Environment

Stolt-Nielsen has far-reaching environmental ambitions. From emissions reduction and energy efficiency to waste management and water conservation, we take a strategic approach to improving our performance.

2021 was a defining year, with comprehensive efforts to establish environmental data baselines and reporting practices that will help us measure our progress and achieve our ambitions.

Indicator	2021 performance	Explanation	Business	Reference
GHG Emissions Scope 1	**5.5%[1]** ↓ 2021: 1,626,515 MT[1] 2020: 1,720,663 MT[2]	The reduction was mainly down to operational efficiency improvements of 5.7%. Scope 2 and 3 greenhouse gas (GHG) emissions are not currently available. We are working towards publishing the data. 1. Including Scope 1 GHG emissions from E&S Tankers' fleet of 39,803 MT CO_2 in the third and fourth quarters. This fleet operates under a separate data reporting system. 2. Excluding Scope 1 GHG emissions from SNITS (inland tankers) subsidiary of 91,383 MT CO_2. This fleet operates under a separate data reporting system.		• GRI 305-1 • See pages 28-29
GHG Emissions Scope 1 and Scope 2[1]	**0.1%** ↔ 2021: 108,884 MT 2020: 108,947 MT	Slight reduction in CO_2 generated, despite increased throughput. Several terminals now purchase electricity from green suppliers. We are also investing in technology and research, ranging from pipe heating optimisation to on-site installations of solar panels. 1. Includes joint ventures.		• GRI 305-1 • See pages 28-29
GHG Emissions Scope 1[1]	**11.0%** ↓ 2021: 11,972 MT 2020: 13,426 MT	Reduction in CO_2 emissions was achieved through the purchase of renewable energy, continuous focus on improving efficiency and investing in technology to reduce energy consumption. CO_2 emissions per tank received by our fully owned depots fell from 199 kg in 2020 to 185 kg in 2021. 1. Includes depots only.		• GRI 305-1 • See pages 28-29
GHG Emission Intensity (AER)	**3.3%** ↓ 2021: 11.06 2020: 11.44	Stolt Tankers uses the Annual Efficiency Ratio (AER) to measure the intensity of its carbon emissions. This measures carbon emissions relative to a ship's capacity and distance travelled. AER decreased by 3.3% during the year.		• GRI 305-4 • GRI 305-5 • See page 28

Growing Sustainably *(continued)*

Indicator	2021 performance	Explanation	Business	Reference
Sulphur Oxide Emissions	**3.6%** ↓ 2021: 7,352,302 kg 2020: 7,629,003 kg[1]	Initiatives to reduce overall fuel consumption resulted in a significant reduction in SOx emissions from our fleet. 1. Restated to reflect the correction of manually entered data.		• GRI 305-7 • See pages 28-29
Nitrogen Oxide Emissions	**7.2%** ↓ 2021: 46,193,438 kg 2020: 49,777,754 kg[1]	Overall NOx emissions reduced in line with our GHG Scope 1 emissions. 1. Restated to reflect the correction of manually entered data.		• GRI 305-7 • See pages 28-29
Energy Consumption[1]	**3.3%** ↓ 2021: 58,000,000 KWh 2020: 60,000,000 KWh	The amount of energy consumed by terminals depends on the products stored, the amount of product pumped and weather conditions. To reduce consumption we are deploying new technologies and more efficient devices. 1. Includes joint ventures.		• GRI 302-1 • GRI 302-5 • See page 29
Water Consumption[1]	**19.4%** ↑ 2021: 430,000 m^3 2020: 360,000 m^3	There was a significant increase in water consumption during 2021 due to increased tank cleaning, driven by a changing product mix at our Houston and Singapore terminals. As product volume increased so did the requirements for tank and line cleaning. 1. Includes joint ventures.		• GRI 303-5 • See page 30
Water Consumption	**12.3%** ↓ 2021: 112,100m^3 2020: 127,800m^3	There was a decrease in water use at our wholly-owned depots as we focused on improving efficiencies, collecting rainwater and recycling condensate from heating where possible.		• GRI 303-5 • See page 30
Waste to Landfill[1]	**11.4%** ↓ 2021: 5,964 m^3 2020: 6,733 m^3[2]	All waste from our ships is disposed of in line with the International Convention for the Prevention of Pollution from Ships (MARPOL). 1. Includes Stolt Tankers' shipping operations only. 2. Restated due to late reporting from some ships.		• GRI 306-5 • See pages 30-31

