



PORT ENVIRONMENTAL REVIEW SYSTEM (PERS)

Klaipėda State Seaport Authority Environmental Report

March, 2024

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Introduction

The Klaipėda State Seaport Authority (hereafter – KSSA) aims to ensure that the operation and development related to the Klaipėda State Seaport (hereafter – port), which generate financial benefits for business and public entities, do not have a negative impact on society and the environment. The growing attention of international organisations and national authorities to environmental protection, the increasingly promoted shift towards climate and environmental neutrality and the growing expectations of the public encourage the port's activities and further development to be organised with a view to improving the state of the environment, the rational management of natural resources and the improvement of the human living environment.

As one of the means to improve the environmental management of the port, the KSSA is implementing the Port Environmental Review System (hereafter – PERS), a system that is specific to the port sector and is a part of the European Seaports Organisation (hereafter – ESPO). PERS not only covers the core requirements of recognised environmental management standards (e.g. ISO 14001) but also addresses the specificities of ports.

PERS is based on ESPO's policy guidance, the scheme is specifically designed to assist port authorities to achieve regulatory compliance and sustainable development of port operations, protect the environment, improve public health and address climate issues, and ESPO has prepared guidelines for the implementation of the system.

The Environmental Report is an integral part of the PERS and it was developed by UAB Estonian, Latvian & Lithuanian Environment and SIA Estonian, Latvian & Lithuanian Environment working on the base of Joint Venture Contract No. 123-23/LT/18-23AM37 for the client AB Klaipėda State Seaport Authority according to the contract No. 34-2023-305 providing environmental assessment and environmental management standard (PERS) implementation service for the Port of Klaipėda.

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1. Port Profile

Overview

Klaipėda port is the main transport hub and the gate of Lithuania to the world. KSSA is delegated with task of management of port territory on both land and water and aims at permanently developing the port, maintaining its competitiveness and increasing cargo handling volumes, ensuring the functions in accordance with the Law on Klaipėda State Seaport of the Republic of Lithuania. The KSSA aims to enhance business value and profitability, efficiently utilize port territory and infrastructure, and promote growth in the added value of the transport sector. It operates as a joint-stock company, all shares of which currently belong to the state of Lithuania.

The land on which the port is situated is owned by the state, highlighting the government's direct interest and control over the strategic asset. This state ownership ensures that the port remains a crucial part of the national economy and infrastructure.

The port, situated on the south-eastern coast of the Baltic Sea in the Klaipėda Strait, is a versatile deep-water port. Unlike ports further north, the Port of Klaipėda has the advantage of remaining ice-free even during the harshest winters, ensuring uninterrupted shipping and cargo operations. Covering an extensive area of 5.5 km² with an additional 8.85 km² of water area, it stands as a pivotal transport hub in the Republic of Lithuania (Figure 1).



Figure 1. Territorial boundaries of Klaipėda City and the port

The port is the place where sea, land, and rail routes from both the east and west meet, making it a vital lifeline for the nation's transportation needs. The port is an important element of the trans-European Transport Network (TEN-T Core), which is part of the North Sea-Baltic Core Network Corridor.

Port cargo operations

The operations within the port are carried out by private companies. These private entities are responsible for managing various operations in the port. Within the port's extended territory a diverse range of storage facilities can be found, including covered warehouses, open storage sites,

liquid storage tanks, refrigerated warehouses, and bulk storage areas. It is a vibrant centre of maritime activity, consisting of 14 major stevedoring cargo, shipbuilding and ship repair companies, all equipped to cater to various maritime business needs (Figure 2). This port operating model, where land is leased to private companies allows for specialisation and efficiency in different areas of port operations, promoting healthy competition and increasing the overall effectiveness of the port.



Figure 2. Cargo operations in Klaipėda port

The port has a thriving ship repair industry that plays a pivotal role in maintaining and enhancing the operational efficiency of maritime vessels. The port's strategic location as a gateway to the Baltic region positions it as a hub for ship maintenance and repair services. Ship repair facilities in the port offer a comprehensive range of services, from routine maintenance to extensive refurbishments. Vessels of varying sizes and types, including cargo ships, container vessels, and fishing boats, undergo thorough inspections, welding repairs, hull maintenance, and paintwork, ensuring compliance with international maritime standards. Moreover, the port offers ship building service and has attracted renowned shipbuilding companies, fostering innovation and collaboration within the maritime sector. The shipbuilding process involves precision engineering, meticulous planning, and adherence to international maritime standards. The seamless collaboration between ship repair and building experts, maritime engineers, and KSSA contributes to the reputation of the port as a reliable and efficient destination for the maritime

industry, fostering economic growth and sustaining the port's vital role in the regional and global shipping network.

The port strategic geographical location, coupled with favourable hydrometeorological conditions, has allowed it to thrive as a port capable of handling a wide range of cargo. Impressively, around 60-65 % of all cargo passing through the Port of Klaipėda originates from Lithuania.

Port is accommodating vessels of considerable size, with a maximum length of 400 m, a width of up to 59 m, and a maximum draught of 13.8 m. It is planned the port's entry depth to increase from 15 m to 17.5 m, solidifying its status as a deep-water port. It can accommodate dry cargo vessels of up to 200,000 DWT, tankers up to 170,000 DWT, and containerships with a capacity of 19,000 TEUs.

There are 33 terminals specializing in various cargo types – 13 universal cargo, 5 liquid and bulk fertilizer, 3 Ro-Ro, 3 grain and agro product, 2 oil, 2 containers, 1 frozen products, 1 LNG, 1 wood and timber, 1 food products, 1 cement. Six main cargo types account for 82-84 % of all cargo handled in the port of Klaipėda: container, Ro-Ro, oil products, fertilizer, grain and LNG (Table 1).

