



# SUSTAINABILITY REPORT 2022

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**Norske Skog**  
Skogn





**500 000 tons**

400 000 t news paper  
100 000 t improved paper

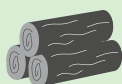


**380**

employees

**25**

apprentices



Wood consumption  
**1 050 000 m3**



Recycled paper  
**100 000 tons**



Energy use  
**1 300 GWh**



Turnover  
**3 billion**

## Markets

UK

Nordic countries

Central europe

Asia

## Certificates

ISO 9001

ISO 14001

ISO 50001

FSC Chain of Custody

PEFC Chain of Custody

Nordic Swan

EU-Ecolabel



Photo: Christian Trustrup

# About Norske Skog Skogn AS' operations

Norske Skog Skogn AS was founded in 1962 and the first newsprint machine started its production in 1966. Placed in Skogn in the municipality of Levanger, Norske Skog Skogn AS is one of the largest newsprint mills in Europe. The mill is operating three paper machines, and our strength has always been our low cost – high quality profile, making us competitive in most markets. Our core markets are the Nordic countries and UK but our mill is in general serving demanding customers worldwide. Norske Skog Skogn AS has its own port facilities and operates a twice-a-week regular line combining shipments of newsprint to our main hubs in the UK and Continental Europe, normally bringing recycled paper back on the return trip to be recycled in newsprint production at the Skogn mill. Since 2018 the mill has also developed improved newsprint qualities with higher brightness, a product that has been well received and has become an increasingly important product for us. Norske Skog Skogn AS is an important industrial player in the region of Trøndelag, currently employing 360 employees.



Our operations is also an important part of the value chain for the forest industry, consuming significant volumes of locally sourced pulp wood subject to FSC and PEFC sustainable forests certification schemes.

Our industrial facilities are operating under an environmental permit administered by Miljødirektoratet. Our activity has impacts on the external environment, however within strict requirements and subject to constant surveillance and monitoring. Our consumption of fossil fuels is reduced to a minimum and by the recycling of significant amounts of by-products, the resulting carbon footprint from the production of newsprint paper in Skogn is among the lowest in the industry.

We have available area next to our mill that is regulated for industrial purposes, and since 2018 Biokraft AS have produced bio-fuels partly based on shares of our bio sludges and effluent water amongst other types of organic wastes from fish-farms, thus further contributing to the sustainability and circular economy of our mill. Another company located next to us, Retura AS, are collecting demolition wood and utilizing it for new purposes. This shows that by cooperating and utilizing side streams we are able to strengthen our green footprint even more. Norske Skog Skogn are constantly looking for ways to improve our sustainability – and we are sure that we play an important role in converting products from fossil based to renewable based.

Håvard Busklein  
Managing Director

# Norske Skog Skogn AS and the UN Sustainable Development Goals (SDGs)

The UN Sustainable Development Goals (SDGs), adopted by world leaders in September 2015, are a call for action for all countries and businesses to promote prosperity while protecting the planet. The 17 SDGs address the global challenges we face, including those related to poverty, inequality, climate, environmental degradation, prosperity, and peace and justice. The SDGs are deeply interconnected and consist of three dimensions: biosphere, society and economy.

Norske Skog Skogn supports all the 17 SDGs but will in this report address how we relate to 7 of our most prioritized goals.



**SUSTAINABLE DEVELOPMENT GOALS**

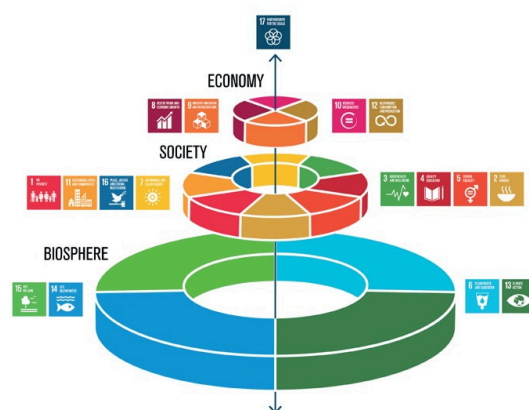
During discussion and interaction amongst the members of the management team at Norske Skog Skogn, we have dealt with the following questions:

- 1) How do the SDGs affect our operations and business strategies?
  - 2) How may we influence and contribute to the achievement of the specific goals?
- We realize that achieving the 17 SDGs requires changes. "As is" will not help the world reach these goals. Going forward, we will further assess in more

detail how the Norske Skog Skogn AS' operations and strategic approaches can contribute to achieving the SDGs. This report is prepared and approved by the Management team of Norske Skog Skogn AS.