Business key

Stolt Tankers | Stolthaven Terminals | Stolt Tank Containers | Stolt Sea Farm

Performance key

↑ Negative change from prior year ↓ Positive change from prior year ↔ No change from prior year

Ambitions for reducing our environmental impact

Stolt Tankers

- Reduce carbon intensity by 50% (relative to 2008 levels) by 2030
- Have at least one carbon-neutral ship in the fleet by 2030
- Run a carbon-neutral business by 2050

Stolthaven Terminals

- Primary activities, including the storage and handling of products, to be carbon-neutral by 2040

Stolt Tank Containers

- 50% renewable energy consumption at wholly owned depots by 2030
- In line with IMO commitments, a 40% reduction in our transportation partners' carbon footprint (relative to 2008 levels) by 2030

Stolt Sea Farm

- Zero waste to landfill by 2030, focusing on recycling and energy recovery
- Reduction of fish products in our ongrowing feed (relative to 2020 levels) by 2030: 65% reduction for sole and 50% reduction for turbot

Strategic planning, sound governance

GRI 307

The Stolt-Nielsen approach to protecting the environment is underpinned by strong governance frameworks and processes. These are regularly reviewed to ensure they adhere to changing regulations and incorporate the latest best practices.

Part of this involves regularly testing and updating business contingency and emergency response plans for all our sites and across our fleet, ensuring teams are fully equipped to manage potential incidents such as collisions, contamination, spills, leaks, fires or explosions. For land-based facilities in areas at risk of extreme weather events, such as flooding or hurricanes, contingency plans ensure operations can return to normal quickly and safely. We test our plans in many ways, including conducting drills in partnership with customers, local incident response services and regulatory agencies. These emergency response activities give our teams the opportunity to share lessons learned across different locations, refine their plans, and develop strong working relationships with stakeholders.

Our facilities and ships report all incidents that have the potential to impact the environment using our robust management system. We classify any spill that involves a release of materials that pose a major health and safety risk to people or damage to the environment as significant. We are pleased to report that there were no significant spills in 2021.

Our approach to protecting the environment is driven by our ambition to reduce our environmental impact. We established goals for all our businesses in 2020, and during 2021 focused on establishing baselines for our environmental data. These baselines provide a deeper understanding of our carbon footprint, which puts us in a strong position to plan initiatives that help achieve our ambitions.

In 2021, to better align with the International Maritime Organization (IMO) and the shipping industry, and to enable more accurate benchmarking, Stolt Tankers modified the way it measures carbon intensity across the fleet, moving from using the Energy Efficiency Operational Indicator (EEOI) to the Annual Efficiency Ratio (AER). For 2021, we measured our 2008 emissions baseline using the AER. Our baseline was validated by the world's leading maritime classification society DNV, and we measured a 29% reduction in CO_2 emissions since 2008.

In addition, we developed the capability to report carbon emissions using the Sea Cargo Charter, which helps customers to better understand the sustainability of their supply chain. As part of this, we participated in the committee that developed the reporting criteria. To help enforce strong environmental practices across Stolt Tankers' supply chain, we also launched a new responsible supplier agreement, which assesses suppliers against a set of environmental criteria. We are pleased to report that 100% of new vendors signed up, and we have an ongoing audit programme for existing suppliers based on their risk profile.

Once again, Stolt Tankers' environmental efforts received positive recognition, retaining its silver rating from EcoVadis for sustainability. During the year, 99 of our ships were awarded the CSA Certificate of Environmental Achievement. In addition, 72% of our ships (42 in total) that called at US ports during the past three years became eligible for the US Coast Guard's Qualship 21 certification. Membership is testament to the quality of our fleet – less than 20% of all foreign-flagged vessels operating in the US meet the strict eligibility requirements.

Stolthaven Terminals also identified key environmental baselines for the first time. To support our journey towards meeting our ambitions, we established a dedicated sustainability team with members from all wholly-owned sites. The team is helping to improve sustainability performance by sharing successes and best practices and identifying opportunities. Front-line employees are central to helping achieve our goals, so Stolthaven Terminals is using an online ideation platform to crowd-source ideas on environmental initiatives from them.

