for heating.

Evaluation of results

Moelven has conducted a survey of internal bioenergy consumption, sales of bioenergy and sales of chips to the rest of the bioenergy industry. The results show that Moelven consumed 508 GWh of bioenergy in the form of heat in 2018. As described in the chapter "Energy consumption in own production", this is mainly used for drying.

Moelven also purchases significant amounts of bioenergy from external companies. This is because the relationships between owners, operators and suppliers of biomass for combustion boilers often differ. ●

Description	2018	2017
Chips for external bioenergy industry (GWh) (lower calorific value)	1,510	1,449
Bioenergy produced in Moelven (GWh) (lower calorific value)	723	720
Consumed bioenergy (GWh)	508	495
Bioenergy sold to companies outside the Group (GWh)	70	66
Calculated average efficiency in combustion boiler (%)	80%	69%



Rail transport results in low CO₂ emissions per tonne kilometres (tkm) compared with, for example, road transport and is used wherever possible. Read more on page 25.



NEW BIOENERGY PLANT IN SOKNA

A new bioenergy plant will be built in Sokna in spring 2019. A hypermodern 24 MW bioenergy plant will supply both Moelven Soknabruket and the future pellets factory with thermal energy. This is the first time in Norway that a bioenergy plant will be fully integrated into a sawmill. Newly developed drying technology with heat recovery will also be introduced into the pellets production.

DISTRICT HEATING FROM MOELVEN ÅRJÄNG SÅG AB

The bioenergy plant at Moelven Årjäng Såg AB has greater production capacity than the company needs for its own purposes. Therefore, each year 12.5 GWh is sold as district heating to the surrounding area. This is equivalent to heating needs of around 800 houses. In addition to the district heating being produced with sustainable bioenergy, the CO₂ footprint from Moelven's operations are minimised because the biomass does not need to be carried anywhere.

AMBITIONS

- ▶ Energy consumption will be reduced

RESULTS

- ▶ 1,510 GWh (lower calorific value) of energy raw materials sold to the rest of the bioenergy industry.
- ▶ 723 GWh of biomass consumed in own bioenergy plant
- ▶ 508 GWh of bioenergy used in own operations

MEASURES

- ▶ Improve measurement and reporting of bioenergy production and consumption

MW

DID YOU KNOW THAT...

one megawatt is 1,000 kilowatts? This is a measure of output, or energy consumption.



Moelven wants to contribute to a sustainable future using wood. It begins with responsible forestry and continues all the way to your home.



Safeguarding our natural resources

Peak Performance

Investing in chips and in nature

Moelven Østerdalsbruket in Koppang has invested NOK 10 million in a new chip terminal. This makes the sawmill better able to utilise the entire log.

ONE OF MOELVEN'S SUSTAINABILITY GOALS is to safeguard natural resources, which means that we must utilise the entire log as raw materials. The company also depends on this to ensure good financial operations. The new chip terminal in Koppang, which was opened in January 2019, helps to ensure chip sales and sustainable operations.

"The terminal allows us to produce more chips and secure sales of our byproducts such as sawdust, wood shavings and bark. Achieving both is critical for us in the wood industry," says Anders Grønli, managing director of Moelven Østerdalsbruket AS.

Half become chips

In a sawmill, more than half of the log is turned into sawn timber, while the other half ends up as chips and bark. Therefore, it is important to also create value from the byproducts, which can be used for things like

renewable energy, as well as paper and cardboard production. The new terminal allows Østerdalsbruket to ensure the quality of chip and bark product deliveries.

"Loading the chips has been made more efficient and we have also achieved a safer entrance to the sawmill with better lines of sight," says Grønli, adding

"It is also good that trains are a sustainable alternative to road transport. The 56 train journeys that collect chips in Koppang each year replace 1,750 lorries a year."

Creating ripple effects

In addition to the chip terminal representing an investment in natural resources, it is also helping to create ripple effects that benefit many people.

Viable industry and more secure jobs in Koppang are socio-economically important for the entire Østerdal region," says Grønli. ●



MOELVEN ØSTERDALSB- RUKET AS

Sawmill with own planing mill in Stor-Elvdal Municipality in Hedmark.

Produces construction products for the Norwegian construction product market and byproducts such as sawdust, wood shavings and bark, which are transported by rail to Sweden.

NOK 171 million in turnover in 2018



Photo: Moelven

The new chip terminal at Moelven Østerdalsbruket AS.



“Loading the chips has been made more efficient and we have also achieved a safer entrance to the saw-mill with better lines of sight.”

Anders Grønli

Chips and bark from Moelven can be used for things such as renewable energy, as well as paper and cardboard production.

The mayor of Stor-Elvdal Municipality, Terje Hoffstad (left), and general manager Anders Grønli agree that the investment in the new chip terminal creates ripple effects that benefit many people. They are seen here at the opening of the terminal.



We are safeguarding our natural resources

Moelven seeks solutions. The Group has the ability and resources to be a leader in product development and innovation. We have always been a pioneering company and have taken advantage of the opportunities that changing times afford.

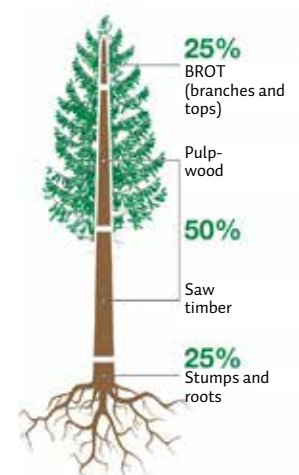
MOELVEN DOES NOT own any forest; it buys all of its timber from external suppliers. Moelven thus has no right to decide how the forests are managed, but can have an influence on forest owners by stipulating requirements, for example for certification. Moelven Skog AB, the Group's purchasing organisation in Sweden, also offers a wide range of forestry solutions. This gives the company a unique opportunity to help ensure that forest resources are managed and utilised optimally. Moelven also has an important duty to seek solutions and to use the opportunities processing raw materials affords, by operating efficiently and exploiting the full potential of the raw materials, to ensure that the customer is buying a sustainable product.

In the broadest sense, Moelven's value chain starts with the sowing of a seed and stretches right up to when the seed has grown into a tree and has been processed into a component that is part of a finished building. Although a much of the operations have been industrialised, they are heavily influenced by nature and the climate. There are many factors that we do not control. Trees grow differently, their quality varies with geography and weather conditions can hinder work in the forest, transport and the industrial operations themselves. For Moelven, industrial wood processing is about ensuring the optimum use of the forest's resources seen from the perspective of the customers, the environment, the forest owners and the industry. Forests, which generations have helped to nurture, are managed and processed into sustainable, future-oriented products.

The process starts in the finished products market, which demands sustainable products with certain properties, dimensions, strength and quality. Demand for pre-cut materials is increasing since this makes them easier to use while reducing the amount that goes to waste. For Moelven as a producer, it is important to ensure access to raw materials that enable us to meet the market's requirements, while minimising the amount of waste, preserving the value in the raw materials and ensuring transport distances are not too long. One example are deliveries of fixed length timber. The trees must be cut to lengths that both optimise produc-

tion AND make it possible to deliver the products the market wants. The breadth of Moelven's product portfolio allows us to use saw timber with many different dimensions. For example, a coarse butt end that would otherwise be sorted as pulpwood can be used as a raw material in plywood board production.

Moelven relies on good cooperation with both forest owners and forestry contractors to ensure the optimum use of the raw materials base around the production units. The management of forest during its growth phase is important for ensuring the best possible growth of good quality forest. During the actual felling, the trees must, insofar as it is possible, be felled and cut to the dimensions the industry wants. A modern logging machine has a number of modern control systems, and computer programmes ensure that each tree can be cut optimally with a view to its further use later in the value chain. Saw timber has the highest quality and thus highest value. Therefore, it is important for both forest owners and the industry that as much saw timber as possible is extracted from the forest. By actively cooperating with, and following up, the forestry contractors, Moelven Skog AB increased the proportion of saw timber from final felling by 1 per cent in 2018. This may sound negligible, but if all of the timber Moelven purchases every year could be similarly improved, this would amount to timber equivalent to the loads carried by around 1,100 lorries becoming saw timber instead of pulpwood. ●



Saw timber is the highest quality part of the tree, but together with the pulpwood part it accounts for just 50 per cent of the total biomass.

Good forest management is important for maximising the proportion of saw timber. Saw timber not only has the highest value, it also provides the greatest climate benefit because it is used to produce timber with a long service life as a carbon sink.

Source: Norwegian Forest Owners Federation:
Skog – en viktig del av klimaløsningen.

Sustainable materials

MOST IMPORTANT

Where and why is it important?

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

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

Policy and approach

Moelven's sustainability policy states the following:

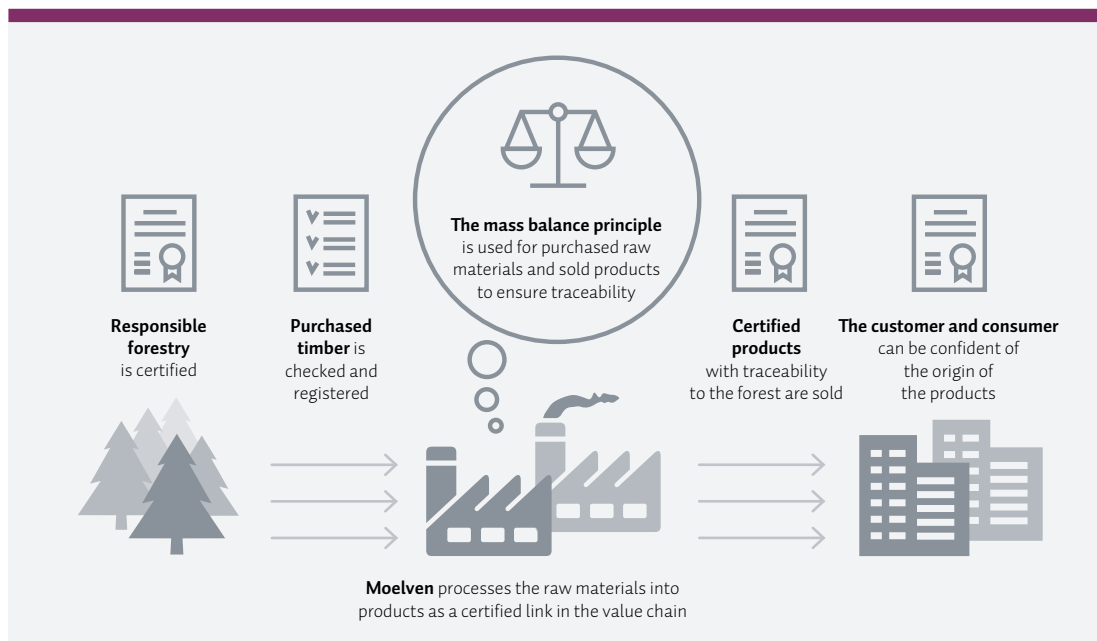
- ▶ Moelven must maintain and develop its systems for certified purchases, and maximise purchases and utilisation of environmentally certified raw materials from certified forestry.