Table 1. Detailed list of cargo types and it's volume in last 4 years

| Cargo volume (mln. tonnes) | 2020 | 2021 | 2022 | 2023 |
|-----------------------------------|-------------|-------------|-------------|-------------|
| Liquid cargo total: | 9,1 | 7,1 | 8,3 | 7,6 |
| Oil products | 5,7 | 4,4 | 4,8 | 4,4 |
| Fertilizer | 1,3 | 0,9 | 0,5 | 0,3 |
| LNG | 1,5 | 1,1 | 2,2 | 2,3 |
| Vegetable fats and oils | 0,2 | 0,2 | 0,4 | 0,2 |
| Raw sugar (molasses) | 0,1 | 0,1 | 0,1 | 0,0 |
| Other liquid cargo | 0,3 | 0,4 | 0,3 | 0,3 |
| General cargo total: | 14,9 | 16,2 | 17,9 | 15,9 |
| Container | 7,4 | 8,0 | 10,5 | 9,2 |
| Ro-Ro | 5,9 | 6,8 | 5,6 | 5,2 |
| Iron and steel products | 0,5 | 0,3 | 0,3 | 0,3 |
| Fertilizer (packed) | 0,3 | 0,3 | 0,3 | 0,2 |
| Wood | 0,5 | 0,4 | 0,4 | 0,5 |
| Refrigerated cargo | 0,2 | 0,2 | 0,2 | 0,2 |
| Other general cargo | 0,1 | 0,4 | 0,7 | 0,3 |
| Bulk cargo total: | 24,0 | 22,4 | 10,0 | 9,2 |
| Fertilizer | 13,8 | 13,6 | 2,7 | 1,1 |
| Grains | 4,6 | 3,3 | 3,2 | 4,1 |
| Other agricultural products | 1,2 | 1,2 | 1,3 | 1,3 |
| Minerals and building materials | 0,8 | 0,7 | 0,8 | 1,0 |
| Scrap metal | 1,2 | 1,7 | 1,4 | 1,2 |
| Ores | 2,0 | 1,2 | 0,1 | 0,0 |
| Peat | 0,2 | 0,2 | 0,2 | 0,2 |
| Raw sugar | 0,0 | 0,0 | 0,0 | 0,0 |
| Other bulk cargo | 0,2 | 0,4 | 0,4 | 0,3 |
| Total cargo | 47,9 | 45,7 | 36,2 | 32,7 |

The port has trade relations for cargo with approx. 70 shipping partners-countries. In 2023 main shipping partners-countries for container shipping were:

- Poland 28 %,
- Germany 11 %,
- Latvia 10.7 %,
- United Kingdom 9 %,
- Other 30 %.

Port passenger operations

Beyond its impressive cargo handling capabilities, the port also serves as an international gateway, welcoming approximately 7 000 ships with passengers from around 70 countries each year (Table 2, 3). The port has 2 Ro-Ro ship terminals and 1 cruise ship terminal.

Table 2. Number of passengers in the last 4 years

| | 2020 | 2021 | 2022 | 2023 |
|---------------------|---------|---------|---------|---------|
| Cruise ships | 0 | 1 076 | 46 853 | 42 150 |
| Ro-Ro ships | 203 346 | 196 504 | 243 403 | 253 343 |

Table 3. Number of vessels in the last 4 years

| | 2020 | 2021 | 2022 | 2023 |
|---------------------|------|------|------|------|
| Cruise ships | 0 | 2 | 61 | 40 |
| Ro-Ro ships | 993 | 1317 | 1166 | 1151 |

The year 2020 was affected by the Covid-19 pandemic worldwide. This had a significant impact on passenger services sector, as restrictions on movement were still in place and people were giving up unnecessary trips or holidays to other countries. This also had a significant impact on cruise shipping. In 2021, a slight recovery of cruise shipping in the Baltic Sea region was recorded compared to 2020, but this was only around 10 % of the pre-pandemic level. In 2022 and 2023, cruise shipping has recovered and reached pre-pandemic levels in the Port of Klaipėda (Figure 3).



Figure 3. Cruise ship entering Klaipėda port

Local port ferries connect passengers to destinations such as the Curonian Spit (Lithuania), international ships with Kiel (Germany), Karlshamn (Sweden) and Trelleborg (Sweden) making it a pivotal link in regional transportation networks (Figure 4).

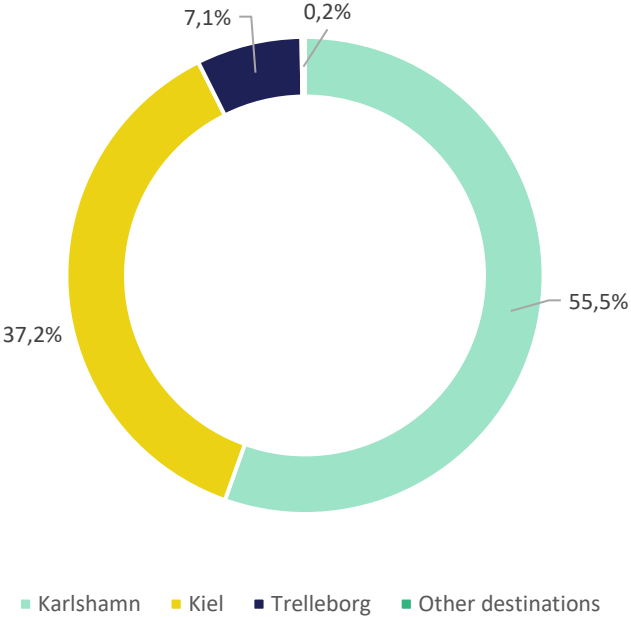


Figure 4. Passenger travelling distribution to different destinations with Ro-Ro ships in 2023

Port location

Short proximity to an urban area is advantageous for the efficient movement of goods and provides access to the skilled labor force and other essential amenities. However, it also presents challenges in terms of managing potential conflicts between industrial activities in the port and residential neighborhoods nearby. Balancing the economic benefits of a thriving port with the quality of life and environmental concerns of the local residents is a complex task KSSA encounters (Figure 5).



Figure 5. Klaipėda port blending in with the Klaipėda city

The peninsula separating the Curonian Lagoon from the open sea is part of the Curonian Spit National Park (Figure 6). This designation underlines the environmental importance of the area, as the National Park was established to preserve the most valuable Lithuanian seaside landscape complex in natural and cultural terms, which include unique dunes in Europe, as well as the values of ethno-cultural heritage. International importance of the protected area or part of it: protection of birds and habitats. The uniqueness of the port area and the importance of preserving and protecting the sensitive ecosystems of the region is underlined by the presence of several natural protected areas within the port area itself:

- The Smeltė Botanical Reserve was established to preserve the habitats of rare plant species. It is located on the Smeltė peninsula and extends along its eastern boundary. A nature reserve of national importance, established to preserve the habitats of rare plant species. The territory of the reserve is owned by the State and managed by the KSSA and State Service for Protected Areas under the Ministry of Environment of the Republic of Lithuania. The reserve protects rare plant species in an area of 3,64 hectares, where no economic activities are allowed;

- The Curonian Lagoon Biosphere Polygon, the purpose of which is to preserve the valuable aquatic ecosystem of the Curonian Lagoon.



Figure 6. Curonian Lagoon located alongside the Klaipėda port and Baltic Sea intercepted by the Curonian Spit (the peninsula)

The strategic location of the port, surrounded by a national park, highlights the need to balance economic development with environmental preservation, while its proximity to residential areas presents urban planning challenges. This complex interplay of factors makes the port a significant and prominent in the region's and cities economic and environmental landscape.