Growing Sustainably *(continued)*

Stolt Tank Containers (STC) also established baselines and processes for gathering ongoing emissions, water, energy and fuel usage data across the business. We are a member of the Clean Cargo Working Group, an organisation that is dedicated to reducing the environmental impact of global goods transportation and promoting responsible shipping. During the year, Stolt Tank Containers also used several EcoTransIT emissions calculation tools to begin analysing and calculating its Scope 3 transport emissions from the purchase of transportation services. The EcoTransIT methodology is compliant with the Global Logistics Emissions Council (GLEC) framework and gives us the ability to calculate our Scope 3 emissions across all modes of transport. We are pleased to report that we maintained our EcoVadis silver sustainability rating for another year.

Stolt Sea Farm established baselines for measuring environmental performance at its operations in France, Spain and Portugal and began analysing more detailed data for Norway and Iceland. An integrated quality, food safety and environmental management system including ISO 9001 and ISO 14001certifications was implemented across our operations in France, Spain and Portugal. This year our Norwegian operations also achieved their ISO 9001, ISO 14001 and Global GAP certifications. In Iceland, our operations are also Global-GAP-certified.

Reducing emissions

GRI 305

Stolt Tankers is, by far, the Company's largest greenhouse gas producer. It is focused on cutting emissions by 50% by 2030 (relative to 2008 levels), exceeding the IMO's target of achieving this reduction by 2050. In 2021, Stolt Tankers reduced its fuel consumption by 5% compared with 2020. This supported a reduction in greenhouse emissions of 5.5%.

Savings were achieved through several initiatives, including improved operational and technical efficiencies and fleet optimisation. Maintenance programmes were enhanced, with extra hull cleaning and propeller polishing, as well as the installation of several advanced propeller boss cap fins which make our ships more hydrodynamic. Further improvements were made to voyage planning, with speed and trim optimised according to real-time weather data. In 2021, capital funding of $5.1 million was also approved for a range of technology investments to reduce the carbon footprint of Stolt Tankers' managed ships over the coming years.

2021 saw two major new emission reduction initiatives at Stolt Tankers. Firstly, we became an official partner of the Mærsk Mc-Kinney Møller Center for Zero Carbon Shipping, which is committed to creating zero-carbon solutions for the maritime industry. As a partner, Stolt Tankers will directly contribute by seconding R&D and shipping experts, as well as using our vessels for testing.

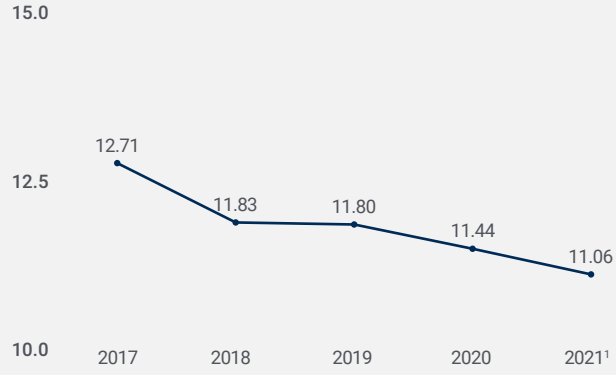
Secondly, Stolt Tankers trialled the use of a marine biofuel produced from certified sustainable feedstocks. We assessed the viability of the future use of biofuels in both engines and boilers, testing the fuel's impact on consumption, power and reliability. Initial results were very positive – the equipment performed as expected, and the use of the second-generation biofuel resulted in an 80% to 90% reduction in well-to-exhaust carbon emissions when compared with traditional fuels.

Other projects in 2021 included our ongoing work as a partner in the HySHIP project, which is designing a ship powered by liquid hydrogen. In March, we were a signatory to a two-year consortium agreement for Concepts of Ammonia/Hydrogen Engines for Marine Application (Cahema). We also joined a coalition to explore cold ironing, which has the potential to reduce emissions from chemical tankers by using electricity supplies in port rather than running ship engines.

Stolt Tankers uses the Annual Efficiency Ratio (AER) to calculate carbon intensity across its fleet. This is the first year Stolt Tankers has used AER – moving from the Energy Efficiency Operational Indicator (EEOI) to better align with IMO and shipping industry reporting.

Stolt Tankers' 2021 AER was 11.06, compared with 11.44 in 2020.

AER trend over the last five years
Gram CO_2 emitted per deadweight tonne of capacity and distance travelled.



1. Includes E&S Tankers fleet

Although its emissions of CO_2 are relatively low, Stolthaven Terminals is working on several projects to reduce them. Energy scans are being carried out at all our terminals, with the results informing detailed plans to transition sites to zero carbon.