## We create green value!

Norske Skog's core values of openness, honesty and cooperation as well as our policies and guidelines are built on the UN Universal Declaration of Human Rights and the 10 principles of UN Global Compact. These values also guide Norske Skog Skogn's business activities and sustainability work and are, together with the leadership principles, the foundation for ethical and competitive business conduct. To demonstrate Norske Skog Skogn's commitment we have prepared this report aligned with the UN Sustainability Development Goals (SDG's).



The SDG "Wedding cake" showing the interconnection between biosphere, society and economy. (Source: Azote Images for Stockholm Resilience Centre).



## Sustainable business strategy

Norske Skog have set ambitious targets for the development of the group, simply saying that by 2030, we shall both reduce our carbon footprint by 55% from a 2015-baseline, and convert our core business allowing 50% of our revenue stream to be generated from new business activity.

This is a challenge we have put upon ourselves and is representing a strong call for development of our operations. To guide us in our future development efforts we have expressed our ambition, as a vision-statement and motto going forward, by these few words;

### “We Create Green Value”

“We” - meaning that this is a common challenge for our employees and stakeholders, working together. In our future efforts, Norske Skog Skogn will have to rely on the competence and efforts from own employees as well as cooperation with group specialists, research institutes, suppliers of technology and the local community.

“Create” - meaning that we have to be open to new ideas, to new ways of working, to develop new product categories resulting in new revenue streams that can contribute to fulfill our target by 2030

“Green” - meaning that whatever we decide to focus on and produce in the future, it has to be a sustainable business, based on a timely and environmentally friendly operation

“Value” - meaning that whatever we are engaged in, our business at Skogn mill must add value for all stakeholders, from owners and employees to the local community in Levanger.

For us, the core values of Norske Skog will certainly have their full significance and meaning during the years to come. The SDGs will provide important guidelines to our team's efforts in order to develop Norske Skog Skogn going forward!

We  
create  
green  
value!





Photo: Valter Kristensen



# 1. Environment

## Ensure sustainable resource management

Norske Skog Skogn's production and activities shall have minimal environmental impact. We wish to contribute to protection of life on land through protection of wildlife around the mill and by only using timber delivered from sustainable forestry in our production.

With sustainable raw materials, good energy recovery, and reuse of waste from the production, the activity at Skogn is a naturally circular production process. It is a goal that also any new establishments or activities around the mill shall contribute to Norske Skog Skogn's strategy of circularity and green values.

## Sustainable fiber management

Timber and wood chips are our most important resource. We require that all our wood comes from sustainable forestry, and the fiber raw material can be traced from harvesting to the consumer. The proportion of trees planted after harvesting should be higher than what is harvested. Planting trees is a very important contribution to carbon capture. Through dialogue with foresters, we aim to contribute to increase competence and involvement within the whole value chain.

In 2022, > 90% of the pulpwood was certified to international forestry standards. The rest comes from controlled areas where we have insight into operating conditions. In addition, we use recycled paper, which also is a part of the traceability certification.

### Chain of custody for traceability in the value chain for fibre raw materials:

Certificate no:

DNSVE-PEFC-COC-254 DNV-COC-000191 DNV-CW-000191



## Sustainable consumption and production

We work towards optimizing our operations with respect to sustainable raw materials and energy as well as reducing waste and emissions from our production.