Port objectives, vision and international presence

The KSSA's ambitious 2024-2027 Strategic Action Plan highlights key priorities such as infrastructure improvement and development, creation of new port capacities and diversification of port activity to ensure competitiveness and security of the port, long-term, sustainable and integral development of the port, city, business and the entire state to meet future market demands, the provision of high-quality port services, and creating added value for customers, partners, the city, and the state. The port has a vision of becoming an industry and service oriented complex with high added value, providing all port services, developing maritime industry and renewable energy developments and it would continue fulfilling its mission: connecting Lithuania to the world (Figure 7).



Figure 7. The port gates to Baltic Sea

The high-speed European railway line to Klaipėda should improve the transport and logistics connections in the Baltic region and Eastern Europe. It is foreseen that the introduction of the high-speed European gauge railway to Klaipėda will bring a substantial transformation in the Lithuanian transportation system. This railway is projected to establish a robust substitute for road transport and facilitate the expedited expansion of operations at the port. Furthermore, the inclusion of Klaipėda within the European network is of significant relevance for enhancing military mobility.

Its active participation in various international organisations, including the Baltic Ports Organisation (BPO) since 1995, the European Seaports Organisation (ESPO) since 2001, Cruise Europe (CE) since 2001, and Cruise Baltic since 2003, marks its commitment to global maritime collaboration.

Some of the companies in the port as well as KSSA are also ISO 14001 certified: UAB Klaipėdos Jūrų Krovinių Kompanija Bega, AB Klaipėdos Nafta, AB Klaipėdos Jūrų Krovinių Kompanija, LKAB Klaipėdos Smeltė, UAB Krovinių Terminalas, AB Vakarų Laivų Gamykla, UAB Baltic Premator Klaipėda, UAB Vakarų Krova, UAB Vakarų Baltijos Laivų Statykla, UAB Centrinis Klaipėdos Terminalas.

2. Environmental Policy

Policy statement

Klaipėda State Seaport Authority
Environmental Policy



The core activities and services provided by the port, such as improvement and development of infrastructure, port dredging, cargo handling and storage, ship repair and construction, are associated with various environmental impacts. These include impact on climate change, air and water quality, noise disturbance, waste and wastewater generation and alterations in the natural ecosystems. We are committed to the long-term sustainable development and are actively engaged in reducing our direct and indirect impact on environment, particularly emissions into the air, land, and water throughout ports operations.

To minimise the environmental impact the KSSA set out the following strategic environmental goals:

- A. Ensure compliance with related national and international environmental legislation and regulations as well as environmental requirements including environmental management system requirements.
- B. Eliminate or minimise as much as practically possible all kind of environmental pollution.
- C. Strive to become energy efficient and climate neutral port.
- D. Become a safe port minimising risks associated with port operation, including potential impact on geomorphological conditions.

To achieve these strategic goals, the KSSA commits to:

1. Regularly monitor national and international **environmental legislation** and standards and take promptly action to ensure **compliance**.
2. Ensure that **strategic planning** and execution of investment is based on careful planning that takes into consideration all potential impacts and risks throughout the **life cycle** of the projects.
3. Minimise adverse effects of the port operations through implementation of **best management practices** and application of **cleaner technologies**.
4. Monitor and review port's **energy use** and reduce operational **emissions** through procuring **energy-efficient** products and services, prioritising **renewable** energy sources and energy-efficient technologies.
5. Embrace the principles of **circular economy** reconsidering the ways to produce, consume and manage resources as well as promoting synergies and cooperation among different stakeholders.

6. **Monitor**, review and minimize the impact of our operations on living and **natural environment** as well as the **water quality** and ecological health of the Curonian Lagoon, the port area, and the Baltic Sea and **nature protected areas**.
7. Ensure operation of the **environmental management system** and use of monitoring data in decision-making while exploring opportunities to document, analyse, and use monitoring pollution data to improve our daily port management activities.
8. Regularly review the **Environmental Policy**, objectives and action plan with careful consideration of results of environmental monitoring, environmental audits and considering the potential shifts in future circumstances.
9. Actively engage in **communication** with stakeholders, particularly tenants and work in close cooperation towards reduction of environment impact of port operations.
10. Provide comprehensive environmental training to all KSSA **employees**, urging them to actively consider environmental matters in their daily tasks. We seek to engage the workforce in environmental conservation efforts and familiarize them with the Environmental Policy, fostering a robust environmental culture and expertise.
11. Ensure **transparent** and effective **communication** in the field of environmental management with public and all interested stakeholders develop and make publicly available relevant environmental monitoring data and environmental reports.
12. Ensure availability of necessary **financial** and **human resources** for implementation of the environmental policy.

Signed by Algis Latakas
Director General
Klaipėda State Seaport Authority

Environmental policy is reviewed and updated in case of changes in our activities and the legal requirements or opportunities for future development.

3. Register of port activities, environmental aspects, legal requirements and performance indicators

Significant environmental aspects

To identify the impact of KSSA activities and activities within the port area on the environment, the assessment of significant environmental aspects was carried out. The assessment is executed based on the specifically developed and approved Procedure for Assessing Significant Environmental Aspects. The assessment is carried out by a designated Environmental Management Group consisting of representatives from various departments within KSSA and updated at least once a year. Ad hoc revision of assessment if necessary for identifying and evaluating environmental aspects is proposed in a case of significant changes in legislation, port's activities, or stakeholder's interest.

The process of determining significant environmental aspects begins with the identification of the environmental impact of activities, such as activities and services provided in the port, construction, production, development, and transportation processes in port area. First, the source of environmental impact is identified (e.g., port crane), then the activities in which this source is involved are defined, and subsequently, the environmental aspects related to the source's activities are determined. When evaluating environmental aspects related to each source and activity are identified, all types of resource consumption (electricity, heat, fuel, raw materials, air, water, etc.) and all types of emissions (emissions, noise, odours, wastewater, waste, etc.) are considered. When identifying the environmental aspects, aspect having both negative and positive impacts were considered (Table 4). Following identification of environmental aspects, the corresponding impact is evaluated to assess the significance of each aspect. The significance of impact is determined using scoring for five criteria - likelihood of impact, impact duration, extent of impact, legal compliance, interest of stakeholders. The register of relevant applicable legal and environmental requirements is presented in Annexes 1 and 2. Register was reviewed by external legal experts and their statements of revision are provided with the report.

The significance of an aspect is determined by multiplying the values of all significance criteria. A score of 36 points or more defines aspect as significant. According to the environmental aspect assessment methodology the significance of positive impacts is not evaluated. Table below presents the summary of significant environmental aspects identified in the port.

Significant environmental aspects are monitored through Key Performance Indicators (KPIs). The aim of KPIs monitoring is to allow measurement of changes in indicator values, identification of quantitative goals and control of effectiveness of the measures implemented. Moreover, monitoring allows for achieving compliance with legislation, improving quality of environmental performance for associated environmental aspects and achievement of the stated objectives.