Another emission reduction initiative was a joint trial in Houston, US with Stolt Tankers to treat waste shoreside instead of at sea. Not only were 5,800 m^3 of tank wash water directed to our onsite wastewater treatment plant, but the initial layby tank cleaning saved 139 tonnes of fuel.

Stolthaven Terminals also explored ways to reduce transport-related emissions. For example, Santos, Brazil partnered with a local nitrogen generation station to reduce carbon emissions by minimising the need for trucks to transport nitrogen. The partnership will deliver an estimated 24% saving.

Some products stored at our terminals can emit vapours, and we use several techniques to prevent these from entering the atmosphere, including vapour recovery systems, scrubbers, flares, internal floating roofs and nitrogen blankets. As a result of these, our terminal in New Orleans, US, has achieved an 18.3% reduction in volatile organic compound (VOC) emissions between 2016 and 2020. We plan to roll out these techniques at our wholly-owned terminals to reduce our VOC emissions across our network.

Stolt Tank Containers' emissions benchmarking led to two priority initiatives in 2021: in Singapore, steam boilers were switched from diesel to gas, and in Moerdijk, the Netherlands we switched to renewable diesel, leading to a 90% reduction in carbon emissions. We also continued our ongoing emissions reduction projects such as reconfiguring depot floorplans, which reduces overall fuel use through more efficient container movements. In Houston, US, the updated configurations were fully implemented at the beginning of 2021.

Fish has one of the lowest carbon footprints of all animal-based protein sources. Stolt Sea Farm works to minimise emissions as much as possible across its operations and supply chain. In 2021, SSF worked with the National Association for Aquaculture in Spain to calculate the carbon footprint for turbot. This will help the industry drive down emissions in areas such as feed supply.

Managing energy consumption

GRI 302

In 2021, Stolt Tankers carried out a range of initiatives to improve the energy efficiency of its fleet, including installing variable frequency drives (VFDs) that regulate and save energy on pumps and mechanical devices. Investments of $1.5 million were approved to upgrade measuring and monitoring equipment across the fleet, which is essential to reducing fuel consumed. We also encourage sustainable behaviour on board ships, focusing on stopping equipment on time and optimising shaft generator usage, which saved 3,805 tonnes of fuel.

Stolthaven Terminals' main source of energy consumption comes from producing steam for heating products and cleaning tanks, as well as powering pumps and equipment for mixing and cooling. The amount of energy consumed depends on the products stored, the amount of product pumped and weather conditions. We continue to invest in improving heat exchange processes. We are also incorporating new technologies and deploying more efficient devices, such as using a fully solar solution for gear switching for the onsite train network in Houston, US. In addition, we expanded our programme of using airborne drones to identify energy leakages and unwanted emissions, using them in Houston, US and Singapore. This delivers major energy savings as there is no need to empty or clean tanks for inspection.

Stolthaven also increased its use of green energy this year. In Santos, Brazil, Moerdijk, the Netherlands, Dagenham, UK and our New Zealand terminals, 100% of electricity now comes from green sources. Our terminal in Singapore has 500 solar panels, which provide 160 MWh of electricity annually. We added solar panels at our Dagenham, UK site too, which are saving around 9MWh of electricity per year. To drive R&D in this area, Stolthaven continued working with the Technical University of Delft on the *Terminal of the Future* initiative, which is exploring what energy-efficient terminals of the future might look like.

Stolt Tank Containers began a project to track its energy use. This generated a baseline, which has led to the introduction of a range of improvement programmes including incorporating solar panels into upgrades at our depot in Kaohsiung, Taiwan and replacing exterior yard lighting with solar panel lights in Zhangjiagang, China. In Singapore, benchmarking showed substantial opportunities for reducing energy consumption by moving from diesel to gas boilers, and we are planning to install a natural gas pipeline at the depot.

Stolt Sea Farm operations require relatively high levels of energy to pump water around its farms from the sea. We are always looking at ways to boost the energy efficiency of this process, for example by installing variable frequency drives that optimise motor operations and upgrading pumps to more efficient models. We are powering our Spanish operations with 100% renewable energy. Major contributors to energy efficiency are our two new recirculation aquaculture system (RAS) farms, which are unique to us. In 2021, Stolt Sea Farm's energy consumption increased to 52,658.5 MWh, compared with 49,745.8 MWh, due to higher volumes of fish production during the year. Energy consumption per kilogramme of fish produced at our own facilities during the year was 9.03 KWh/kg in 2021, compared to 9.29 KWh/kg in 2020.