- ▶ Moelven must maximise the exploitation of raw materials through optimising production and utilising the residual products
- ▶ Moelven shall not buy raw materials from:
 - Illegal harvests
 - Forests with a high preservation value
 - Forests where time-honoured or social rights are violated
 - Forests with genetically manipulated trees.
 - Natural forests that have been harvested with the intention of using the area for plantations or non-forestry applications.

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

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

Like PEFC™, FSC® is also an international NGO that works for responsible forestry, and issues certificates to actors who meet their requirements for responsible forestry. The difference between these two certifications lies mainly in the story of how they were developed. As a minimum, all of the raw materials handled by Moelven holds the level of controlled sourcing.





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

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

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

Evaluation of results

100 per cent of all of timber the Moelven purchases is controlled in accordance with controlled sourcing

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

Moelven's systems for buying timber ensure that it comes from responsible forestry. Moelven also purchases processed wood products that are a part of Moelven's product range. These products are purchased from several different actors who operate in different countries. All purchases of logs and timber are made in accordance with applicable requirements per product group as stated through our auditing process. Moelven is constantly working to ensure that the products come from responsible forestry. ●

AMBITIONS

- ▶ Moelven must contribute to sustainable forestry, and not purchase raw materials from controversial sources.

RESULTS

- ▶ 100 % of the sawlog supply are controlled with high share of PEFC™ and FSC® certifications.

MEASURES

- ▶ Increase the proportion of certified timber from Swedish forests for our Swedish sawmills. Continue checks and increase the proportion of certified retail products.

Moelven – a natural partner in BREEAM projects

BREEAM is Europe's leading environmental certification tool for buildings. The purpose of the tool is to encourage sustainable design and construction throughout the entire construction project, from the early phases to the finished and delivered building. It can be used for new buildings or rehabilitation projects within the industry, retail, offices, education and housing construction categories. An adapted set of criteria can be developed for other types of buildings.

BREEAM has today been developed and tailored to suit the markets of several countries. The Norwegian Green Building Council (NGBC) and the construction and property industry in Norway have adapted BREEAM for the Norwegian market through BREEAM-NOR. Here, construction projects can achieve certification through an authorised BREEAM-NOR auditor, based on environmental performance in nine categories: management,

health and indoor environment, energy, transport, water, materials, waste, land use and ecology, and pollution. Five levels of BREEAM-NOR certificates are issued: Pass, Good, Very Good, Excellent and Outstanding.

BREEAM has proven to be an effective tool for coordinating the various parties in a construction project and integrating a sustainable mindset in all links of the chain. International studies show that BREEAM buildings have a higher market value, lower operating costs and increased user satisfaction, among other benefits.

Today, Moelven has contributed to the process of developing several buildings with BREEAM certification, and Moelven actively strives to tailor its products and materials in order to simplify the process for customers when developing BREEAM projects. This is done by focusing on continuous improvements to the produc-

tion process, as well as through Moelven's climate-smart design.

BREEAM-NOR sets requirements for, among other things, material selection, such as deliveries of certified products in PEFC™ CoC or FSC® CoC, Environmental Product Declarations (EPDs), Eco-products, and emission tests on interior products.

Moelven mode has delivered system interiors for the Gullfaks office building. The building needed flexible solutions that would make it possible to choose between an open-plan solution and cell offices, or a combination of these, and it had to be easy to make changes in the future. The building, which was completed in 2018, achieved BREEAM-NOR Excellent environmental certification, which recognises qualities in excess of the authorities' minimum requirements.



Resource optimisation

Where and why is it important?

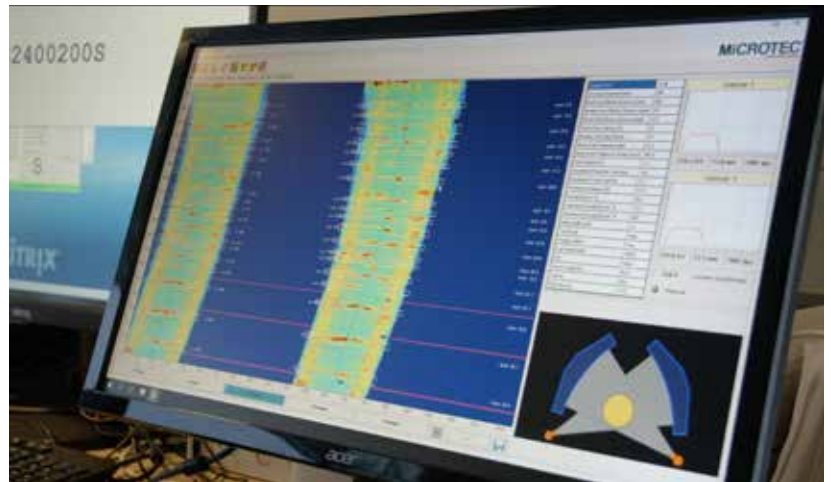
Moelven is a resource-intensive industrial company. For example, the industrial wood processing part of the Group has an annual raw material requirement of just under 4.5 million m³ of saw timber. Resource rationalisation and optimisation thus represent huge potential, even with minor production changes.

In order to ensure profitable operations, Moelven therefore depends on the optimum exploitation of resources and on ensuring that no raw materials go to waste. This is an important topic for Moelven since it affects profitability. It is an important topic for our surroundings since it involves avoiding wasting valuable natural resources.

Policy and approach

Moelven focuses on resource optimisation throughout the value chain. This applies not only to raw materials, but also to transport and among employees. See more about this in the chapters “Goods transport” and “Engaged and competent employees”.

At the sawmills, all of the logs are analysed to ensure the optimum extraction of materials. This means that each individual log is analysed with regard to size, twisting and the position of knots. The saw is then set based on this. Moelven is actively working on this issue and several facilities have installed X-ray machines that analyse all of the logs prior to sawing. The technique used in the subsequent processing provides possibilities for full traceability throughout the processing up to the finished timber. There are significant opportunities for improvement and development in advanced data analysis, which may improve extraction



on the basis of historical measurements and results. This is a part of the innovation project at Moelven Valåsen AB that is developing the “the smart digital sawmill”. Read more about this in the chapter “Energy consumption in own production”.

Operations at several of Moelven’s units are also based on the LEAN principles, which aim to reduce waste and increase efficiency. One of the focus areas is displaying real-time production data to the operators involved so that they have an opportunity to improve the work processes directly.

LEAN is also important with regard to safety at the facilities. Experience shows that many workplace accidents happen in abnormal operating situations, and it has been proven that order and tidiness are important risk mitigation measures. Read more about this in the chapter “Health, safety and the environment”.

Evaluation of results

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

Exploiting the whole log is an important principle for Moelven. Regardless of how the extraction is carried out, Moelven therefore ensures that all byproducts, including chips and bark, are used internally or sold. ●

A new log sorting line with both X-ray scanning and a 3D frame were invested in at Moelven Våler AS in 2018. The sawmill was Norway’s first to introduce X-ray scanning. X-ray scanning provides the sawmill with information on the location and size of knots, the proportion of heartwood and the density of the log. This information is used to sort the logs, such that the timber can be exploited in the best possible manner in the subsequent processing.

AMBITIONS

- ▶ We will make optimum use of the raw materials

RESULTS

- ▶ Recovery factor > 51%

MEASURES

- ▶ Following up LEAN projects and principles in the Group
- ▶ Implement relevant KPIs in order to optimise the use of residual raw materials

**MORE
IMPORTANT**

Resource-efficient design and packaging

Where and why is it important?

Moelven impacts the environment both through its own industrial operations and the use of our products. Through resource-efficient design and industrialised production in controlled environments, Moelven has good opportunities for optimising material use and reducing waste volumes in its factories, on construction sites and during the products' usage phase. For practical reasons, many products must be stored and transported exposed to the elements. The correct packaging is therefore important in order to preserve quality, although in many cases this also presents environmental challenges. Moelven uses a lot of plastic for packaging. Plastic takes a long time to break down in nature, and unnecessary packaging can potentially affect a customer's certification of a construction project.

Policy and approach

Moelven's sustainability policy states the following:

- ▶ Moelven shall optimise raw material utilisation to improve resource efficiency and to maximise the value of the raw material
- ▶ Moelven shall design products with a focus on resource efficiency, and assess the need for, and environmental impact of, packaging
- ▶ Moelven shall actively work to minimise the use of plastic, and strive to find alternative and sustainable materials to plastic

Packaging often ends up as waste without Moelven having an opportunity to influence how the waste is managed. It is therefore important to make sure that

as little packaging is used as possible and that it is as environmentally-friendly as possible. The job of surveying plastic consumption across the Group to identify opportunities where plastic consumption, and thereby costs, can be reduced will therefore continue. We will also actively strive to find alternative materials to plastic. The consumption of cardboard for packaging purposes is very low compared to the consumption of plastic. Plastic and cardboard obviously have different properties as far as their use for packaging is concerned, but we believe that there may be several areas where cardboard can replace plastic. This is one of the possibilities being explored in connection with the work on finding alternatives to plastic.