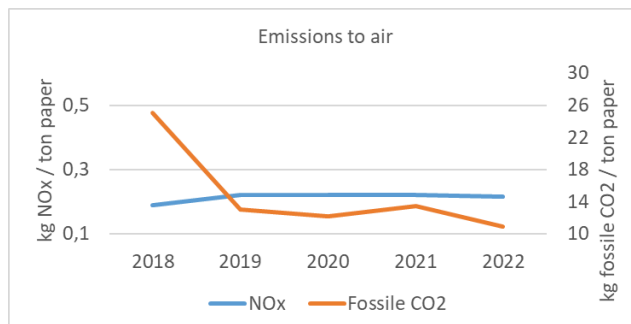
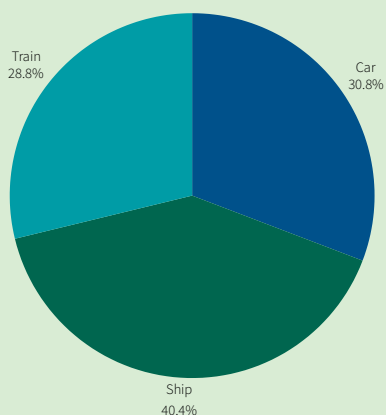
To be able to ensure a sustainable production for the future, we wish to investigate possible new uses of our renewable raw materials, such as wood and clear water. In 2021 we redesigned one of our paper machines so that it is ready for production of cardboard components for the packaging market. This is a good example of how to use our main raw material, wood, to make new products.

We aim to utilize our side streams such as fiber sludge and ash for new products and a more circular business. One example is the use of fines from the chip screening process in local pellet production. Other examples are use of fibersludge and ash with superior characteristics for different applications. Regional and national industries, universities/research institutions and funding instruments are involved in these projects.

We have several continuous improvement groups working on reducing input, energy- and water consumption. The planning of installation of a new reboiler in 2024 will be an important contributor to more resource-efficient operation.

### Transport of timber, chips, recycled paper and filler to Skogn 2022

Total goods: 896 480 tonse



## Combating climate change

Norske Skog uses sustainable raw materials and renewable energy in its operations, giving a low carbon footprint. Still, with climate change being our biggest global challenge, we wish to do our part to reduce emission of greenhouse gasses (GHG).

The CO2 emissions to air from Norske Skog Skogn are mainly biogenic. Emissions of fossil CO2 occur primarily from small amounts of oil that are used during start-up of our boilers, from burning waste from the wastepaper handling and burning of CaCO3.

Norske Skog group has adopted the European Union's ambitious goal of neutral societies by 2050, making reduction of greenhouse gas emissions is a key part of the business strategy. Long-term goal to achieve net zero GHG emission by 2050 and a 55% reduction within 2030 from the baseline in 2015.

We are involved in projects that are in both trial and implementation phase when it comes to carbon catching. The green tech company Ocean Geoloop has established a pilot rig capturing CO2 from our exhaust. The aim is to proceed with a large scale CCU/S solution based on the results from the pilot.

We have taken action to limit our CO2 -footprint related to transport. In 2022 about 30% of timber transport was done by train and will continue to develop rail logistics to have higher share of wood logistics on rail.



## Wastewater treatment performance

Life below water should be unaffected by discharged water from Norske Skog Skogn. The fjord areas should be attractive for fishing and outdoor activities.

A new permit was applicable from April 2022, with stricter limits for release of nutrients and solid suspension to the sea. Good operation of the wastewater plant is required to obtain these limits.

In 2022, Norske Skog Skogn experienced some issues with the performance of the treatment plant leading to enhanced values of fiber discharged to the recipient. Several concrete actions were initiated in 2022 to improve the performance of the waste water treatment plant, and the work will continue into 2023.

Since the mill started, the environment in the fjord around the mill has been monitored. Recent studies were conducted in 2021 and 2022 by an external water environmental specialist. The studies were conducted in accordance with the requirements of the water regulations and to document the condition of the fjord. Good conditions for fauna have been shown at all measuring stations and the areas appear to be little affected. The entire area seems to stay at a stable level with small changes over time.









## 2. Social

### Health and safety

Norske Skog Skogn is committed to provide a safe working environment for our employees, contractors and visitors. We wish to facilitate for employees and their families to take care of their own health, and we work to increase job attendance for all employees.