Growing Sustainably *(continued)*

Water conservation

GRI 303

During 2021, Stolt Tankers launched its electronic Tank Cleaning Manual (eTCM), a bespoke platform to define a common, more efficient cleaning standard across the fleet and reduce the resources involved in tank cleaning. The platform enables better information and best practice sharing, which helps to reduce water and chemical use, and fuel consumption. We also completed a pilot water conservation project called Cleaning Alongside, which involves cleaning tanks in port rather than at sea to allow wash water to be reclaimed. Six ships were involved in the pilot, during which 5,800 m^3 of wash water was reclaimed and 139 tonnes of fuel was saved, leading to a corresponding decrease in emissions.

At several Stolthaven Terminals facilities, we collect rainwater on site to use for tank washing and fire-hose testing, which reduces our reliance on mains water sources. For example, in Santos, Brazil, we are on track to double rainwater use from 7% (1,366 m^3) of onsite water consumption to 14% by 2022. In Houston, US, ongoing tank farm paving separates the storm water and chemical drainage systems, diverting approximately 16,565 m^3 of water away from the wastewater treatment plant. Since 2020, our Houston terminal has increased condensate collection from less than 10% to approximately 70%. Condensate collection systems were upgraded in New Orleans, US as well, with valve and pipe enhancements improving the recapture of heat energy, reducing water use and minimising the impact of treating water effluents.

Stolt Tank Containers implemented several water conservation initiatives in 2021. These included a project to map water consumption at our depot in Dubai, UAE, with additional flow meters installed to provide more detailed data. In Kandla, India we introduced a new process to collect rainwater for cleaning and repairs. The project is expected to reduce mains water consumption by between 20% and 30%.

Stolt Sea Farm selects locations for its farms to ensure access to the highest-quality water – and invests significantly to improve this. Our new RAS farms recirculate water continuously, minimising water consumption, and all our farms are designed and managed so that water in the outflow is as clean as at intake.

Managing waste

GRI 306 and 307

Stolt Tankers is part of the 5% of worldwide shipowners committed to working towards a sustainable blue economy. It is certified to international environmental standard ISO 14001 and all waste from ships – including hazardous waste – is disposed of in line with the International Convention for the Prevention of Pollution from Ships (MARPOL). During 2021, we achieved an 11.4% reduction in waste to landfill from Stolt Tankers' shipping operations (2021: 5,964 m^3, 2020: 6,733 m^3). As a member of IMPA ACT and as part of our responsible procurement programme, we also work closely with our suppliers to look for sustainable alternatives to single-use plastics.

Two ships were sent for recycling in 2021. Stolt Tankers and its preferred recycling yards operate in accordance with the IMO 2009 Hong Kong Convention for the Safe and Environmentally Sound Recycling of Ships. We are also a founding member of the Ship Recycling Transparency Initiative: www.shiprecyclingtransparency.org, an online platform reporting ship recycling against a set of predefined criteria.

Ships delivered for recycling hold an inventory of hazardous materials, and accredited auditor DNV verifies that each vessel has been properly prepared before issuing a 'Certificate Ready to Recycle'. Weekly reports track the entire recycling process including all required environmental permits and waste management. The Shree Ram Group's yards 78/81 and V7, used by Stolt Tankers, became the first in India to receive certification from Lloyd's Register Asia confirming they comply with Article 13 of EU Regulation 1257/2013. This certification moves both yards a significant step closer to receiving full EU approval.

To minimise the risk of spills and soil contamination across the Stolthaven Terminals network, we have invested in concreting tank pits and installing liquid-tight bunds to secondary containment areas. In the past year, we upgraded approximately 7,000 m^2 in Malaysia, and, as part of upgrades in Dagenham, UK, invested in 11,000 m^3 of new liquid-tight bund.

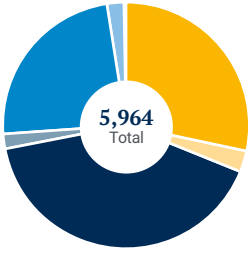
Stolthaven is also digitalising a range of processes to reduce paper use and improve accuracy through its *Connected Worker* programme. In 2021, we introduced wireless devices for operators at two terminals, as part of a paper reduction pilot. Operator paper use was cut to zero, and we are now deploying the devices across our network.