	2018	2017
Plastic packaging consumed (tonnes)	1,189	Not reported
Bioplastic packaging consumed (tonnes)	195	Not reported
Polyurethane (tonnes)	24	Not reported
Total plastic consumed (tonnes)	1,407	2,000
Plastic recovered (tonnes)	318	400
Cardboard packaging used (tonnes)	77	Not reported
Building modules delivered (modules)	8,069	9,000

Evaluation of results

The main reason for the reduction in plastic consumption from 2017 is believed to be the enhanced quality of reporting in 2018. However, it cannot be discounted that there may be still instances that have not been correctly measured and identified.

Moelven's module concept is an example of resource-efficient design. Through efficient mass production with good planning, resource usage is streamlined in the factories, waste quantities are reduced and the actual waste management becomes easier. Out on the construction site, both the time spent on the actual construction process and waste on the construction site are reduced.

Opportunities for recycling and reuse are also important. Moelven Modus has developed office solutions that can be modified and adapted to new needs without having to throw away everything on the site and buy everything new. The proportion of reuse projects is currently low, but we believe there is major growth potential within this segment. ●

AMBITIONS

- ▶ Climate-smart products and materials
- ▶ The use of raw materials will be optimised
- ▶ Actively strive to minimise the use of plastic and find alternative materials

RESULTS

- ▶ 1,407 tonnes of plastic consumed
- ▶ 318 tonnes of plastic recovered
- ▶ 8,069 building modules delivered

MEASURES

- ▶ Identify resource-efficient products in the Group
- ▶ Systematically identify opportunities for reducing waste and alternative packaging materials



**MORE
IMPORTANT**

Waste management

Where and why is it important?

As an industrial group, Moelven produces large quantities of waste. A large proportion of this waste can either be reused, recycled or used in energy recovery.

Waste management is an important topic for both Moelven and our stakeholders. In addition to its negative environmental impact, the quantity of waste is an indication of inefficient production that impacts the operating result and the prices of finished products.

Policy and approach

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

- ▶ Moelven shall design products with a focus on resource efficiency, and assess the need for, and environmental impact of, packaging
- ▶ Moelven shall actively work to reduce waste and achieve a minimum sorting ratio of 90 per cent for residual waste
- ▶ Moelven shall actively work to minimise the use of plastic, and strive to find alternative and 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. Therefore, the revised sustainability policy approved by the Group's corporate management in 2018 focuses on activities and initiatives that go further than what the legislation requires.

The various units in the Moelven Group are responsible for their own waste management. This is carried out in cooperation with local waste management companies, who have various options for dealing with waste.

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

Evaluation of results

The Moelven Group focused more heavily on waste management in 2018, and the level of detail in the reporting has increased considerably. We initiated dialogues with local waste management companies in 2018 in order to improve the quality of reporting and implement measures to reduce waste and increase the

Category	2018	2017
Total waste volume (tonnes)	12,627	11,532
Total hazardous waste volume (tonnes)	905	1,894
Total volume other waste (tonnes)	11,722	9,733

Waste management (tonnes)	2018	2017
Total quantity of hazardous waste sent to material recovery	49	Not reported
Total quantity of hazardous waste sent to incineration	128	Not reported
Total quantity of hazardous waste sent to composting	0	Not reported
Total quantity of hazardous waste sent for reuse (external)	2	Not reported
Total quantity of hazardous waste sent to landfill sites (external)	214	Not reported
Total quantity of hazardous waste sent to landfill sites (internal, e.g. bark landfill sites)	0	Not reported
Total quantity of waste sent to material recovery	2,420	Not reported
Total quantity of waste sent to incineration	5,247	Not reported
Total quantity of waste sent to composting	7	Not reported
Total quantity of waste sent for reuse (external)	8	Not reported
Total quantity of waste sent to landfill sites (external)	1,647	Not reported
Total quantity of waste sent to landfill sites (internal, e.g. bark landfill sites)	227	Not reported
Mixed waste (not sorted locally)	1,472	3,957
Waste sorted as normal wood	4,837	4,266
Waste sorted as impregnated wood	346	Not reported
Waste sorted as plastic	318	407
Other sorted waste (sorted locally)	2,394	1,582
Sorting ratio (%)	84.29%	65%

AMBITIONS

- ▶ Sorting and recycling waste as far as technically possible

RESULTS

- ▶ 12,627 tonnes of waste
- ▶ 905 tonnes of hazardous waste
- ▶ 318 tonnes of plastic
- ▶ 84.3% sorting ratio.

MEASURES

- ▶ Continue surveying waste
- ▶ Continue working to increase the sorting ratio to a minimum of 90%

sorting ratio. This has had a clear effect and the quantity of waste reported has increased dramatically. This increase is thought to be a result of better reporting and not an increase in the actual quantity of waste.

We also focused on waste management methods in 2018. Moelven has limited opportunities to influence the actual management of the waste, but it does have an indirect influence through its sorting and waste production. A significant amount of waste ended up in landfill sites in 2018, which from a circular economy perspective should be avoided wherever possible.


A groupwide target of more than 90 per cent was set for the sorting ratio in 2017. This is an ambitious target, but there were clear improvements in 2018 compared

with 2017. Measuring the sorting ratio across several regions is challenging since the definition of sorting will depend on the waste management methods that are available locally. For example, mixed waste could be defined as sorted if all of the mixed waste goes to incineration anyway. Therefore, a calculated sorting ratio is reported that is based on the proportion sorted by the company divided by the total quantity of waste.

The focus on the sorting ratio will continue in 2019 and each Moelven unit will be encouraged to continue its dialogue with the various local waste management companies and implement measures that reduce the quantity of waste, with a particular focus on waste that ends up in landfill sites. ●

Information board at the waste station at Moelven Limtre AS in Moelv



A photograph of a child's room with a stack of wooden blocks on a rug. A hand is reaching out towards the blocks. A purple circle is overlaid on the image, containing the text 'Focus on people'.

Focus on people

Moelven's mission is to create good spaces that are aesthetically pleasing, while also being functional and safe. We focus on the customer and end-user of our products and solutions.



“Great helping to ensure that everyone comes home in one piece”

For Malin and Kim, health, safety and environment (HSE) is an important part of their everyday work, and they believe that this should be the case for all of Moelven’s employees.

“I THINK THE COMPANY does a good job with HSE and feel that we have come a long way in this area,” Kim Nilsson says.

He is a production worker at Moelven Byggmodul AB in Kil in Sweden, as well as a safety representative and member of the company’s safety committee. As a part of the governing body for HSE work at Moelven, Kim plays a part in determining which requirements should apply and which measures should be implemented.

“We do not want to see a single injury at Moelven, and to achieve that goal we must maintain a constant focus on safety. I find being a part of this work both rewarding and fun,” Kim says, and is supported by Malin Karlsson, who adds:

“Quite simply, it warms our hearts to see both employees and supervisors take ownership of HSE, thus contributing to making sure we all come home in one piece.”

“Take responsibility yourself”

Malin works as a working environment engineer at Byggmodul in Sweden, and is thus the HSE supervisor in the company, which supplies various modules to the construction market. She is also a member of

the technical HSE forum, which provides recommendations to the safety committee. Both she and Kim agree on what the most important factor is when it comes to avoiding accidents and injuries:

“Each of us has to take responsibility and work in a smart and safe manner. By stopping to think for three seconds before performing new work operations, and by allowing a colleague about to perform a risky operation three seconds, we can create an even safer workplace.”

Malin and Kim are passionate about HSE, but they also believe that the strong focus on the area has been well-received by the other employees. Because although the company has seen improvements in terms of the number of injuries, we still have too many. They emphasise that while HSE is a field with a lot of theory, the real challenge lies in safety work always being top of mind in each and every employee.

“We need to enhance HSE awareness, skills and knowledge among both employees and managers. It’s about putting theory into practice and following up reported matters over longer periods of time. If we succeed, we will reduce the number of injuries,” say the HSE advocates Malin and Kim. ●



THE SAFETY COMMITTEE

Consists of the CEO, heads of divisions for Timber, Wood and Building Systems, the HR Director and two employee representatives.

Meets six times a year and is the governing body for HSE work at Moelven.

TECHNICAL HSE FORUM

Comprises the HSE resources from the Timber, Wood and Building Systems divisions, and HR.

Workgroup that forwards recommendations to the safety committee

HSE is what’s most important

“Our first priority at Moelven is HSE. We must have a safe and secure workplace that enables everyone to arrive home in one piece, both physically and mentally. This is what’s most important,” says Anne Cathrine Amdahl, HSE manager with Moelven.

The company actively works to reduce the number of injuries, and will in the future intensify its focus on sharing the lessons we

learn and working preventively,” she says.

“Everyone should benefit from being a part of the Moelven Group and learning from each other. We will do things ‘the Moelven way,’” says the HSE manager, elaborating:

“We want to be a company that other companies look up to because we care about each other, go the extra mile and do things better and safer.”



Photo: Moelven



“We do not want to see a single injury at Moelven, and to achieve that goal we must maintain a constant focus on safety.”

Kim Nilsson

Each individual employee must take responsibility and work in a smart and safe manner, which includes wearing the necessary protective equipment.

Kim Nilsson and Malin Karlsson are passionate about all employees enjoying their work and making it home in one piece.



Focus on people

Moelven's mission focuses on the customer and end-user of the company's products and solutions. Our mission is about Moelven creating both indoor and outdoor spaces that are aesthetically pleasing, while also being functional and safe.

MOELVEN IS NOT only accountable to the customers and end-users. Moelven is also accountable to employees, suppliers, partners and local communities.

Employees, suppliers and customers are entitled to a safe and secure workplace. Here, Moelven's code of conduct and HSE work are key. Engaged and competent employees are important for Moelven's long-term value creation strategy.