Table 4. Register of significant environmental aspects (PO – port own activities; PT – port tenants’ operations)

| Environmental Aspect | Exposure pathway / Impact on | Activity | Source | Responsible person / organization |
|--|--|---|---|--|
| GHG emissions | Climate change, impact on human health and environment | Movement in port (PO, PT) | Vessels and ships | Environmental Coordinator, Environmental Specialist |
| | | Use of auxiliary engines while moored at port (PO, PT) | Vessels and ships | |
| | | Operation of equipment (PT) | Cranes and other equipment involved in loading and unloading of cargo | |
| | | Transportation of cargo by road transport (PT) | Road transport | |
| | | Transportation of cargo by railway (diesel) (PT) | Rail transport | |
| Emission of air pollutants (excluding dust) | Air pollution, impact on human health and environment | Transportation of cargo by road transport (PT) | Road transport | Environmental Coordinator, Environmental Specialist, Port Control Department |
| | | Use of auxiliary engines while moored at port (PO, PT) | Vessels and ships | |
| | | Movement in port (PO, PT) | | |
| | | Reconstruction of the port quays 21, 22, 23 and construction of quays 21A, 22A, 23A at Naujoji Uosto str. 3, dredging of the water area adjacent to the quays, and construction of an administrative building at Naujojo Sodo str., Klaipėda (PO) | Development of new port area (northern part) | |
| | | Port area extension to the port water area, development of the southern part (inc. development of the southern gates to the port), leisure boats infrastructure) (PO) | Development of new port area (southern part) | |
| Dust emissions | Air pollution, impact on human health and environment | Loading and unloading dry, bulk cargo (PT) | Dry, bulk cargo | Port Control Department, Environmental Coordinator, Environmental Specialist |
| | | Open storage of bulk goods (PT) | Open storage areas | |

| Environmental Aspect | Exposure pathway / Impact on | Activity | Source | Responsible person / organization |
|---|---|--|---|---|
| Change in coastline | Changes of coastal erosion, impact of man-made and natural structures | Use of wave breakers (PO) | Wave breakers | Dredging Department, Environmental Coordinator, Environmental Specialist |
| Changes in geomorphology | Change in currents, impact on environment | Port area extension to the port water area, development of the southern part (inc. development of the southern gates to the port (wave breakers), leisure boats infrastructure) (PO) | Development of new port area (southern part) | Dredging Department, Environmental Coordinator, Environmental Specialist |
| | Change in water salinity in the channel, impact on environment | Port area extension to the port water area, development of the southern part (inc. development of the southern gates to the port (wave breakers), leisure boats infrastructure) (PO) | Development of new port area (southern part) | |
| Water pollution | Impact on water environment | Open storage of bulk goods (PT) | Open storage areas | Port Control Department, Port Security Department, Environmental Coordinator, Environmental Specialist, Dredging Department |
| | | Loading and unloading of dry, bulk cargo (PT) | Dry, bulk cargo | |
| | Entry of untreated rainwater into the port environment | Deviations from normal operations (identified conducting assessment of environmental risks) (PT) | n/a | |
| Odour of oil and chemical products | Odour discomfort, impact on human health | Loading and unloading of liquid cargo (PT) | Liquid cargo | Port Control Department, Environmental Coordinator, Environmental Specialist |
| Use of resources (energy, electricity, fuel) | Depleting of natural resources | Port area extension to the port water area, development of the southern part (inc. development of the southern gates to the port (wave breakers), leisure boats infrastructure) (PO) | Development of new port area (southern part) | General Affairs Department, Port Fleet Department, Environmental Coordinator, Environmental Specialist |
| | | Hydrogen production (PO) | Hydrogen production facility | |
| | | Operation of electric and/or hydrogen ship (PO) | Electric ship for waste collection from other ships | |

| Environmental Aspect | Exposure pathway / Impact on | Activity | Source | Responsible person / organization |
|-------------------------------------|--|---|---|--|
| | | Operation of hybrid pilot boat (PO) | Hybrid pilot boats | |
| | | Electricity supply to ships | Onshore power supply | |
| Noise emission | Disturbance from noise, impact on human health and environment | Transportation of cargo by railway (diesel) (PT) | Rail transport | Port Control Department, Environmental Coordinator, Environmental Specialist |
| | | Transportation of cargo by railway (electric) (PT) | | |
| | | Operation of equipment (PO) | Cranes and other equipment involved in loading and unloading of cargo | |
| | | Movement of containers (PT) | Container cargo | |
| | | Movement of cargo (PT) | General and packed cargo | |
| Noise emission and vibration | | Reconstruction of the port quays 21, 22, 23 and construction of quays 21A, 22A, 23A at Naujoji Uosto str. 3, dredging of the water area adjacent to the quays, and construction of an administrative building at Naujojo Sodo str., Klaipėda (PO) | Development of new port area (northern part) | |
| | | Port area extension to the port water area, development of the southern part (inc. development of the southern gates to the port, leisure boats infrastructure) (PO) | Development of new port area (southern part) | |

Assessment of environmental risks

Environmental risks are assessed using the general risk assessment procedure of the KSSA. The assessment of environmental risks is conducted for two types of undesirable events, the occurrence of which is expected to have a harmful impact on the environment:

- deviations from normal operations and
- emergency situations.

Separate assessment procedure and criteria have been developed for the likelihood of the undesirable event occurring and for determining the consequences of the undesirable event. Each type of undesirable event has its own set of assessment criteria. High-level environmental risks, with a value of 16 points or more, are considered significant environmental aspects.

Based on the environmental risk assessment, the only deviation from normal operations or emergency situation evaluation as significant environmental aspects is entry of untreated rainwater into the port environment and is assessed with 16 risk points.

Main goals and objectives

To implement the Environmental Policy and strategic goals presented above, as well as to address the significant environmental aspects, a set of overall objectives and specific environmental objectives were defined. Table 5 presents these goals and objectives, which represent the port's vision of complying with the legal requirements and minimizing emissions.