Interactive sessions on waste reduction for employees were also held at the Annual Safety Day at Houston, US, which included an environment station where all team members received reusable water bottles and useful information on how to recycle electronics, conserve water and dispose of household waste properly. Meanwhile, our terminal in Singapore led a recycling initiative with other local businesses. In total, 1.2 tonnes of electronics were collected and individual components including copper wire, plastic casings and other parts were reused.

At Stolt Tank Containers, we make ongoing improvements to our maintenance and repair processes to ensure tank containers can be used over many years. The average lifespan of each tank is around 20 years and more than 90% of materials are recycled when they reach the end of their lifecycle. Tank containers are far more sustainable than flexi-bags, which are discarded after each shipment. On average, each flexi-bag adds the equivalent of 7,000 single-use plastic carrier bags to landfill.

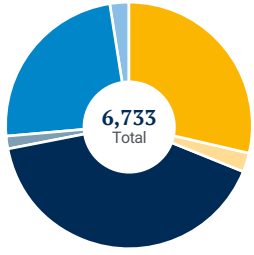
Stolt Sea Farm aims to achieve zero waste to landfill by 2030. In 2021, we achieved environmental management ISO 14001 certifications across all our operations, excluding Iceland. This certification provides clear baseline data and uniform criteria for driving progress towards this goal.

Waste to landfill 2021 M³ [1]



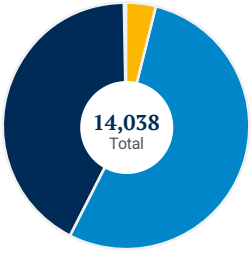
Plastics	1,701
Food waste	166
Domestic waste	2,425
Incinerator ashes	122
Operational waste	1,414
Other waste	135

Waste to landfill 2020 M³ [1,2]



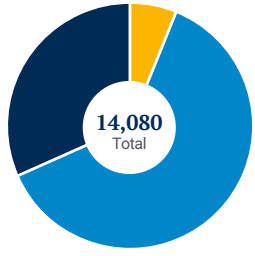
Plastics	1,929
Food waste	179
Domestic waste	2,749
Incinerator ashes	115
Operational waste	1,610
Other waste	151

Oil waste management 2021 M³ [1]



Incinerated	563
To reception facilities	7,529
Through 15ppm oily water separator	5,946

Oil waste management 2020 M³ [1,2]



Incinerated	879
To reception facilities	8,752
Through 15ppm oily water separator	4,449

1. Includes Stolt Tankers' shipping operations only.
2. Restated due to late reporting from some ships as those voyages were completed after the publication of our last Annual Report.

Promoting biodiversity and responsible farming

GRI 304

Stolt Tankers works in accordance with Ballast Water Convention D-2 requirements, which dictate the maximum levels of viable organisms allowed to be discharged into the ocean. We have retrofitted a total of 62 ships as part of our efforts to install the most efficient water treatment plants across the fleet, making good progress towards our goal of covering 100% by 2024. We also completed our biofouling management plan, which is designed to protect the biodiversity of the oceans by eliminating the transfer of invasive species via our ships.

Many of the world's endangered habitats are where land meets the sea. Our terminals and depots are located in these areas, so we take particular care of the surrounding environment to protect native species. For example, Louisiana, US has some of the only swamp habitats left in the western world. In 2021, the team from our New Orleans terminal joined the Communities Restoring Urban Swamp Habitats campaign, planting 70 cypress trees to help rebuild habitat resilience across 40 acres of wetlands. Stolt Tank Containers' depot in Mumbai, India also organised a tree-planting drive at a local village as part of its ongoing sustainability programme. Members of the team worked with the Dighode village council to hold the event, which involved local children helping to plant fruit-tree saplings and learning about the importance of protecting the environment.

Stolt Sea Farm is committed to responsible farming and transparency. During 2021, we continued working with feed suppliers to evidence sustainable fisheries certifications for the fish meal and fish oil used in the formulation of our fish feed. We are also working with leading fish feed manufacturers to investigate new feed formulas with lower fishmeal and fish oil content, which reinforces our leadership position when it comes to preserving scarce natural resources. To ensure transparency and traceability, we are also looking at ways to improve labelling for all our products.

For more on our environmental performance, please visit: stolt-nielsen.com/sustainability/environment/