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NHH  INTERNATIONAL  
COMPETITION CASE





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# Introduction and case overview

## The shipping industry is on the brink of a Fourth Propulsion Revolution<sup>1</sup>.

In two centuries international shipping has transitioned from sail to steam, and from coal to oil propulsion. As a result of the need to reduce greenhouse gas emissions from ships, the industry is now on the brink of a 'Fourth Propulsion Revolution' possibly using a combination of different fuels and energy sources.

New solutions emerge; however, all forms of innovation come at a cost. Although the benefits of these solutions far outweigh the costs, there is still some debate surrounding the distribution of the costs. Hence, the question isn't *if* or *how much* one should pay, but rather *who* should pay – and *how* do we incentivize them to do so?

## ESG is on the rise

The growing attention to climate and climate risk, have pushed most Environment, Social and Government (ESG) matters further up the materiality agenda within the shipping industry. However, not all areas are equally

material to the various stakeholders of the industry. For example, banks and investors are very interested in companies' ESG performance, but customers have not yet made ESG an essential factor when selecting transportation providers – at least that is in *the chemical tank industry*. In the industry for container-shipping the picture is different, where nine big companies including Amazon, IKEA and Unilever have pledged to only move cargo on ships using zero-carbon fuel by 2024.<sup>1</sup>

## The Odfjell Group – one of the world's leading shipping companies in the transport and storage of chemicals.

Odfjell handles some of the world's most hazardous liquids and chemicals, and transports them through some of the world's most vital and fragile environments: the oceans. Odfjell currently holds a leading position in decarbonization. They have had great success with their overall targets, that embrace ambitious measures for the Company's efforts and impact on ESG. Now they seek to lead as an example, paving the way for a greener industry.

In an effort to promote the environmental perspective, Odfjell is eager to pick up creative ideas on how to realize the high potential of value creation in the chemical tank industry, by taking advantage of their current leading position in decarbonization.

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## How do we add value to our leading position in decarbonization, by making environmental footprint a winning factor when engaging with customers, and when contracts are awarded?

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You are asked to formulate a business plan, by either focusing on a few key elements within the case, or by encompassing several elements and connecting them in a holistic business plan. The elements referred to are as follows: the customer perspective, the consumer perspective, the digital perspective and the financial perspective. The business plan has to build on new creative ideas, but at the same time fit with the core values of Odfjell and enable them to uphold their leading position in decarbonization.

*Note: For further elaboration on what these different perspectives encompass, see 'closing remarks'.*







“Not until it gets more expensive to hire a ship with higher carbon emissions will customers actually choose the most efficient ships.”

*Harald Fotland, CEO Odjfell*





# The shipping industry

**Shipping is an integral part of the global economy. Throughout history, the oceans have been vital conduits for trade and transportation, for sharing resources and fueling trade in all industries, on all continents.**

More than 90% of world trade is carried by the international shipping industry.<sup>2</sup> Without shipping, the import and export of goods on the scale necessary for the modern world would not be possible, and shipping remains the most environmentally friendly mode of transportation.

**“Careful management of this essential global resource, our oceans, is key to secure a sustainable future.”**

In total, the world commercial fleet consists of almost 100,000 vessels, with a combined tonnage of 1,81 billion dwt.<sup>3</sup> The world fleet is registered in over 150 nations, and staffed by over a million seafarers of virtually every nationality.

The global business, our dependency of the oceans, the contribution to world trade and economy put shipping in a strong position to contribute in building a more sustainable industry and to achieve the United Nations’ Sustainable Development Goals (UN SDGs).

Global shipping represents about 2,0% of global greenhouse gas emission.<sup>4</sup> Shipping was not directly included in the Paris Agreement in 2015, but the UN International Maritime Organization (IMO) agreed in 2018 a new strategy to reduce greenhouse gas emissions from ships.

The IMO strategy sets some clear targets for reducing international shipping’s carbon intensity by 40% compared to 2008 and reducing absolute emissions by 50% from 2008. The strategy also sets out targets for how new vessels should be designed.