Moelven's products are largely based on renewable forests, although other products and chemicals are also used in processing the materials. Additives and chemicals can potentially impact people. This is covered in more detail in the chapter "Safe chemical use". ●

MOELVEN'S MISSION

We provide people with quality rooms

Photo: Eli Haugen Sandnes



In autumn 2018, the more than 500 pupils at Ytre Enebakk School were able to move into a brand new school made of wood, which is good for both the indoor environment and the climate. The building was designed by Planforum Arkitekt.



Moelven supports Save the Children Norway

Moelven has extended its partnership with Save the Children Norway and, as in 2017, donated NOK 500,000 in 2018 to help children and young people with their schooling and education in some of the world's poorest countries.

Photo: Save the Children Norway



Health, safety and the environment

Where and why is it important?

Health, safety and environment (HSE) is a collective term for work on health protection, environmental protection, the working environment, safety and security. This chapter mainly deals with those parts of HSE that concern people, while the environment is covered in the chapters “We have climate-smart products and solutions,” “Safe chemical use” and “Local environment.”

Health and safety are essential for sustainable value creation. This does not just apply to employees and contracted personnel, it also applies to customers, suppliers and others affected by Moelven’s operations. This is of course one of the areas of greatest importance to both Moelven and our stakeholders.

Policy and approach

Moelven has a goal of zero injuries. The “home in one piece” campaign (2010–2015) increased the focus on HSE and injury prevention. The “home in one piece” (“hel hjem”) slogan has been retained and is very familiar to everyone on Moelven today. We work on systematic prevention by sharing information about incidents, measuring results and improving skills. All employees should come home in one piece from their job at Moelven!

In 2017 and 2018, all employees at Moelven took an e-learning course on HSE. New employees and contracted personnel must take the course when they first start working for Moelven. There was a greater emphasis on consistent leadership and HSE follow-up for managers in 2018. The development and implementation of HSE courses for all supervisors started. This is expected to be completed in the first quarter of 2019.

Our goal is to increase the number of near accidents and hazardous situations that are registered. We know that increasing the number reported will increase the focus on them, which provides an opportunity to do something about situations before accidents occur.

The target set for 2018 was that the number of reported incidents should be equivalent to one per employee per year. We also set targets for absence due to illness and LTI in the Group.

Overall responsibility for HSE lies with the senior manager of the individual company. HSE is a topic in all board meetings, employee information meetings, and for the Group’s corporate management. The organisation of the HSE work also includes a dedicated safety committee and a technical HSE forum. The safety committee comprises corporate management and employee representatives. The technical HSE forum comprises representatives from all of the divisions, the HSE director and the HR director in Sweden. Both of these forums discuss and consider cases concerning groupwide HSE issues, sharing experiences and incidents. Safety audits and management inspections are also carried out in the companies, where representatives from other companies look at areas in need of improvement and compliance with internal and regulatory requirements.

Today, Moelven uses a common system, fPortal, for recording accidents, near accidents and hazardous situations. The system helps to ensure that one can easily and efficiently report incidents that occur, process the reports and maintain a good overview of injury rates, trends and the consequences of the incidents that occur. The system is an important aid for each company in their work on identifying, implementing and following up improvement measures in order to achieve the goal of zero injuries. In 2018, we started work on finding a new management system for HSE and quality. The goal is to ensure that the whole of Moelven has a comprehensive tool and can work on HSE more efficiently and systematically.

Each company has its own HSE manual, which every employee is given. This is based on a template issued by the Group, but contains the guidelines and routines that apply to the individual company. In addition to this, Moelven Workplace is used as a platform for electronically sharing information, questions and input on improvements.

A good, safe working environment is essential for reducing absence due to illness. Moelven systematically works on promoting health and well-being in order to prevent employees being absent due to illness. An employee survey is conducted every year and is actively used in this work. HSE is emphasised when new investments are made in production equipment. In the event of absence due to illness, employees are closely followed up through dialogue and assessments of their residual capacity for work. Health insurance for all employees helps to ensure that those who need it receive quicker treatment and thereby return to work faster.

Evaluation of results

Unfortunately, too many employees are still getting injured while on the job at Moelven. In 2018, there were 64 injuries that were severe enough to result in absence. This resulted in an LTI rate (number of injuries with absence per million worked hours) of



WE MEASURE

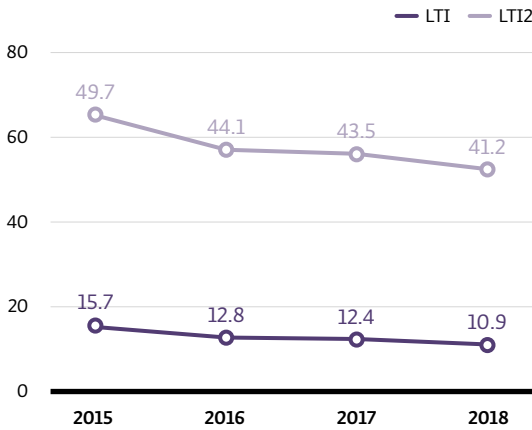
LTI rate (number of injuries with absence per million worked hours)

TRI rate (number of injuries with and without absence per million worked hours)

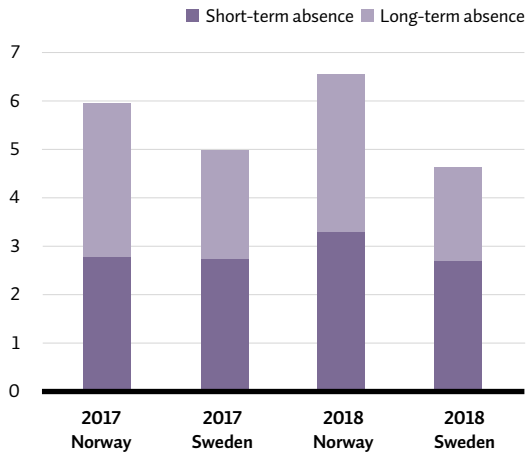
Number of registered incidents

Absence due to illness

Development in the number of injuries, 2015-2018



Absence due to illness at Moelven



10.9. Even though this is a reduction compared with 2017 (12.4), every injury is one injury too many. The result for TRI (number of injuries with and without absence per million hours worked) was 41.2 in 2018. This corresponds to a total of 241 personal injuries. The trend is in the right direction compared with 2017, when the TRI rate was 43.5 and there were a total of 257 personal injuries.

Going forward there will be a greater focus on TRI, since we believe this provides a better overall picture of the injury statistics at Moelven. Avoiding serious injuries is of course important, but we also want to avoid all less serious injuries, even if they do not result in absence.

The injuries sustained at Moelven occur in all divisions. The reporting system can be used to sort them by, among other things, category, who was affected,

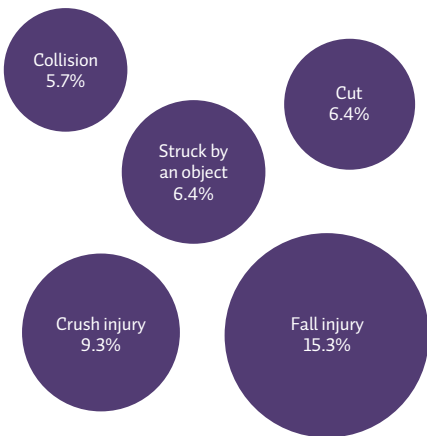
possible causes, injury class and type of incident. This makes it simple to gain an overview of trends. Of the incidents (accidents, near accidents and hazardous situations) reported at Moelven, the distribution by type of incident was as follows:

Absence due to illness at Moelven has remained stable in the last 3 years. Despite the systematic work in this area, we have not succeeded in reducing absence due to illness. The long-term target for the strategy period is an absence due to illness rate of < 4 per cent in 2021.

The results for Norway and Sweden differed somewhat, where Norway had both higher long-term and short-term absence rates in both 2017 and 2018.

As part of the work on increasing the focus on HSE, we provide a number of courses for our employees. Statutory courses, such as courses on hot work, industrial safety and working environment regulations for construction are largely provided in the individual companies. In addition to an HSE course for all employees, all managers, safety representatives and members of working environment committees must learn more about working environments. They do this through the “Bedre arbeidsmiljø” (BAM) (“better working environment”) course, which satisfies the statutory requirement for HSE training for this group of employees. In 2018, 29 employees completed the BAM course under the direction of Moelven.

Work on courses for supervisors that focus on consistent leadership and HSE started in 2018. This is expected to be completed in the first quarter of 2019, and will contribute to an even greater focus on following up employees and safer working environments. ●



AMBITIONS

- ▶ LTI < 5 in 2021
- ▶ TRI < 20 in 2021
- ▶ Absence due to illness < 4% in 2021
- ▶ 4,200 risk reports

RESULTS

- ▶ LTI: 10.9
- ▶ TRI: 41.2
- ▶ Absence due to illness = 5.53%
- ▶ 2,844 risk reports

MEASURES

- ▶ Increased use of resources
- ▶ Systematic work
- ▶ Good safety culture
- ▶ Focus on leadership and cooperation



Engaged and competent employees

Where and why is it important?

Moelven is a major employer with 3,514 employees, and it is important that the employees have a workplace where they are happy and have an opportunity to develop. This is of course important for employees, but it is also important for Moelven, since there is a clear correlation between employee satisfaction and Moelven's results.

Moelven also relies on being an attractive workplace for the talented employees of tomorrow. This is critical in ensuring long-term value creation in an industry undergoing constant change due to streamlining, product development and innovation in manufacturing processes, new products and solutions, and, not least, new climate-smart areas of use for wood.

Policy and approach

The Group's personnel concept involves supporting employees who want to develop their careers. This can be done in various ways. One example can be seen at Moelven Byggmodul AS in Moelv. In 2018, it hired a number of team leaders via an international recruitment process who now play an important role in further developing the production of modules. Together with an investment programme for new machinery and new technology, it is actively working on organisation, information flow and improvement work in teams.