Table 5. Goals and objectives.

| Specific objective |
|---|
| Strategic goal: Ensure compliance with national and international environmental legislation and regulations related with port activities as well as environmental requirements, including environmental management system requirements |
| Ensure compliance with national and international legal requirements |
| Build and maintain a competent, ambitious goal-oriented team |
| Improve reputation of port through improved transparency in the field of environmental management |
| Strategic goal: Eliminate or minimise as much as practically possible all kind of environmental pollution |
| <i>Overall objective: Eliminate or minimize as much as technically possible the impact of port operations on <u>water quality</u> contributing to achieving and maintaining good water quality in the vicinity of port area</i> |
| Reduce the amount of undertreated rainwater discharged into the natural environment |
| Ensure rapid localization of oil spills and other pollutants within max 4 h |
| <i>Overall objective: Eliminate or minimize as much as technically possible <u>air pollution</u> in the vicinity of port area by controlling and reducing direct and indirect emission to air and dispersion of pollution</i> |
| Improve environmental monitoring and operational control to minimise or reduce air pollution, including dust and odour from all port activities |

| |
|---|
| <i>Overall objective: Eliminate or minimize as much as technically possible noise pollution resulting from port activities and reduction of impact of neighbouring territories</i> |
| Improve environmental monitoring and operational control to minimise or reduce noise pollution and vibration |
| Strategic goal: Strive to become energy efficient and climate neutral port |
| <i>Overall objective: Reduce direct and indirect GHG emissions associated with port activities</i> |
| Reduce GHG emissions from operation of KSSP own fleet by renewing fleet and increasing use of electricity instead of fossil fuels reaching 10% of energy consumption by 2026 |
| Increase share of renewable energy used in the port |
| Reduce GHG and air pollutant by ensuring vessels in port are using onshore power supply according to the relevant legislative requirements by 2030 |
| Improve GHG emission accounting |
| <i>Overall objective: Improve energy efficiency in the port and reduce use of natural resources</i> |
| Ensuring the rational use of energy resources (compared to 2022) |
| Strategic goal: Become safe port minimising risks associated with port operation, including potential impact on geomorphological conditions |
| <i>Overall objective: Ensure low level of industrial risks at the port territory</i> |
| Ensure high level of risk management in the port area |
| <i>Overall objective: Reduce impact of port operations and development on geomorphological conditions of the region</i> |
| Reduce potential negative impact of port activities of coastal erosion processes |

Port environmental performance

The performance is evaluated based on the KPIs, which arose from the environmental policy, goals and objectives of the port. There are 34 KPIs identified, which will contribute to evaluation of the environmental performance of the port accurately and focusing on the significant environmental aspects identified by the Environmental Management Group of the KSSA. KPIs are divided into 3 groups: Operational Performance Indicators, Management Performance Indicators and Environmental Conditions Indicators. Some of the KPIs were already being monitored in the port. Monitoring of some of the nature bodies is legally required by the state since the port has a noteworthy impact on the environment. Annual monitoring has been conducted on behalf of KSSA by the specially selected contractor focusing on 7 major elements in port territory of the nature affected by the port activities:

- Coastline
- Bottom sediment
- Soil compaction
- Underwater slope morphology
- Smeltės botanical reserve
- Water quality
- Biota.

These monitoring results can be found in annual port monitoring report.

Another type of monitoring related to the port's significant environmental aspects is conducted by KSSA itself. Measured parameters: noise, PM_{2.5}, PM₁₀ and meteorological conditions. With this monitoring data the port covers part of its newly set environmental conditions and operational performance indicators and this data can already be used to evaluate port's past and present environmental performance.

The data for majority of the KPIs set as management performance indicators is already being collected in the port. Having more structured output and being able to compare the data from different years will allow the port to improve. Finally, introduction on new KPIs will greatly improve port's ability to control all relevant significant environmental aspects.

Some KPIs were set to track the reach of environmental goals and objectives set in the policy of the port.

Overview of the KPIs values representing the environmental performance of the port can be found in Table 6.

Table 6. Port environmental performance based on the key performance indicators for the significant environmental aspects.

| Key performance indicator | Methodology/source of information | 2021 | 2022 | 2023 | 2024 | Note |
|---|--|-------------------------------------|---|-------------------------------------|------|--|
| Carbon footprint | GHG emission (Scope 2 or 3) from vessel movement and goods transportation (t, absolute emissions) | - | 91689.87 t | - | - | GHG emission under Scope 3, inc. KSSA own emissions |
| | GHG emission (Scope 2 or 3) from vessel movement and goods transportation (GHG t/year cargo turnover in t) | - | 0.0025 | - | - | |
| Emissions into air from vessel movement and cargo transportations | NO _x , PM and SO _x emission calculation from vessel movement and goods transportation (t, absolute emissions) | - | NO _x – 1285.32 t PM – 60.81 t SO _x – 40.55 t | - | - | - |
| | NO _x , PM and SO _x emission calculation from vessel movement and goods transportation (t/year cargo turnover in t) | - | NO _x – 0.000036 PM – 0.000002 SO _x – 0.000001 | - | - | - |
| Energy consumption | KSSA own consumed energy, total and % of renewable energy used | Total energy consumed – 1129505 kWh | Total energy consumed – 1025637 kWh | Total energy consumed – 1004787 kWh | - | Renewable energy sources are not yet used, purchase planned for 2024 |
| Number of environmental incidents in port area | Number of incidents in register of incidents per year | - | 16 | 19 | - | - |
| Percentage of beneficial use of dredging material | Dredged material accounting | 0 % | 4,55 % | 0 % | - | Beneficial use was only performed once in 2022 for Melnragė I natural seabed formation |

| Key performance indicator | Methodology/source of information | 2021 | 2022 | 2023 | 2024 | Note |
|---|--|-------|--------|---------|--|---|
| Number of reasonable complains from Klaipeda city residents on odour | Register of complains addressed to Authority, municipality, regional environmental protection institutions | 0 | 0 | 0 | - | There have been complaints from citizens but none of them have been evaluated as reasonable |
| Number of reasonable complains from Klaipeda city residents on high noise | Register of complains addressed to Authority, municipality, regional environmental protection institutions | 6 | 6 | 2 | - | |
| Number of reasonable complains from Klaipeda city residents on dust pollution | Register of complains addressed to Authority, municipality, regional environmental protection institutions | 0 | 0 | (1) | - | The complaint in 2023 is under investigation, not yet confirmed as reasonable |
| Financial resources planed for environmental protection in a selected year | % of total KSSA annual budget | n/a | n/a | n/a | 18,5 % of total annual costs and investment budget | The planned budget for 2024 in the environmental protection is of two types: annual costs and investments. Investment budget: EUR 20,7 million; Annual costs: EUR 0,6 million. |
| The proportion of employees that received environmental training | % of employees that had environmental training/total staff in a selected year, KSSA training plan and list of participants | 8,8 % | 9,17 % | 14,41 % | - | - |
| Number of non-compliances and | Results of external audit review | 1 | 6 | - | - | - |

| Key performance indicator | Methodology/source of information | 2021 | 2022 | 2023 | 2024 | Note |
|--|--|------------------------------------|------------------------------------|------------------------------------|------|---|
| observations during the external ISO14001 management system audit | | | | | | |
| Number of proved violations of environmental regulations by KSSA and tenants (fines) | Register/number of fines | - | 17 | 14 | - | Total across all companies in the port |
| Oil and chemical spill localization time to stop spreading of pollution | Recorded time of localization, hours | 4 | 4 | 4 | - | - |
| Number of trainings in oil spill clean-up | Training plan, register of trainings conducted | 1 | 1 | 1 | - | Training exercises organized and carried out by the Port Security Department |
| Number of trainings on emergency response | Training plan, register of trainings conducted | 5 | 6 | 6 | - | Training exercises organized and carried out by the Port Control Department |
| Number of audits of tenants' risk management systems | Register/protocols of audits | 0 | 5 | 4 | - | - |
| Compliance with sulphur limit regulations | % of tests/analysis compliant with sulphur limit regulations | - | - | 100% | - | Measured by drone in July 2023 only |
| Exceedances of legally defined | Number of cases of exceedances of legally defined annual and daily | PM _{2.5} – no exceedances | PM _{2.5} – no exceedances | PM _{2.5} – no exceedances | - | Monitoring data is only calculated in the stations closest to the port's border with residential areas. The |