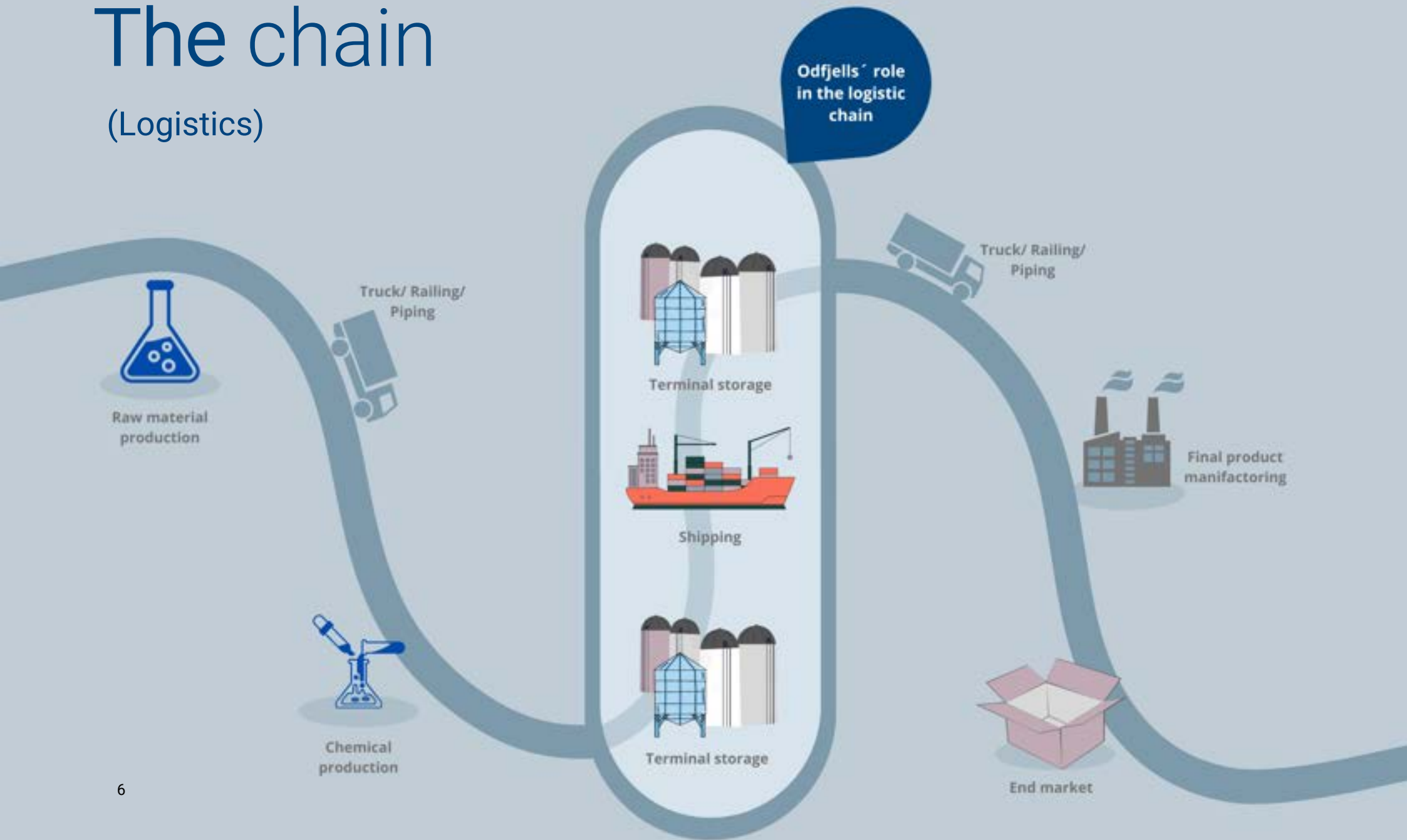
<sup>2</sup> OECD, *Ocean shipping and ship building* (Paris: OECD, 2022)

<sup>3</sup> UNCTAD, *Merchant fleet* (New York: UNCTAD, 2021)