The most important employee development takes place through what every employee does every day at work. Working together, sharing knowledge and working in a structured and methodical manner to achieve our goals represents the largest development potential

we have. Moelven also has a number of thematic forums in which employees from various units and countries meet to boost and share expertise between employees within the same discipline.

In 2018, it was decided to develop a management platform at Moelven. Given our decentralised organisation, it is important to build up Moelven's culture through our managers. The platform is under development and many employees will be involved in the process in 2019. New systems for following up both leadership and cooperation will become important tools in our organisational development.

Moelven participates in two regional trainee programmes in order to ensure it can recruit recent graduates: "Higher Ambition", in Värmland in Sweden, and "Trainee Innlandet", with its catchment area in Norway's Interior Region. These programmes recruit candidates with master's degrees and trainees often have administrative duties. In order to create a career path based on more operational positions, Moelven has started a trainee programme that recruits candidates with qualifications from university college (bachelor's degree) or tertiary vocational education.

It is also important to recruit good, development-oriented, young people as operators. More and more units in Norway are using the apprentice scheme. This upper secondary school model, in which young people spend a year or two (in some cases three) at school before their training continues for 2-3 years in a company, provides us with fantastically capable and versatile employees after they pass their craft certificate. Moelven Årjäng, among others in Sweden, has tested out a similar grant scheme, "the work introduction agreement", in which companies receive compensation for providing vocational training to a young person. The scheme is far less extensive than the Norwegian model, but can work well in some locations.

Evaluation of results

Moelven had 31 apprentices in 2018, which represents an increase of 35 per cent from the previous year. Most of these are training for their craft certificate within carpentry, timber manufacturing, industrial mechanics and production techniques. Overall, Moelven can offer a wide range of options and train apprentices in office work, computer electronics, automation, electrical engineering, logistics, glulam engineering and CNC machining.

AMBITIONS

- ▶ Engaged and competent employees

RESULTS

- ▶ Trainee scheme established in Norway
- ▶ 31 apprentices

MEASURES

- ▶ Start-up of trainee scheme in Sweden

Ten new employees joined Moelven's trainee programme on 1 September 2018. In addition to this, one trainee in the "High Ambition" trainee programme and two trainees in the "Trainee Innlandet" work for a Moelven unit for parts of the year.

Moelven's managerial development programme was put on hold in 2018 pending new strategic measures relating to management. However, our supervisor programme trained 24 participants on two courses (spring/autumn) in Sweden and seven participants on

one course in Norway.

One very important area of competence we develop in Moelven is the competence of employees to perform their work safely so that both they and their colleagues come home in one piece. Management skills are central in this work. Both the Timber and Building Systems divisions, therefore, conducted an HSE course in 2018 that focused on consistent leadership for all managers with personnel responsibilities. The Wood division has scheduled the course for 2019. ●

Moelven's trainee programmes

In September 2018, Moelven started up its own trainee programme for ten young engineering graduates from university college or tertiary vocational schools. For 18 months, the trainees will work and be trained in some of Moelven's units, while following a skills training programme that provides them with a large network and useful refresher courses. These are two of them:

Ahmed Nasrullah is a trainee in "The smart digital sawmill" project.



As a trainee at Moelven Valåsen, Ahmed Nasrullah gets to work with knowledgeable people within digitalisation and industry 4.0.

He is encouraged to take on new challenges in his work and has an

opportunity to do so in the "The smart digital sawmill" digitalisation project.

"I think Moelven is very innovative in the timber industry and have personally had the pleasure of taking part in a research and development project. The project focuses on utilising digitalisation and industry 4.0."

"What has been extra fun is that it is not only Moelven that runs it; other actors like RISE and RemaSawco are also involved. I have had the chance to meet and work with very interesting and knowledgeable people. The project has resulted in two patent applications."

Name: Ahmed Nasrullah

Course and educational institution:

Mechanical engineering (production and industrial economics) at the KTH Royal Institute of Technology in Sweden.

Age: 23

Workplaces: Module 1 at Moelven Valåsen AB, Module 2 at Moelven Industrier, Timber division

Steffen Engeland was assigned important responsibilities early on in his career – became a technical manager



As early as his first week as a trainee, Steffen Engeland started working as a project manager for a new stop time registration system. In the trainee seminars, he gained confidence in coming up with

solutions to challenges through discussions with trainees with similar duties.

"After 2 months I was assigned full responsibility as a technical manager/maintenance manager at the company for a period of time. This involved, among other things, delegating work tasks to eleven people, as well as purchasing equipment, tools and consumable materials."

"As a trainee at Moelven, you have a great opportunity to improve your skills and fast track your career."

Name: Steffen Engeland

Course and educational institution:

Mechanical engineer, bachelor's degree. The Norwegian University of Science and Technology (NTNU) in Gjøvik.

Age: 24

Workplaces: Moelven Eidsvold Værk AS



**MORE
IMPORTANT**

Safe chemical use

Where and why is it important?

Moelven uses chemicals in its production to increase the life of the individual products and materials, and to create good spaces. Some of these chemicals may have a potential impact on health and the environment, but they should not pose any risks when used properly.

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

Policy and approach

All relevant of the laws and regulations associated with the use of chemicals must of course be complied with at all times. Moelven also has the following goals:

- ▶ Moelven shall minimise the impact on soil and wa-

ter by using environmentally-friendly chemicals, oils and adhesives wherever possible

- ▶ Moelven must only handle of chemicals, oils and adhesives in designated places with approved enclosures or similar installations to reduce the impact of any spills

Moelven is also subject to a number of regulatory requirements related to chemical use. One EU Directive in particular applies to Moelven's products, the Construction Products Regulation (CPR), although Registration, Evaluation, Authorisation and Restriction of Chemicals (REACH) and the Biocidal Products Regulation (BPR) are also relevant. These regulatory requirements are integrated into Moelven's procedures, and all of the products that Moelven produces must comply with the requirements that follow from these directives.

Evaluation of results

In 2018, Moelven also conducted the first groupwide survey of selected chemicals and treatment products that are used in the Group. These chemicals and treatment products were chosen based on consumption, potential health impacts and stakeholder engagement. This year's reporting has identified some challenges in reporting and consolidating numbers. This mainly applies to those cases where chemicals are purchased as dry raw materials, as well as some inconsistencies with respect to whether the purchased volume or consumed volume has been reported. These issues will be addressed in 2019. ●

Impregnation

Creosote

Moelven Limtre has for more than 20 years developed, produced and assembled large, load-bearing glulam structures. Glulam for bridges is largely produced using impregnated pine. In some cases the bridges are also impregnated with creosote after all the processing has been completed. This is done at the customer's request, and is carried out by subcontractors. Creosote is a distillation product of coal tar, and glulam impregnated with creosote will therefore smell of tar. The treatment provides excellent durability and satisfies the Norwegian Public Road Administration's requirement that bridges must have a 100-year lifespan with a minimum of maintenance.

Creosote can be harmful to health. The risk mainly exists during the actual application of the substance, since the risk increases

upon exposure through skin contact in combination with sunlight. Moelven therefore recommends that everyone who works with and near creosote uses sunscreen to reduce the health risk. There are also other health and environmental risks linked to creosote, but given the volumes and applications the substance is used for in connection with glulam bridges, these risks are negligible.

Cu-impregnated products

The impregnation fluid Moelven uses for Cu-impregnation contains copper (CU). Copper is an element that is naturally found in soil. Copper is a vital trace element for humans, higher animals and many plants. Contact with oxygen 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 for lower organisms such as algae, fungi and bacteria, which provides the materials with very good resistance to rot.

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

To preserve human safety in structures, durability and the environment, 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.

Cu-impregnated wood waste must be delivered to authorised collection points, for example a municipality's recycling station.

Name	Description	2018 (litres)	2017 (litres)
Impregnation fluid	Area of application: Provides resistance to moisture, rot and fungus attacks and increases the product's lifetime.		
	Potential health impacts: Moelven's Cu-impregnated products contain the element copper (Cu). Besides this, the products contain no heavy metals.	956,890	983,430*
	Moelven also supplies some glulam based on TMF-impregnated materials. The impregnation fluid used does not contain heavy metals and consists of biodegradable anti-fungicides. No negative health impacts have been identified when the pressure impregnated products supplied by Moelven are used properly.		
Paint, primer and stain	Area of application: Paint, primer and stain are aesthetically pleasing, provide resistance to moisture, rot and fungus attacks, and increase the product's lifetime.		
	Potential health impacts: Moelven can paint, prime and stain products more efficiently and in a safer environment than is the case if products are treated after installation. The assessment therefore is that the industrial application of paint, primer and stain reduces health impacts when compared with on-site application.	2,150,519	2,357,627
Fire impregnation	Area of application: Moelven's unique Fireguard impregnation provides resistance and passive protection against fire. Used for both indoor and outdoor products.		
	Potential health impacts: The product has been shown to be an environmentally-friendly impregnation agent and meets the requirements of the EU Construction Products Directive, and waste can be handled as ordinary wood. The Fireguard fluid contains no bromine compounds or boric acid, which are on the priority list under REACH. No hazardous chemicals are emitted during use or in the event of fire.	100,300	147,580
Adhesive	Area of application: 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 in accordance with which type of adhesive has been used.		
	Potential health impacts: Moelven generally uses adhesives 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.	5,215,990	6,801,258
Osmo	Area of application: 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.		
	Potential health impacts: 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.	10,040	6,869*

* Errors were identified in the reporting for 2017 and the figures have been corrected.

AMBITIONS

- ▶ Moelven shall, wherever possible, use safe, environmentally-friendly chemicals

RESULTS

- ▶ The main groups of chemicals have been surveyed

MEASURES

- ▶ Continue and improve the monitoring of chemical use and continuously work to minimise their use, and explore alternatives

Better health with wooden interior products in the home

Furnish your home in wood and gain the health benefits of the forest with your purchase.

The Japanese call it forest bathing when people flee the city to a more peaceful existence in the forests and countryside. In the forest they can unwind, free of stressful inboxes, wearing traffic and mile-long queues.