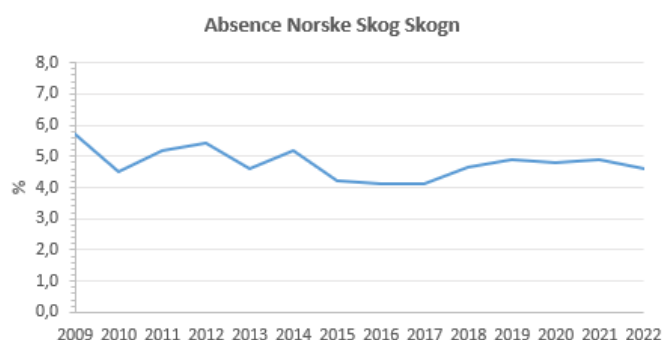
Health and safety considerations are integrated into our day-to-day business, as a mean to reach our goal which is to have zero injuries at our mill.

In 2022 we had no lost time injuries, but we did see an increase in total number of injuries. In order turn this trend and to reach our zero vision, a health and safety program was initiated in November which will continue into 2023. Main focus in this program is to increase each employee's risk awareness through concrete and visible actions.

We have company sports activities and other activities to help employees being active and social .

Norske Skog Skogn has had a stable absence rate the last years. Our occupational health service assist managers with sick leave follow-up and health care arrangements. This has helped us bring down the sick leave rate to a good level.

In 2022, the goal was to have less than 4% absence. The result was 4.6 %, which is a 6% decrease from 2021.





### **Promote lifelong learning opportunities for all**

The company facilitates education both before, after and during employment, as an important strategic solution to ensure the best possible result at every stage. Our employees are our most important resource as they are the key to optimal operations, continuous improvement in the business value chain and innovation leading to new and improved processes, and even products.

We shall invest in our people through training and development throughout the entire career.

This includes:

- Apprenticeship in various disciplines
- Documented and certified training
- Internal and external courses
- Continuous job training/rotation for all employees

The training is increasingly IT-driven, for example we have implemented a new digital HES basic training (SSG) for both employees and contractors.

On average, all personnel attend a minimum of 40 hours formal training each year, regardless of gender, race, ability and age.

Our ambition is to attract and keep top talents. We have following specific goals:

- Share of work certificate among operators > 95% by 2030
- 15 -20 new apprentices annually
- 1-3 bachelor's degree trainee in 2023/2024

Our most important recruitment channel is through the apprenticeship program. Our aim is that 10 % of our total workforce are apprentices, including both genders. We have a good collaboration with the school administration – especially vocational education.

In 2022 a trainee was hired to further increase Norske Skog Skogn's visibility among students, and local community in general. It is also important to keep up with the surroundings so that we can continue to be a preferred employer in the local community. We shall further develop the industrial infrastructure around the mill, taking advantage of our premises, supply of clean energy and water, and availability by ship, railroad and trucks, making the area attractive for new establishments.

## **Gender equality**

Traditionally, Norske Skog Skogn and the paper industry in general has been male dominated. The last decade, the female share has increased, but we realise that there is still a potential for improvement. In 2022 the female share at Norske Skog Skogn was 11%.

We wish to further increase this number and are committed to search for female talents to strengthen our company. As part of this work, the company gender equality committee was revitalized in 2022. This group will work in a targeted manner to increase recruitment of women and increase female share in leading positions.

# 3. Performance and ambitions

## Råstoff

|                    |             |
|--------------------|-------------|
| Timber, spruce     | 882 310 m3  |
| Sawmill wood chips | 170 905 m3  |
| Recycled paper     | 77 741 tons |
| Filler             | 24919 tons  |

## Energi

|                    |           |
|--------------------|-----------|
| Electrical energy  | 1 376 GWh |
| Purchased bio fuel | 179 GWh   |
| Oil                | 4 GWh     |

|                    |               |
|--------------------|---------------|
| <b>Fresh water</b> | 28 014 000 m3 |
|--------------------|---------------|

|                  |           |
|------------------|-----------|
| <b>Packaging</b> | 2500 tons |
|------------------|-----------|

## For heat recovery

|                             |             |
|-----------------------------|-------------|
| Fibre, bio sludge           | 10751 tons  |
| Deinked pulp sludge         | 15647 tons  |
| Bark                        | 49743 tons  |
| Paper and wood waste        | 1443 tons   |
| Waste from recycled paper   | 2351,7 tons |
| Purchased demolition timber | 59000 tons  |