| Key performance indicator | Methodology/source of information | 2021 | 2022 | 2023 | 2024 | Note |
|--|---|--|--|---|------|--|
| PM ₁₀ and/or PM _{2,5} concentrations | PM ₁₀ and/or PM _{2,5} concentrations identified via constant and/or long-term air quality monitoring where it is available, e.g. conducted by port tenants | PM ₁₀ – no exceedances | PM ₁₀ : Station 39653 – 33 day average (of 50 µg/m ³ and more) exceedances | PM ₁₀ : Stations Nemuno 1 – 50, Nemuno 2 – 37, Nemuno 4 – 43 day average (of 50 µg/m ³ and more) exceedances | | stations are operated by the port and collected data is used for indicative monitoring |
| Exceedances of legally defined noise limits | Exceedances of annual noise limits per period legally defined (day, evening, night) identified via constant and/or long-term noise monitoring where it is available, e.g. conducted by port tenants | Day time – no exceedances Evening time – no exceedances Night time 57 dBA annual exceedance in the station AQM65 492 | Day time – no exceedances Evening time: Station 39654 – 62 dBA annual exceedance Night time: Station 39654 – 61 dBA annual exceedance; Station 39657 – 59 dBA annual exceedance | Day time – no exceedances Evening time – no exceedances Night time 56 dBA annual exceedance in the station Kalnupės 1 | - | National legally defined noise limits: day time 65 dBA, evening time 60 dBA, night time 55 dBA. The stations are operated by the port and collected data is used for indicative monitoring. Exceedances were determined by calculating a year average of noise for defined part of the day |

The port previously did not calculate GHG emissions based on the GHG protocol methodology described by Scope 1, 2 and 3, nevertheless the port is currently developing its first detailed emission inventory (the inventory report will be finalised in 2024 reporting about the emissions of 2022), where all major GHG emitters will be monitored, the total emission will be calculated and it will give a start for future annual reporting as well as reaching port's environmental goals. Another planned activity by the port is to use energy from renewable energy sources, which will give results also from year 2024. Some of the other KPIs' values are also missing, since the port has not collected this data previously, but it is foreseen to start from 2024, those are: emissions into air (pollutants and GHG) from vessel movement and cargo transportation, number of vessels using onshore electricity supply, audience reach of the KSSA environmental information and surveillance of compliance with sulphur limit regulations.

There is seen a stable trend and continuity over the years in the number of trainings organized on emergency response and oil spill localization. Management in this regard is stable and well-organized. Environmental performance based on other KPIs is lacking data or continuity – the results will be analysed and presented in the upcoming years based on the KPI data collected starting from 2024.

Compliance with environmental legislation

The port is compliant with environmental legal requirements, which are relevant to port's significant environmental aspects, nevertheless, the port will regularly review its compliance, will cooperate with relevant stakeholders for continuous improvement and will update the list of legal and environmental requirements at least once per year.

The port uses monitoring as an effective tool to control and track the state of their environmental parameters and to react fast in case of deviations. As part of monitoring of compliance with legal requirements the internal and external audits are conducted regularly.

Since this is the first environmental and legal compliance review done in the scope of PERS, there is no comparison with previous data / information available. More detailed information about applicable legislation for significant environmental aspects can be found in Annexes 1 and 2.

4. Environmental management organization

The port is actively striving to become a sustainable port with high added value and significant economic and social benefits for the city and the country. Since 2023, KSSA has become a private legal entity with limited civil liability and a split share capital. 100% of the shares are owned by the State. The management bodies of KSSA are the general meeting of shareholders, the Supervisory Board, the Board of Directors and the Director General. KSSA complies with the fundamental principles of the OMX NASDAQ Corporate Governance Code. The overall organizational management structure of KSSA is presented in Figure 8.