Research shows that being in forests and the countryside is good for your health, and many find that their encounter with the forest gives them inner peace. But did you also know that research proves that you gain the same health benefits when you furnish your home in wood?

Calming effect

A 3-year European research project shows how wood materials absorb and release moisture, and thus help to create a better indoor climate. One example of this is when we cook food. The wooden products in the home will help to regulate the humidity in the room. Another health benefit is the ability of wood to retain and circulate heat. Wooden products are therefore energy saving.

The report also shows that wooden products have a calming effect with respect to stress. Researchers at the Norwegian Institute of Wood Technology have studied how hospital patients responded differently when they had a view of trees, rather than just white walls. In those cases where the patients could see trees, they experi-

enced less stress and recovered their health more quickly.

Yrsa Cronhjort, architect and coordinator of Wood2New at Aalto University in Finland, has researched perceptions of wooden products worldwide, and to Forskning.se she said:

“Wood is perceived as natural, and wooden furniture is preferred for its soothing properties. 90 per cent of the respondents said that wooden furniture results in better acoustics and a better indoor climate.”

Bring nature home with you

Moelven’s interior products are made of 100 per cent, high-quality wood. Only water-based and environmentally-friendly products are used for surface treatment. Our interior products therefore preserve the wood’s health properties. One example of products where we have focused on this is the new Sjøbod series, which was launched in autumn 2018. The Sjøbod series comes in five new colours, which ensures the panels fit equally well into a modern house or a cabin. Decorating using wooden panels is both trendy and health savvy.

With Sjøbod panels, the result is more than just a contemporary look, you also bring the best properties of nature home with you.







Local value

X-ray sorting timber ensures that Moelven Väler and Moelven Valåsen can use every single log appropriately. This results in less waste and is even more sustainable.

Creating new local value

“We’re probably a bit obstinate. Startups like this one are few and far between in the wood processing industry. For us, it means increased value creation from local resources.”

SO SAYS LARS STORSLETT, director of the newly established company Moelven Pellets AS. In 2018, Moelven decided to invest NOK 270 million in a new pellets factory and a new bioenergy plant in Sokna outside Hønefoss. The new plant will be fully-integrated with the sawmill at Moelven Sokna AS, and is the key to creating new jobs and new value from the region’s forest resources.

“When we launched the plans, I knew this was a red-letter day, both for me personally and for Moelven as a company. The last few years have seen far more closures in the industry than major investments like this one. The last time Moelven built something completely new from the ground up was in 1978, so obviously we are proud to be writing a new industrial chapter for Moelven,” says Storslett.

The plant will be completed in 2020, and the construction work and recruitment for up to ten new jobs started at the end of 2018.

“The new jobs mean a lot to the local community. With the help of the pellets factory and the integrated bioenergy supply for Moelven Soknabruket, we are strengthening our presence and modernising our footprint in the region for many decades to come,” says Storslett.

Locally sourced value

Moelven Soknabruket AS is one of the largest sawmills in Norway and given that half of the logs become timber and the other half become fibre products (wood chips), we are talking about large volumes that do not become timber. Moelven needs to sell these and by starting pellet production the company is taking steps on its own behalf to increase the value of its residual raw materials

from sawmill operations.

“It is important for Moelven to use the wood to its fullest. We manage a renewable natural resource and have an obligation to use it as best as possible. Therefore, the pellets and bioenergy venture in Sokna constitutes a highly sustainable and profitable way to manage our residual raw materials. Here, we are creating new value from local resources – both in the form of timber and labour,” explains Storslett.

Innovative venture

Enova is contributing NOK 66 million to the venture in Sokna. This is due to the adoption of solutions and technology that have never been tried before in a Nordic climate. The bioenergy plant accounts for a major proportion of the overall investment and it will supply both the sawmill and the pellet factory with energy. Together with, for example, the new drying technology, this will enable the thermal optimisation of the production processes. In short, this means that energy from the sawmill that otherwise would go to waste will be used in the production of pellets. Estimates show that by doing this, one can reduce energy consumption in pellet production by up to 37 per cent.

“Developing and adopting new climate solutions is urgent. A lot of work remains to be done when it comes to replacing fossil energy with renewable energy carriers. Residual products from Norwegian forests are a part of the solution. The technology demonstrated here makes the production of white wood pellets both cheaper and more energy efficient. This is green competitiveness in practice,” said State Secretary Atle Hamar of the Ministry of Climate and Environment when the plans were launched in Sokna. ●

“It is important for Moelven to use the wood to its fullest. We manage a renewable natural resource and have an obligation to use it as best as possible.”

Lars Storslett



▲ From the left:
 Lars Storslett, Moelven Virke and Moelven Pellets
 Morten Kristiansen, CEO, Moelven Industrier ASA
 Atle Hamar, State Secretary, Ministry of Climate and Environment
 Roar Hugnes, senior adviser, Enova
 Atle Nilsen, director, Moelven Soknabruket AS

◀ By starting pellets production, Moelven is taking steps to increase the value of the residual raw materials from sawmill operations.



Economic value creation in local communities

Where and why is it important?

Moelven operates in numerous small communities in Norway and Sweden where we are often a key employer and contributor in the local

economy. How we choose to organise and operate our activities will have direct ripple effects on the local communities, and we are also dependent on having good relationships with our local communities to attract the right people and work with our surroundings. It is important that we have a conscious attitude to recruitment, economic contributions and local purchases and contracts. This is particularly important where we are a major contributor to the local community.

Policy and approach

Moelven consists of 36 production companies at 45 production locations in Norway and Sweden. Most of the production companies have in common that they are located in geographically rural areas in close proximity to forest and historical timber ports. The companies are important cornerstone companies in their areas. Moelven's activities create ripple effects for subcontractors and the rest of the economy in the form of turnover, value creation and tax and duty payments. Moelven pays company tax and employer's national insurance contributions, and the employees pay income tax. So do our subcontractors. Together these constitute the companies' and the Group's social contributions.

Evaluation of results

The Confederation of Norwegian Enterprise's social contributions calculator allows you to estimate a company's direct contributions of taxes and duties. Calculations show that the total value created by

Moelven's Norwegian companies amounted to NOK 2,142.2 million in 2018, while the figure for our Swedish companies was NOK 2,377.2 million.

The Norwegian companies contributed NOK 453.4 million in taxes and duties, after deductions for government grants. The same figure for the Swedish companies was NOK 514.6 million.

The figures on the right were calculated using the Confederation of Norwegian Enterprise's social contributions calculator. The calculations were performed by totalling Moelven's total turnover, product inputs, tax on ordinary income, paid employer's national insurance contributions, and total paid income tax deducted from employees' salaries, less government grants.

The figures were obtained from Moelven's Norwegian and Swedish companies, and in the case of the Swedish companies converted to NOK (as at 31.12.18). Because the two countries have different tax and duty systems, and access to different markets, some uncertainty naturally exists regarding the figures. The calculation only shows the direct taxes and duties the Group contributes. The model does not include the secondary and tertiary effects (ripple effects) that Moelven contributes. The multiplier effect is significant for Moelven since the Group's individual companies, particularly in the Timber and Wood division, mainly belong to smaller communities in rural areas. Employees spend their income on purchasing goods and services, and subcontractors and their employees also represent substantial value creation and tax payments. Moelven emphasises buying local wherever possible and creating local job opportunities. Several of Moelven's companies are important "cornerstone companies" that make a significant contribution to jobs and business in these areas. This reinforces the significance of the ripple effects, since it is difficult to find alternative local value creation. ●



WHAT COULD MOELVEN'S TAX CONTRIBUTIONS PAY FOR?

1,977

nurses

9,179

pupils places in primary and lower secondary schools

10,193

metres of two-lane carriageway

TOTAL TAXES AND DUTIES CONTRIBUTED IN 2018

968.4

million NOK

Country	Norway	Sweden	Others*	Total
Revenue	8,844.5	8,893.3	183.1	17,920.9
Corporate tax	75.5	67.4	0.3	143.3
Total paid AGA	124.6	233.6	0.0	358.3
Tax paid on wages	255.1	214.5	0.0	469.6
Public grants	1.9	0.9	0.0	2.8
Number of employees	1,696.0	1,796.8	31.0	3,523.8
Tax and duty accounts	453.4	514.6	0.3	968.4

AMBITIONS

- ▶ Create more local jobs

RESULTS

- ▶ Estimated tax and duty contributions of NOK 968.4 million in 2018.

MEASURES

- ▶ Further develop assessments of economic value creation in local communities



Local environment

Where and why is it important?

Moelven has more than 20 incinerator plants that produce energy for the industrial production and onward sales of bioenergy. This is defined as renewable energy, but nevertheless affects the local environment through emissions of particulate matter, NOx and CO.

Moelven also impacts the local environment through transport and water consumption. Water is used for sprinkling over timber to prevent it from drying out and becoming damaged during storage.

Policy and approach

Moelven also impacts the local environment through many of our activities, such as energy production in biomass combustion, transport, waste management and water consumption.

Moelven’s sustainability policy states the following:

- ▶ Moelven shall be a natural part of the local community and contribute to economic value creation
- ▶ Moelven shall actively work to reduce its local environmental impact by focusing on continuous improvement
- ▶ Moelven must not violate the Pollution Act or similar legislation

Evaluation of results

As in 2017, Moelven continued surveying the bioenergy plants and their associated emissions. In 2018, we found that Moelven owns 28 boilers ranging in size from 1 MW to 15 MW, with an average of around 8 MW. These incinerator plants mainly use biomass to produce bioenergy.

Average concentrations of significant exhaust gases were also surveyed. Given that these are point

readings taken at different periods of the year, there will be some natural variation. Nevertheless, it is possible to see that average CO emissions have been reduced sharply. High CO values are an indication that an incineration process is not optimal, and therefore the reduction is considered very positive from both an environmental and a financial perspective.