## Energy recovery

|                                  |         |
|----------------------------------|---------|
| Thermal energy from TMP          | 531 GWh |
| Self-produced heat               | GWh     |
| Energy recovery from waste water | 11 GWh  |

## Waste

|                          |             |
|--------------------------|-------------|
| Ash to own landfill      | 13 768 tons |
| Ash to external landfill | 30 tons     |
| Municipal landfill       | 489 tons    |

## For recycling

|                           |          |
|---------------------------|----------|
| Iron/metal                | 226 tons |
| Bark residue for sod roof | 547 tons |
| EE waste                  | 12 tons  |

## Hazardous waste

|                                  |         |
|----------------------------------|---------|
| Waste oil, oil rags etc          | 37 tons |
| Paint, batteries, chemicals etc. | 5 tons  |

## Emissions to air from combustion

|                            |             |
|----------------------------|-------------|
| Dust                       | 2,24 tons   |
| Metane                     | 34 tons     |
| Carbon monoxide            | 9,8 tons    |
| Nitrogen oxides            | 138,8 tons  |
| Sulfur dioxide             | 0,2 tons    |
| Carbon dioxide (fossile)   | 5659 tons   |
| Carbon dioxide (bio fuel)  | 212950 tons |
| Volatile organic compounds | 177 tons    |
| Total organic carbon       | 0,9 tons    |
| Nitrous oxide              | 10 tons     |
| Dioxines                   | 0,02 gram   |

## Discharge to water

|                        |               |
|------------------------|---------------|
| Coolant and seal water | 21 000 000 m3 |
| Cleaned process water  | 7 700 000 m3  |
| Suspended solids       | 1 069 tons    |
| Chemical oxygen demand | 4 124 tons    |
| Phosphorus             | 7 tons        |
| Nitrogen               | 69 tons       |

## Paper production

|                        |              |
|------------------------|--------------|
| PM1                    | 146 856 tons |
| PM2                    | 144 875 tons |
| PM3                    | 209 695 tons |
| <b>Total newsprint</b> | 501 426 tons |





# Sustainability goals



## overview



| BIODIVERSITY |  |   |  |
|--------------|--|---|--|
| SDG          | FOCUS AREA   | TARGET  | PLANNED ACTIVITIES   |
|              | Reduce greenhouse gas (GHG) emissions                                      | Reduce CO2 emission kg/ton paper by 55 % in 2030  | <ul style="list-style-type: none"> <li>Cooperation with Ocean Geoloop, program dedicated to establishing a pilot for CCU/S</li> </ul>  |
|              |  | To have net zero CO2 emission kg/ton paper in 2050  | <ul style="list-style-type: none"> <li>Cooperation with Ocean Geoloop, program dedicated to exploiting results from pilot for CCU/S, with the aim to proceed with a large scale CCU/S solution</li> </ul>  |
|              |  | CO2 -footprint related to logistic operations   | <ul style="list-style-type: none"> <li>Replacing internal Develop rail logistics to have higher share of wood logistics on rail, show the effect of this in form of reduced climate footprint from emissions in connection with timber transport.</li> <li>fossil-based vehicles with electric vehicles</li> </ul> |
|              | Handle climate risk and business opportunity understanding                 | To reduce emissions of SO2 and NOX from our operations  | <ul style="list-style-type: none"> <li>To remain in compliance with current and future emission permits at the Skogn Mill. New equipment for monitoring exhaust gasses.</li> </ul>   |
|              | Improve water quality through effluent treatment                           | Reduce discharge of phosphor, nitrogen, solid suspensions and COD to meet requirements in new emission permit by 2024 | <ul style="list-style-type: none"> <li>Measures to ensure good operation of the wastewater treatment plant.</li> <li>Optimize the ECSB reactor in cooperation with Biokraft</li> </ul>   |
|              | Biodiversity in the fjords should be unaffected by discharge from the mill | To continuously monitor the conditions in the fjord   | <ul style="list-style-type: none"> <li>Regular fjord examinations performed by independent part</li> </ul>   |
|              | Contribute to sustainable forestry   | To ensure all wood consumption to be 100% controlled wood   | <ul style="list-style-type: none"> <li>Maintaining all FSC- and PEFC certificates</li> <li>Maintaining dialog with all wood supplier and implement external forest audits</li> </ul>   |