<sup>4</sup> IEA, *international shipping* (Paris: IEA, 2021)

# The chain

(Logistics)



# The chain

(Of emission)

## SCOPE 1

Ships' direct emissions

- Facilities
- Equipment
- Vehicles
- Onsite landfills

*(Note: Odfjell's major source of emissions is in scope 1)*

## SCOPE 2

Indirect emissions

- Purchased electricity
- Purchased heating
- Purchased cooling

## SCOPE 3

All other emissions

- Transportation
- Distribution
- Waste
- Energy and fuel
- Leased assets
- Travel

Total emission per product consumed (Ref. GHG Protocol Guidance)



# Introducing Odfjell

**The Odfjell Group is one of the world leaders in the global market for seaborne transportation and storage of chemicals and other specialty bulk liquids.**

The company was founded in 1914 and is one of Norway's oldest shipping companies. Odfjell pioneered the development of the chemical tanker trade in the 1950s and the tank storage business in the 1960s. It is today one of the world leaders within the chemical tanker segment, and aims to maintain its position as the preferred logistics service provider for its customers around the world.

This case is strictly limited to Odfjell SE, therefore all referrals to the company should be read as Odfjell SE.

## Odfjell: Safe – Efficient – Committed

*“Most of the products we use in our everyday life are made by using chemicals. – from the clothes we wear to the water bottle we drink from, and the medicine we sometimes take. Our job is to transport and store these chemicals, and to make sure that our customers all over the world get them delivered safely, efficiency, on time “*

Sounds easy – but the logistics behind the perceived simplicity of this task are immensely complex. 2 300 colleagues around the world work to secure safe and reliable storage and coordinate the transport of more than 600 different chemicals, each one requiring special handling. The expertise of Odfjell's people makes all the difference.

Safety and sustainability are at the heart of Odfjell's work – it is their responsibility, and their license to operate. Onshore in the USA, Belgium, and Korea, Odfjell's terminals' teams operate a total of 450 tanks with a capacity of 1.2 million cubic meters. That is equal to 7.6 million bathtubs.

At sea, Odfjell's 80+ highly sophisticated chemical tankers call more than 400 different ports and transport 14 million tonnes cargo every year, in all weather conditions, day and night. The distance their ships sail in a year is the equivalent of going 217 times around the equator, or about 11 round-trips to the moon.

Odfjell brings the chemicals to the producers, so that they can make the rainwear for your hike, the football for your soccer team, the wheels for your bike, the paint and insulation for your home, and an almost endless array of everyday items – PCs, makeup, phones, clocks, cooking oil, medicines etc.

## KEY FACTS

- 2 300 employees
- Operating 80+ vessels
- 12 offices around the world
- Four terminals at key strategic locations: 450 tanks and 1.2 million cbm storage capacity

## KEY NUMBERS 2021

- Gross revenue: USD 1 038 million
- EBITDA: USD 245 million
- Operating result: 47 million
- Total assets: 2 073 million



*“We continuously search for ways to improve our services and take the best care of our customers, our partners and investors, our staff and our environment. We ship and store the building blocks for industries, markets, consumers, and we are proud to do so”*



# The Core

## MISSION

Odfjell's core business is handling hazardous liquids – safely and more efficiently than anyone else in the industry

## VISION

Odfjell shall be a world class and preferred global provider of transportation and storage of specialty bulk liquids

## CUSTOMER COMMITMENT

Odfjell is committed to generate value for their customers, by offering safe and reliable transportation and storage of their products, at a competitive cost. Their goal is to deliver on spec, on time and adapt their services to cater for the needs of their customers

## IMPACT

In Odfjell, they recognize that their company has an impact on the environment, people and societies. They are committed to operate a sustainable business, to continuously seek improvements and to actively support the achievement of the relevant UN Sustainable Development Goals



# The values

## PROFESSIONAL

- Skilled, dedicated and compliant
- Show the right behaviour and attitude

## PROACTIVE

- Assess risk and give highest priority to safety
- Take proper precautions and share