Moelven experienced no breaches of the Pollution Control Act or similar legislation in either 2017 or 2018 that resulted in fines. ●

Emissions – average concentrations (PPM)	2018	2017
NOx	155	136
PM / Dust	97	99
CO	225	1,327

Biomass combustion plants	2018	2017
Total installed capacity (MW)	192	NA
Average capacity per plant (boiler 1 + boiler 2) (MW)	8	5
Number of boilers reported	28	24



Timber is a clean and natural raw material, but storing large amounts of timber or residual raw materials in a confined area can result in undesirable point impacts from some substances due to run-off. Moelven is therefore keen to ensure that storage spaces are properly constructed and drained.

AMBITIONS

- ▶ Reduce emissions of NOx, SOx, and CO

RESULTS

- ▶ No breaches of the Pollution Control Act or similar legislation in 2018 that resulted in fines

MEASURES

- ▶ Expand the surveying of local environmental impacts.



We are a reliable partner

Where and why is it important?

Reliability is one of our core values; Moelven must be a company people can trust. The importance of Moelven being a reliable partner has therefore been established as a fundamental prerequisite in the sustainability strategy and all of our activities must be based on this.

Moelven must have a conscious attitude to anti-corruption and competition law in all contexts and at all levels of the Group.

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

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

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

In the work on underpinning a comprehensive approach to anti-corruption at Moelven, a code of conduct and a description of procedures that must be followed in the event of undesired incidents have been developed at the corporate level, which must be complied with. 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.

Greater attention was paid to privacy in 2018 due to the EU General Data Protection Regulation (GDPR). Moelven has updated our privacy policies and routines to comply with the GDPR's requirements.

ONE OF OUR CORE VALUES

Reliable

Moelven can be trusted. We deliver at the agreed time and with the right quality. We focus heavily on transparency and honesty – being able to admit to weaknesses and mistakes provides a basis for progress and credibility.

Photo: Natasa Adzic



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. Good competence is the only thing that counts. Moelven will also adapt conditions for people with reduced functional abilities.

Nor does Moelven accept conditions at suppliers' or customers' operations that constitute breaches of the UN Declaration of Human Rights or other unethical situations, such as child labour. In the fourth quarter of 2018, we started preparations for a project aimed at increasing checks of the supply chain's compliance with the requirements Moelven sets. The project will be conducted in 2019.

The code of conduct has been included as a part of new employees' employment contracts since 2016. This ensures that new employees familiarise themselves with the code of conduct from their first day. As a supplement to the work on establishing a common platform for ethics among employees, some companies

in the Group have also established their own guidelines with local adjustments. For example, Moelven Modus has developed its own e-learning programme with associated tests.

Moelven has also established guidelines and procedures for whistleblowing. Moelven wants to make it clear to all employees that the Group wants a corporate culture based on transparency. It must be acceptable to report concerns and wrongdoing, and these must be discussed and resolved. The guidelines also provide for anonymity, and this is described.

Evaluation of results

In 2018, there were no reported occurrences of corruption or price fixing in the Moelven Group. This is of course a satisfactory result, but a constant focus on the topic is necessary and the current work must continue.

One instance of sexual harassment was recorded in the Group in 2018.

No need has been observed to implement special measures in addition to the established routines to ensure compliance with the code of conduct. ●



In connection with the introduction of the new EU General Data Protection Regulation (GDPR) in 2018, privacy procedures and policies related were revised and adapted to comply with the new regulation.

The routines are common to the entire Group and apply to all processing at Moelven of the personal data of employees and others who perform work or services for 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 the 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.

GDPR

The General Data Protection Regulation is the EU's privacy regulation. It **comes into force on 25 May 2018**.

Sales and marketing

After 25 May 2018, it is this that will apply to all of our sales and marketing communications:

- The contact must **actively consent** to being contacted by you and we must have documentation that consent has been given and of when it was given.
- **Contacts must be able to see the data** collected about them when they ask to see it.
- You must **store the data securely** and properly so that it cannot go astray.
- You must **not collect data you do not need**.

●●●●●●●●●●

- **Email:** If you have a subscription base that has accepted receiving newsletters/information/advertising from you, you must obtain their active consent in order to continue sending them this type of information after 25 May. If you use MailChimp as your solution for sending out newsletters, you can use this routine (link) to make your subscription base GDPR-ready.
- **Marketing in social media:** When you use the various advertising options that exist in, for example, Facebook or Instagram after 25 May, it is important to be aware that you are the one responsible for ensuring that this advertising complies with GDPR rules.
- **Google Analytics:** Addressed by corporate.
- **Web:** The web pages will be updated with personal data/privacy declarations. This will be done by corporate. If you collect data via the form features in Episerver, you are responsible for ensuring this data is collected in compliance with GDPR.
- **Image bank:** You may not use images of people in public spaces (e.g. our web) without the consent of the person pictured.
- **CRM:** We are not allowed to store data in the CRM system that is not relevant for the purpose. Data beyond this must be erased.

Personal data is any piece of information about an identified or identifiable natural

Examples of personal information:
name, gender, address, social media accounts, email, IP address, pictures, phone number

✓

You can store customer data that is relevant to the customer relationship

✓

You can send customer information to active customers by email

✗

You cannot send email containing marketing (i.e. that is intended to sell something) to people who have not consented to this or who you have not been in contact with previously

✓

It will still be legal to send addressed letters and contact people by phone

AMBITIONS	RESULTS	MEASURES
<ul style="list-style-type: none"> ▶ No instances of corruption or price fixing 	<ul style="list-style-type: none"> ▶ No reported instances of corruption or price fixing in 2018 	<ul style="list-style-type: none"> ▶ Pursue existing work on anti-corruption and ethics ▶ Increase checks of the supply chain's compliance with the UN Declaration of Human Rights and Moelven's code of conduct

Moelven GRI Index – 2018

The Global Reporting Initiative (GRI) is a network-based organisation that is behind the development of the world's most widely used sustainability reporting framework. The GRI framework contains principles, themes and indicators that can be used by organisations to measure and report economic, environmental and social performance.

Moelven reports in accordance with the GRI Standards' core option framework. The table below represents Moelven's reporting in accordance with the guidelines in the GRI Standards. For more information about GRI, see www.globalreporting.org.

GRI 102 – General disclosures

GRI no.	Description	Source (page in annual report or website)
Description		
102-1	Name of the organisation	Group's annual report, Note 1 (p. 50)
102-2	Activities, brands, products, and services	Group's annual report, Report of the Board of Directors (pp. 19-36)
102-3	Location of headquarters	Group's annual report, Report of the Board of Directors (p. 22)
102-4	Location of operations	Group's annual report, Report of the Board of Directors (pp. 22-23)
102-5	Ownership and legal form	Group's annual report, Report of the Board of Directors (pp. 21-22)
102-6	Markets served	Group's annual report, Report of the Board of Directors (pp. 22-23)
102-7	Scale of the organisation	Group's annual report, Key figures (p. 18)
102-8	Information on employees and other workers	Group's annual report, Report of the Board of Directors (p. 18) Focus on people (pp. 46-56), Note 11, p. 74
102-9	Supply chain	Climate benefits from the forest (p. 24), Safeguarding our natural resources (pp. 34-43)
102-10	Significant changes to the organisation and its supply chain	Group's annual report, Report of the Board of Directors (pp. 19-23)
102-11	Precautionary principle or approach	"Moelven practises the precautionary principle", also see the Group's Sustainability Report 2017
102-12	External initiatives	Report of the Board of Directors – Innovation (pp. 32-34), Group's Sustainability Report 2018: Moelven and the UN Sustainable Development Goals (p. 7), We are a reliable partner (p. 64)
102-13	Membership of associations	Group's annual report: Report of the Board of Directors – Innovation (pp. 32-34)
Strategy		
102-14	Statement from senior decision-maker	We are building a sustainable future using wood (p. 3)
102-16	Values, principles, standards, and norms of behaviour	Group's annual report (p. 23), Sustainability – the recurring theme from vision to strategy (p. 4), We are a reliable partner (p. 64)
Governance		
102-18	Governance structure	Group's annual report: Report of the Board of Directors – Corporate governance (pp. 21-22)
Stakeholder engagement		
102-40	List of stakeholder groups	We listen to our stakeholders (p. 11)
102-41	Collective bargaining agreements, Group's annual report:	Group's annual report: Note 3.25 (p. 59)
102-42	Identifying and selecting stakeholders	We listen to our stakeholders (p. 11)
102-43	Approach to stakeholder engagement	We listen to our stakeholders (p. 11)
102-44	Key topics and concerns raised	We listen to our stakeholders (p. 11)
Reporting practice		
102-45	Entities included in the consolidated financial statements	Group's annual report: Note 21 (p. 80)
102-46	Defining report content and topic boundaries	Our focus areas for sustainability (p. 8)
102-47	List of material topics	Our strategy (p. 13)
102-48	Restatements of information	pp. 18, 21, 55
102-49	Changes in reporting	We create good spaces has been eliminated as a separate important topic.
102-50	Reporting period	01.01.18-31.12.18
102-51	Date of most recent report	2017
102-52	Reporting cycle	Annual
102-53	Contact point for questions regarding the report	Rune F. Andersen - rune-f.andersen@moelven.com
102-54	Claims of reporting in accordance with the GRI Standards	Moelven GRI Index - 2018
102-55	GRI Index	Moelven GRI Index - 2018