| Economy   |   |   |  |
|---|---|---|--|
| SDG   | FOCUS AREA  | TARGET  | PLANNED ACTIVITIES   |
|  | To align innovation activities with the long-term group strategy    | Developing the industrial infrastructure at Skogn mill. Attracting new industrial partners to Fiborgtangen Bio-park | <ul style="list-style-type: none"> <li>Developing infrastructure at Fiborgtangen Bio-Park in order to attract new and future industrial partners</li> </ul>  |
|   | To commercialize promising and profitable innovation results        | Investigate and explore new possibilities in Bio-char and energy production at Skogn mill                           | <ul style="list-style-type: none"> <li>Establish and develop own competence on the relevant topics through allocation of new and existing internal resources.</li> <li>Establish regular contact and facilities at Skogn mill dedicated to R&amp;D-partners (i.e. RISE PFI, Ocean GeoLoop, Sintef)</li> </ul>  |
|  | To ensure sustainable use of materials and energy in our operations | Utilize all waste streams, sludge, bark, RP-waste, production waste in the energy production and recirculation      | <ul style="list-style-type: none"> <li>Produce green turbine power from the steam turbine</li> <li>-Utilize fibre sludge and develop a commercialized future product within agriculture</li> <li>Ash; Zero ash to landfill by 2030 by finding new use of ash in concrete- and cement products</li> <li>Gain 40 GWh through utilizing hot discharge water from the mill operations by 2025</li> </ul> |
|   | To operate mills with high energy efficiency                        | Measuring Capex used on energy source improvements equal to 170 GWh by 2025   | <ul style="list-style-type: none"> <li>Produce green turbine power from the steam turbine</li> <li>Gain 40 GWh through utilizing hot discharge water from the mill operations by 2025</li> </ul>   |
|   | To reduce waste from our operations                                 | To have no ash delivered to landfill in 2030  | <ul style="list-style-type: none"> <li>Cooperation with several players in the cement industry in order to use ash in cement- and concrete products</li> <li>Cooperate with research-organizations in order to develop the use of ash in soil-stabilization and road construction</li> </ul>   |
|   | To ensure responsible supplier value chain handling.                | To ensure supplier adherence to Norske Skog code of conduct within 2023.  | <ul style="list-style-type: none"> <li>Supply department establishes questionnaire list, and carry out external audits</li> </ul>  |



| Society   |  |   |  |
|---|--|---|--|
| SDG   | FOCUS AREA   | TARGET  | PLANNED ACTIVITIES   |
|  | To increase job attendance for all employees.            | Absenteeism rate < 4,0%   | <ul style="list-style-type: none"> <li>Present the absenteeism in trends. Cooperate closely with local health service. Maintaining close dialogue with everyone who is on sick leave.</li> </ul>   |
|   | To ensure a healthy and safe working environment.        | Target 2022: H1 = 0, H2=0   | <ul style="list-style-type: none"> <li>Present and implement a "zero vision". New Synergi, ongoing training program.</li> <li>Implementation of electronic solution for annual safety course for all employees and contractors</li> </ul>  |
|  | To attract and keep top talent                           | Work certificate share of + 95% among operators by 2030<br>15-20 new apprentices annually<br>1-3 bachelor's degree trainee 2022/2023  | <ul style="list-style-type: none"> <li>Participate in local program for internships</li> <li>Establish an own educational program for "adult trainee certificates".</li> </ul>   |
|   | To invest in our people through training and development | 100 % completed employee performance reviews with focus on training and responsibilities  | <ul style="list-style-type: none"> <li>Focus on i.a. digital competence</li> <li>Continuing education; Objectives for the addition of candidates who want further education and career development</li> <li>Corporate social responsibility; Job training for external candidates with the goal of providing education and new job!</li> </ul> |
|   | To invest in our people through training and development | Offering training and supplementary education for all through their entire job career to attract and contain highly skilled employees | <ul style="list-style-type: none"> <li>Develop podcasts addressing sustainability and digitization</li> <li>Establish annual training plans</li> <li>Annual review of roadmap to sustainability and strategy</li> <li>Highlight the importance of development talks and competency plans</li> <li>Leadership training programs.</li> </ul>     |

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