## SUSTAINABLE

- Aim for long-term success
- Provide safe and enduring solutions

## INNOVATING

- Embrace change
- Look for new and improved solutions

# Sustainability and ESG

**Throughout its more than 100-year history, Odfjell has held a long-term perspective on how they do business – sustainability is deeply rooted in their DNA. Sustainable operations answer to current demands without compromising the health and safety of future generations.**

*“No matter where we are, at sea or onshore, we strive to make sustainable decisions that drive global change. Every day, for the long term.”*

Odfjell handles some of the world’s most hazardous liquids, and transports them through some of the world’s most vital and fragile environments: the oceans. Their terminals store products close to people’s homes and local communities.

Emissions, soil contamination, or water pollution can all have the potential to adversely impact people and ecosystems. It is imperative, for the sake of people and businesses, that the environment in which they operate is taken care of. Climate risk affects all businesses – but it also creates many opportunities.

Climate change poses a severe threat to healthy market dynamics. Failing to live up to expectations, failing to comply with regulations, and failing to operate in a sustainable way present significant risks to trade, locally and globally.

Any business is dependent on a well-functioning society and sound economic growth. That is why Odfjell makes climate risk assessment intrinsic to the work of management and the Board of Directors.

*“We believe that even small changes can make a big difference – for people and for the planet. But we also realize that we cannot do everything. Our efforts and actions directly affect our business, so we focus on areas where we can have a real impact.” – Øistein Jensen, CSO*

Odfjell’s overall targets embrace ambitious measures for the Company’s efforts and impact on Environment, Governance and Compliance (ESG). This is diligent work, to be continuously improved – one can always do better.





# Environmental targets and achievements

## Odfjell environmental targets

Sustainability for Odfjell is about acting today for a better tomorrow. It is about having a long-term perspective of their business, from profit to people, and to the planet. As part of their work to meet IMO targets and meet their ambitions, they conducted a thorough fleet review and transition plan in 2020 (the Fleet Transition Plan). The plan is iterative and updated with latest plans and technology.

Based on this plan, they realized it would be possible not only to achieve the IMO targets but also to go **beyond** that.

They decided to set some ambitious climate targets based on the planned technical improvements and retrofits and operational improvements, and digitalization efforts. They aim to reduce the intensity by 50% in 2030 compared to 2008, which goes beyond the IMO target.

To achieve a 50% absolute reduction target, they must reduce the intensity by more than 70-80%. They decided then that they would again go beyond the IMO target and set a target to be **climate neutral** in 2050.

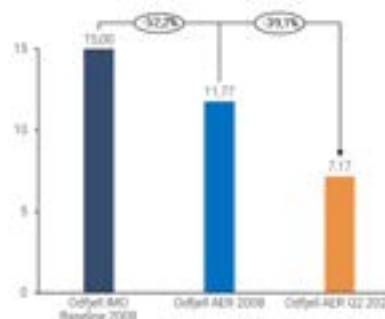
Odfjell has, with these targets, set clear ambitions, with a clear and documented plan to reduce CO2 emission and support the decarbonization of shipping.

In other words, their strategic direction is founded on a set of ambitious targets for their operational excellence in all parts of the organization, as well as their core and values: the Odfjell Compass. A compass helps set direction while still allowing for new routes if conditions change along the way, giving them the flexibility to maneuver through a rapidly changing landscape.

## Odfjell's achievements

Odfjell has not only set ambitions and targets. Since 2014 they have implemented a raft of technical, operational, and digital measures to improve fleet efficiency and reduce emissions beyond competitors. Collecting high-quality data has been fundamental to those efforts. As an integrated shipping company, Odfjell has been able to capitalize on an internal wealth of technical, commercial, and operational expertise to achieve targets. The Odfjell ships have been retrofitted with several energy-saving devices to reduce fuel and emissions.