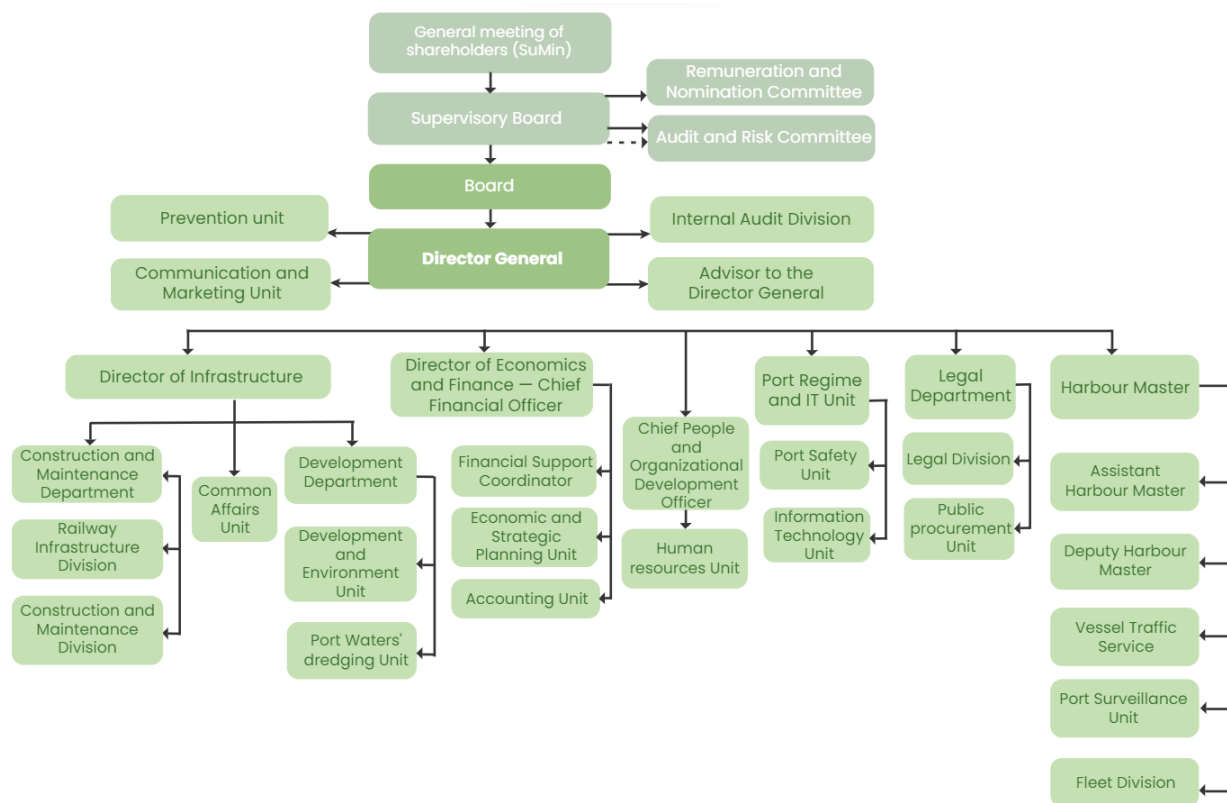


Figure 8. Organizational structure of KSSA

KSSA has recently set up an Environmental Management Group, made up of specialists from different departments, all of whom are involved in various environmental aspects. The Group is composed of the following specialists: Infrastructure Director, Environmental Coordinator, Environmental Specialist, Harbour Master, Head of Dredging, Head of Development and Environmental Protection, Head of Prevention, Head of Legal, Head of Economics and Strategic Planning, Head of Port Security, Head of Construction and Maintenance, Head of Railway Infrastructure, Head of General Affairs, Head of Personnel. The companies operating in the harbour area have their own Sustainability Committee which organizes regular meetings to discuss issues of concern. In addition, external consultants are engaged to help KSSA with temporary assignments when additional specific expertise are needed.

Environmental management in KSSA is not centralized, responsibilities are spread across different departments. The overall management of environmental issues throughout the port is the responsibility of the environmental coordinator and specialist, who are part of the Development and Environment Department in the Port Development Division. Additionally environmental functions are performed by other departments, which make a significant contribution to the port's sustainable operation. Therefore, to assess the overall readiness of the port to address environmental issues, it is necessary to review the activities and functions of all the responsible departments.

Holding the key responsibility for managing environmental issues throughout the port, the Environmental Coordinator and the Environmental Specialist share the following tasks:

- Participate in and propose the formulation of KSSA environmental goals and objectives, coordinate their implementation, propose environmental measures, prepare environmental reports and assessments,
- Coordinate the environmental functions of the responsible divisions within KSSA,
- Organize and carry out environmental monitoring of the port, to identify and assess the risks and environmental impacts of the activities of the tenants operating in the port and to propose risk management measures. To assess, within the scope of their competence, the legislation of Lithuanian and international organizations, technical innovations, to collect proposals from the responsible divisions and to make generalized proposals for their implementation, to propose amendments to the tenants existing internal documents, to follow up amendments and additions to these documents.

In addition, the Environmental Coordinator organizes and coordinates activities aim at achieving the objectives of the port's Environmental Strategy and Strategic Action Plan, takes care of the implementation and maintenance of the PERS system, and represents KSSA on environmental issues in cooperation with companies, institutions, public organizations or other interested parties outside the port area. The coordinator shall also represent the port in environmental matters in other ports.

One of the environmental objectives of the port is to minimize the environmental impact of its activities and to ensure sustainable port management. Several different departments with environmental tasks contribute to these objectives. In the Prevention Unit Insurance Risk Management Specialists are responsible for sustainability and preparing reports describing environmental criteria. The Data Protection and Risk Management Specialists are responsible for coordinating environmental risk management, ensuring compliance with ISO 14001 and recertification. The Port Waters Dredging Unit in the Development Department is responsible for the environmental monitoring of the port and the calculation and declaration of charges for environmental pollution from mobile sources and packaging. This department is also responsible for the statistical analysis and accounting of the tenant's environmental expenditure, the quarterly reporting of dredged soil and the testing of soil prior to dredging works.

To ensure smooth and uninterrupted operations in the port in relation to the ships' operational functions, the Fleet Division personnel (Masters and Shift Masters together with the ship's crew) take care of the disposal of oil and other pollutants, the collection of foreign large objects from the surface of the water, and the delivery of wastewater to the authorized company. The personnel coordinate all operations involving oil, sewage and garbage, also keep logs in the ships' logbook, stamped with the ship's seal, and archive the logs.

One of the Port Surveillance Unit's main functions is to deal with environmental incidents in a timely manner and to enforce pollution prevention from the ships requirements. As part of their

environmental functions, they carry out inspections and environmental monitoring in the port area and the water area, respond to environmental incidents in a timely manner to ensure the localization and removal of pollutants from the port area, ensure compliance with the requirements for the prevention of pollution from ships and the management of ship waste, and organize the reception of wastewater from cruise ships.

Equally important are the Construction and Maintenance Division, the Construction and Maintenance Department and the Port Regime and IT Unit, which ensure compliance with environmental requirements by managing secondary raw materials and construction waste (scrap metal) and electronic waste generated by the facilities are ensure that it is properly disposed. These functions are carried out by the Project Managers responsible for the projects under their responsibility and by the Deputy Head of the Port Regime and IT Unit.

Considering the wide distribution of specialists with environmental functions in the departments of KSSA, their detailed tasks and functions listed above, KSSA has developed strong environmental management system covering all the significant aspects.

5. Stakeholders of the port

The port focuses on the provision of service compliant with all internal and external environmental requirements and environmental goals of port's environmental strategy, creates added value for the port customers, partners and the country, invests in the sustainable growth of the port's industrial complex and actively cooperates with the port community to reduce the environmental impact of its operations.

The purpose of the stakeholder analysis is to help the port to build and maintain a constructive relationship with the stakeholders, provide means for their effective and inclusive engagement, ensure that appropriate environmental and social information is disclosed, meaningful consultations with the stakeholders are held their feedback is collected, and any kind of complaints from stakeholders are responded to and managed timely and effectively. Main groups of stakeholders identified are presented below.

National authorities

Three ministries are primarily related with regulating port's operations. Ministries have general responsibility for developing sectorial policies, while national regulatory bodies and governmental agencies are granting permits and other approvals, ensuring appropriate enforcements of legal requirements related to port's operations.

Relevant institutions under the Ministry of Transport and Communications are:

- JSC Lithuanian Inland Waterways Authority – responsible for developing and maintaining shipping waterways in Lithuanian inland waters in collaboration with KSSA;

- JSC Lithuanian Road Administration oversees organizing and coordinating the reconstruction, maintenance and development of the roads of national significance, including those connecting port to the rest of Lithuania and main export routes to transport cargo. Moreover, the Road Administration is cooperating on noise mitigation from road transport in the areas adjacent to territories managed by KSSA;
- JSC Smiltynės perkėla is divided into two terminals – the old ferry terminal and the new one, both of which are located within the boundaries of the port. Ferry terminals are responsible for transporting passengers and vehicles on the route Klaipėda-Smiltynė and it plays an important role for the seaside tourism industry;
- JSC Lithuanian Railways is responsible for railway cargo shipping and logistics, as well as management, maintenance and development railway infrastructure. The cargo is being transported from the port via trains from and to other Lithuanian cities or abroad.