Important topics

GRI no.	Description	Source (page in sustainability report)	Omission	Reasons for omission	Description of omission
Climate-smart products and solution – Energy consumption in own production					
<i>GRI 103 – Management approach</i>					
103-1	Explanation of the material topic and its boundary	pp. 21-22			
103-2	The management approach and its components	pp. 21-22			
103-3	Evaluation of the management approach	pp. 21-22			
<i>GRI 302 – Energy</i>					
302-1	Energy consumption within the organisation	pp. 21, 24, 31			
302-4	Reduction of energy consumption	p. 21			
<i>GRI 305 – Emissions</i>					
305-1	Direct (Scope 1) GHG emissions	p. 18			
305-2	Energy indirect (Scope 2) GHG emissions	p. 18			
305-3	Other indirect (Scope 3) GHG emissions	p. 18			
305-5	Reduction of GHG emissions	p. 18			
Climate-smart products and solutions – Goods transport					
<i>GRI 103 – Management approach</i>					
103-1	Explanation of the material topic and its boundary	p. 23			
103-2	The management approach and its components	p. 23			
103-3	Evaluation of the management approach	p. 23			
<i>Moelven indicator</i>					
Transport accounts		p. 23			
Climate-smart products and solutions – Climate benefits from forests					
<i>GRI 103 – Management approach</i>					
103-1	Explanation of the material topic and its boundary	p. 24			
103-2	The management approach and its components	p. 24			
103-3	Evaluation of the management approach	p. 24			
<i>Moelven indicator</i>					
Under development		NA	Not reported	Information not available	Work on establishing the indicator is ongoing.
Climate-smart products and solutions – Climate-smart design					
<i>GRI 103 – Management approach</i>					
103-1	Explanation of the material topic and its boundary	pp. 29-30			
103-2	The management approach and its components	pp. 29-30			
103-3	Evaluation of the management approach	pp. 29-30			
<i>Moelven indicator</i>					
Under development		NA	Not reported	Information not available	Work on establishing the indicator is ongoing.
Climate-smart products and solutions – Production of bioenergy					
<i>GRI 103 – Management approach</i>					
103-1	Explanation of the material topic and its boundary	p. 31			
103-2	The management approach and its components	p. 31			
103-3	Evaluation of the management approach	p. 31			
<i>GRI 302 – Energy</i>					
302-1	Energy consumption within the organisation	pp. 21, 24, 31			
Safeguarding our natural resources – Sustainable materials					
<i>GRI 103 – Management approach</i>					
103-1	Explanation of the material topic and its boundary	pp. 37-38			
103-2	The management approach and its components	pp. 37-38			
103-3	Evaluation of the management approach	pp. 37-38			
<i>Moelven indicator</i>					
PEFC™ and FSC® certification		pp. 37-38	Distribution by certification type is not presented	Information not available	Reporting routines will be developed in 2019

GRI no.	Description	Source (page in sustainability report)	Omission	Reasons for omission	Description of omission
Safeguarding our natural resources – Resource optimisation					
<i>GRI 103 – Management approach</i>					
103-1	Explanation of the material topic and its boundary	p. 40			
103-2	The management approach and its components	p. 40			
103-3	Evaluation of the management approach	p. 40			
<i>Moelven indicator</i>					
	Recovery factor	p. 40			
Safeguarding our natural resources – Resource-efficient design and packaging					
<i>GRI 103 – Management approach</i>					
103-1	Explanation of the material topic and its boundary	p. 41			
103-2	The management approach and its components	p. 41			
103-3	Evaluation of the management approach	p. 41			
<i>GRI 301 – Materials</i>					
301-1	Materials used by weight or volume	pp. 41, 12, 40			
<i>Moelven indicator</i>					
	Under development	NA	Not reported	Information not available	Work on establishing the indicator is ongoing.
Safeguarding our natural resources – Waste management					
<i>GRI 103 – Management approach</i>					
103-1	Explanation of the material topic and its boundary	pp. 42-43			
103-2	The management approach and its components	pp. 42-43			
103-3	Evaluation of the management approach	pp. 42-43			
<i>GRI 306 – Effluents and waste</i>					
306-2	Waste by type and disposal method	pp. 42-43			
Focus on people – Health, safety and the environment					
<i>GRI 103 – Management approach</i>					
103-1	Explanation of the material topic and its boundary	pp. 50-51			
103-2	The management approach and its components	pp. 50-51			
103-3	Evaluation of the management approach	pp. 50-51			
<i>GRI 403 – Occupational health and safety</i>					
403-2	Hazard identification, risk assessment, and incident investigation	pp. 50-51	Occupational illnesses, lost working days and statistics are not reported by gender. Moelven only reports injury statistics for its employees.	Information not available	Consideration will be given to developing reporting routines in 2019.
Focus on people – Engaged and competent employees					
<i>GRI 103 – Management approach</i>					
103-1	Explanation of the material topic and its boundary	pp. 52-53			
103-2	The management approach and its components	pp. 52-53			
103-3	Evaluation of the management approach	pp. 52-53			
<i>Moelven indicator</i>					
	Under development	NA	Not reported	Information not available	Work on establishing the indicator is ongoing.
Focus on People – Safe chemical use					
<i>GRI 103 – Management approach</i>					
103-1	Explanation of the material topic and its boundary	pp. 54-55			
103-2	The management approach and its components	pp. 54-55			
103-3	Evaluation of the management approach	pp. 54-55			
<i>Moelven indicator</i>					
	Consumption of chemicals	p. 55			

GRI no.	Description	Source (page in sustainability report)	Omission	Reasons for omission	Description of omission
Safeguarding local value – Economic value creation in local communities					
<i>GRI 103 – Management approach</i>					
103-1	Explanation of the material topic and its boundary	p. 62			
103-2	The management approach and its components	p. 62			
103-3	Evaluation of the management approach	p. 62			
<i>Moelven indicator</i>					
	Taxes and duties contributed	p. 62			
Safeguarding local value – Local environment					
<i>GRI 103 – Management approach</i>					
103-1	Explanation of the material topic and its boundary	p. 63			
103-2	The management approach and its components	p. 63			
103-3	Evaluation of the management approach	p. 63			
<i>GRI 307 – Environmental compliance</i>					
307-1	Non-compliance with environmental laws and regulations	p. 63			
<i>Moelven indicator</i>					
	Average concentration of significant exhaust gases	p. 63			
We are a reliable partner – Anti-corruption and ethics					
<i>GRI 103 – Management approach</i>					
103-1	Explanation of the material topic and its boundary	pp. 64-65			
103-2	The management approach and its components	pp. 64-65			
103-3	Evaluation of the management approach	pp. 64-65			
<i>GRI 205 – Anti-corruption</i>					
205-3	Confirmed incidents of corruption and actions taken	p. 65			
<i>GRI 206 – Anti-competitive behaviour</i>					
206-1	Legal actions for anti-competitive behaviour, anti-trust, and monopoly practices	p. 65			

KEY FIGURES FOR LAST 5 YEARS

Amounts in NOK millions	2018	2017	2016	2015	2014
THE GROUP					
Operating revenue	11,020.8	10,768.4	10,309.7	9,690.4	8,828.2
EBITDA	932.7	716.1	601.6	553.9	490.0
Depreciation	280.4	278.1	290.1	289.6	286.5
Impairment	66.1	17.6	16.5	49.5	0.0
Operating profit	586.2	420.4	295.0	214.8	203.6
Financial items	-8.0	-46.8	-42.5	-56.3	-88.2
Result before tax	578.2	373.6	252.5	158.5	115.3
Total capital	5,302.3	5,044.6	4,766.8	4,778.1	4,653.2
Equity in per cent	45.9	41.5	38.0	36.8	34.2
Operating margin in per cent	5.3	3.9	2.9	2.2	2.3
Investments	497.4	357.0	275.2	215.8	195.1
Number of employees	3,524	3,546	3,492	3,426	3,326
TIMBER					
Operating revenue	3,263.3	3,118.2	3,020.6	3,010.1	2,872.3
EBITDA	449.4	266.9	181.1	145.1	199.5
Depreciation	98.7	102.7	111.1	119.5	116.5
Impairment	7.4	17.6	16.5	49.5	0.0
Operating profit	343.3	146.7	53.5	-23.9	83.0
Financial items	-4.1	-17.4	-13.1	-9.0	-26.3
Result before tax	339.2	129.3	40.4	-32.9	56.7
Total capital	1,663.4	1,545.5	1,567.1	1,664.5	1,754.5
Operating margin in per cent	10.5	4.7	1.8	-0.8	2.9
Investments	136.7	99.2	64.2	75.9	67.6
Number of employees	620	650	674	679	703
WOOD					
Operating revenue	3,977.3	3,805.6	3,529.9	3,275.7	3,066.2
EBITDA	318.5	265.7	274.5	237.4	225.3
Depreciation and impairment	166.6	110.9	113.8	113.7	114.4
Operating profit	151.9	154.8	160.6	123.7	110.9
Financial items	-15.6	-24.8	-24.4	-27.1	-23.6
Result before tax	136.2	129.9	136.2	96.6	87.3
Total capital	2,466.9	2,413.9	2,151.6	2,146.7	2,044.8
Operating margin in per cent	3.8	4.1	4.5	3.8	3.6
Investments	198.1	119.9	114.7	96.8	82.1
Number of employees	1,108	1,079	1,039	1,009	993
BUILDING SYSTEMS					
Operating revenue	3,743.0	3,856.4	3,616.8	3,375.2	2,836.7
EBITDA	189.0	206.7	166.3	185.2	98.8
Depreciation and impairment	60.6	52.8	51.2	44.4	41.6
Operating profit	128.3	153.9	115.1	140.8	57.2
Financial items	-1.0	-1.6	-1.7	-0.1	6.4
Result before tax	127.4	152.3	113.4	140.7	63.5
Total capital	1,751.4	1,808.9	1,653.2	1,616.8	1,256.4
Operating margin in per cent	3.4	4.0	3.2	4.2	2.0
Investments	93.5	118.9	84.5	40.2	37.9
Number of employees	1,647	1,687	1,647	1,607	1,498
OTHER OPERATIONS					
Operating revenue	3,547.6	3,414.6	3,388.9	3,003.8	3,204.4
EBITDA	-24.1	-23.2	-20.3	-13.9	-33.6
Depreciation and impairment	13.1	11.7	13.9	12.0	13.9
Operating profit	-37.2	-34.9	-34.2	-25.9	-47.5
Financial items	12.7	-2.9	-3.4	-20.1	-44.7
Result before tax	-24.5	-37.8	-37.6	-45.9	-92.2
Investments	69.2	19.1	11.8	3.0	7.5
Number of employees	149	130	132	131	132



Photo: Hans Haug

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