Since 2014 they have completed more than 100 installations, and in 2022 they intend to install 24 more. These technical upgrades and investments have improved the performance significantly. Odfjell also focus on how the vessels are operated, utilizing weather and currents, optimizing routes and speed to reduce emissions. As an example, in 2021 they reduced CO2 emissions by 2,573 tons, just on optimal routing. The efforts are paying off; the Odfjell fleet's carbon intensity is now 52% below the IMO baseline for 2008 and is the most energy-efficient in the industry segment, but they are clear that their journey to reduce emissions and decarbonize continues.



AEI is Average Efficiency Indicator and measured by CO2 emissions for voyage divided by the product of ship design deadweight and distance travelled.  
The AER 2022 in the table above refers to the controlled fleet (See TCFM), including Planned.  
The Odfjell AEC baseline refers to a calculated baseline based on 2019 data see IAG Guidance

## ENVIRONMENTAL TARGETS:

- Odfjell will cut greenhouse gas emission by 50% by 2030 compared to 2008
- Odfjell is dedicated to pursuing a zero-emission strategy and will only order vessels with zero-emission technology from 2030
- Odfjell will have a climate-neutral fleet from 2050
- Odfjell will actively support initiatives to develop technology and infrastructure for zero emissions and support international regulation to drive zero-emission for the shipping industry

# Customers and end-products

Serving up to 600 customers every year

Odfjell has several hundred customers, ranging from small start-ups to the biggest and most complex organizations in the world. From newly established producers and trading entities to the most experienced ones.

The common denominator for this vast range of customers is that they are all interested in minimizing their cost on transportation with a focus on nurturing their own customers and optimizing and profiting from their own supply chain. This means that their approach to decarbonization and their green ambitions will vary – often corresponding with their own customers' requirements





# Effects on customers and stakeholders

## Climate change poses a severe threat to healthy market dynamics.

Any business is dependent on a well-functioning society and economic growth. Failing to live up to expectations, failing to comply with regulations and not operating in a sustainable way poses a significant risk to business, locally and globally. The risks can be related to losing customers and employees, implementation of costly regulations, taxation and cost of non-compliance, not to mention loss of trust and reputation among stakeholders.

But sustainable business also creates new and positive opportunities to innovate, improve business models, introduce new technology, reduce emissions, waste and energy consumption, and save cost.

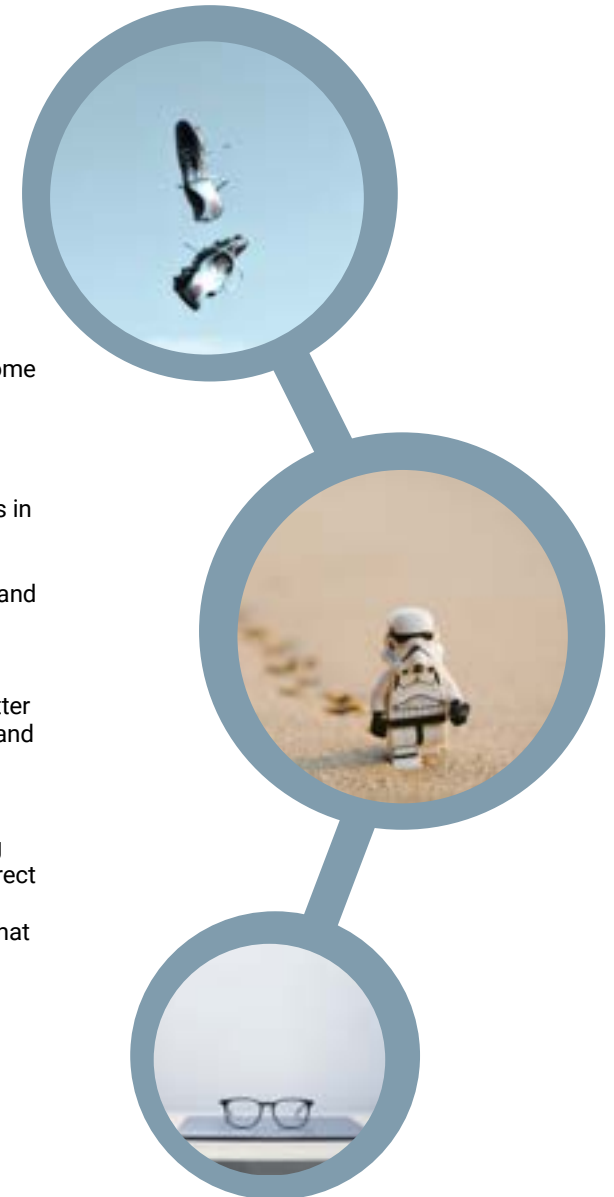
*“The potential negative risks and positive opportunities must be balanced responsibly, and influence our business decisions, practices and operations from beginning to end.”*

A focus on energy efficiency, in an effort to decarbonize shipping, may reshape the competitive landscape in the coming years, as shipping companies face new regulations, and potentially higher fuel costs. These developments may give Odfjell a significant competitive advantage. Why? Because the customers will ultimately bear parts of the costs from these regulations and mitigating measures.

As Odfjell has one of the world’s most modern and energy-efficient chemical tanker fleets, they will be able to operate at a lower cost, thus be able to provide customers with better deals. The inclusion of shipping in the EU emission trading system (EU ETS) from 2023, is one such example where the cost of emissions may give Odfjell a competitive edge. Furthermore, new regulations, change of trade flow patterns, high energy demand employing more swing tonnage and a low order book of new ships, are all factors contributing to these expectations.

The majority of Odfjell’s emissions come from their direct emissions (Scope1). They also monitor and report indirect emissions from energy use (Scope 2) and report this to CDP, where they achieve a B score. Tracking emissions in the value chain is challenging. To this end, they have teamed up with the company Re-Flow to develop models and dashboards of their value chain emissions (Scope 3) from their suppliers. They collaborate with their most significant suppliers to get a better understanding of Scope 3 emissions and then work to reduce them.

And why is this relevant from a customer’s point of view? By reducing their own emissions, especially the direct emissions, they will concurrently be reducing customers indirect costs. What is a Scope 1 emission for Odfjell, is a Scope 3 emission for Odfjell’s customers.



# Summary and closing remarks

**Climate change due to emissions is undoubtedly one of the biggest challenges in shipping.**

Compared to other transportation methods, shipping is by far the most efficient and environmentally friendly. However, due to the size of the industry and as ships burn fossil fuels, shipping is also responsible for about 2-3% of global greenhouse gas emissions.

90% of world trade is carried by sea. This means that most of the products you and I use every day have been shipped across many oceans, to and from a terminal. It also means that we are all extremely dependent on this industry, as there are no sustainable alternatives to keeping the global supply chains working.

Odfjell is a part of the problem, but also a part of the solution. Although Odfjell already has the most energy-efficient fleet in their segment, they have a responsibility to do what they can to continue to make a positive difference in the industry.

They now need your help to come up with creative ideas on how to make this possible.

In this context you are asked to identify concrete strategic choices and solutions, with thorough supporting analysis and arguments, that you believe will enable Odfjell's aspiration of making value out of their leading position in sustainability.

As business students your task will be to focus mainly on the commercial dimension but also a financial and political dimension.

Using your understanding of the shipping industry in general – such as the chain of value and chain of emission, environmental concerns, customers needs and preferences, politics and regulations – and Odfjell's current position in the industry in particular, your challenge will be to advise Odfjell's management on a suitable plan of action.

You should address not just the what, but the how, and spell out the best long-term strategy.

Further elaboration on the different perspectives:

**The customer perspective:** How Odfjell can more actively influence how their customers define their supply chain and their green profile.

**The consumer perspective:** How Odfjell can contribute to end-consumers' awareness of the chain of emissions (scope 1-3).

**The digital perspective:** How Odfjell can make use of new or already established digital tools to secure transparency and strengthen its position as market leader within ESG.

**The financial perspective:** How Odfjell can create value from a leading position in decarbonization.

**Good luck! Odfjell is looking forward to hearing your solutions.**







# Thanks to

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**The case could not have been completed without:**

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