Relevant institutions under the Ministry of Environment are:

- Environmental Protection Agency is a regulatory authority, which in various aspects is related to port's activities including supervision and evaluation of port's environmental performance and collection of state monitoring data. The Agency also issues permits and approves Environmental Impact Assessment reports, which are mostly required for port development and operations by port tenants;
- Environmental Protection Department is responsible for implementation of national policy on state control of the environment, monitoring port's environmental performance, investigation of complaints from the citizens or companies within its competence, inspection and monitoring of compliance with environmental regulation. In response to the complaints received, the department can organise an inspection of the port to either confirm or reject the complaint;
- State Territorial Planning and Construction Inspectorate controls certain aspects of port's development projects, investigates possible complaints from the citizens and performs onsite inspection;
- State Service for Protected Areas conducts monitoring of protected nature sites, which are part of or are located in close proximity to the port territory.

Institutions under the Ministry of Health are:

- Klaipėda Department of the National Public Health Centre monitors the complaints from citizens about noise, dust, odours or other environmental aspects. The centre performs state inspection and control concerning health matters. It evaluates the Environmental Impact Assessment reports of port's development projects in terms of the impact on public health, as well as participates in the issuing of pollution permits for port tenants.

Municipal authorities

Klaipėda City Municipality is responsible for development of territorial planning documents, preparation and approval of special plans for the development of renewable energy sources, approving terms of references for technical design of the new development areas, granting construction permits having in mind one of its priorities – the well-being of the residents of Klaipėda City.

General public

Klaipėda City residents represent individuals and communities that may be directly or indirectly affected by the port operations. Since the port is in a very close proximity to the residential areas, the impact on the residents and the environment is perceived by the residents is an important issue.

Since the port is a crucial strategic, cargo and passenger transportation object in Lithuania, inhabitants of Lithuania in general are demonstrating interest in port's environmental impact and its activities. The environmental reports and other port's environmental information should be made publicly available. General public also includes a specific subcategory of port customers, such as passengers of the ferries and cruise ships, that can have a direct contact with port's facilities and environment.

Vulnerable groups represent people or groups of people that may be affected by the port by virtue of their physical disability, social or economic standing and similar reasons. These can be ethnic minority groups, elderly people, disadvantaged socially supported people, unemployed youth, disabled persons. Some individuals within these vulnerable groups can be more sensitive to environmental impacts, such as dust and noise emission, odour from the cargo handling or oil.

Port tenants

Tenants are various Lithuanian and international companies, that rent the land and operate in the port's territory. The majority of the companies are responsible for key port operations, such as cargo handling, passenger transportation, ships' repair and building. They are responsible for the main services that the port provides, as well as environmental impact resulting from port activities. Since port tenants are the main profit generators for the port, it makes them one of the most influential stakeholders.

Non-governmental organisations (NGOs)

Organisations that have direct interest in the social and environmental aspects of the port operations and that can influence the port directly or through public opinion. There are many NGOs that are or could potentially be interested in the activities that port perform and on the impact that it has or could have on the environment.

Other interest groups

National law enforcement institutions, emergency services (e.g. firefighters), utility owners and operators (having the expectations from the port to use their services as agreed in the contracts, such as wastewater treatment and drinking water providers) and local mass media. Other service providers include consultants, analytical laboratories or supplies to the port and other temporary assignment services.

6. Environmental objectives, actions and projects

Action plan

Based on the port’s environmental review, legal compliance assessment and the environmental policy, the set of actions has been developed (Table 7). It represents main areas of interest that are in line with defined significant environmental aspects. Action plan is a roadmap for achieving objectives and included specific actions together with a set of indicators for completion to control its implementation.

Table 7. Action plan of KSSA.

| Specific objective | Actions | Timeframe | Responsible structural unit/expert | Indicator for completion |
|---|--|--|---|--|
| Strategic goal: Ensure compliance with national and international environmental legislation and regulations related with port activities as well as environmental requirements, including environmental management system requirements | | | | |
| Ensure compliance with national and international legal requirements | Regularly annually review of legal aspects related to port activities and check compliance | Constantly, annual control | Environmental Coordinator, Environmental Specialist, Legal Department | Legal reviews conducted |
| Build and maintain a competent, ambitious goal-oriented team | Ensure regular environmental training for port employees | Annually | Personnel Department, Environmental Coordinator, Environmental Specialist | Training activities for staff (% of employees that had environmental training/total staff in a year) |
| | Ensure regular meetings of the environmental management team | 4 times per year | Environmental Coordinator, Environmental Specialist | Number of meetings per year |
| Improve reputation of port through improved | Develop and publish Environmental reports biennially and non-financial report annually | Once per year or once in two years, by 1 March | Environmental Coordinator, Environmental Specialist | Number of downloads of the report |

| Specific objective | Actions | Timeframe | Responsible structural unit/expert | Indicator for completion |
|--|--|----------------------|--|---|
| transparency in the field of environmental management | Provide information and environmental monitoring data on the port website | Constantly | Environmental Coordinator, Environmental Specialist, Communications and Marketing Department | Number of visits of the relevant page |
| Strategic goal: Eliminate or minimise as much as practically possible all kind of environmental pollution | | | | |
| <i>Overall objective: Eliminate or minimize as much as technically possible the impact of port activities on <u>water quality</u> contributing to achieving and maintaining good water quality in the vicinity of port area</i> | | | | |
| Reduce the amount of undertreated rainwater discharged into the natural environment | Develop measures for control and better management of rainwater discharge in the port area | 2025 | Environmental Coordinator, Environmental Specialist | Rainwater monitoring program |
| Ensure rapid localization of oil spills and other pollutants within max 4h | Provision of regular training to responsible employees – at least once a year | Annually | Environmental Coordinator, Environmental Specialist, Port Security Department | Recorded time of localization Number of trainings conducted |
| | Improve or introduce a new spill detection and notification system | 2025 | Environmental Coordinator, Environmental Specialist, IT Department | % of spills detected by the automated system |
| <i>Overall objective: Eliminate or minimize as much as technically possible <u>air pollution</u> in the vicinity of port area by controlling and reducing direct and indirect emission to air and dispersion of pollution</i> | | | | |
| Improve environmental monitoring and operational control to minimise or reduce air pollution, including dust and odour from all port activities | Collect and assess the compliance of ships in port with sulphur in their fuel | Annually | Environmental Coordinator, Environmental Specialist | Compliance with sulphur limit regulations |
| | Extend and improve sensor air quality monitoring system, including calibration of sensors | 2025 | Environmental Coordinator, Environmental Specialist, IT Department | Exceedances of legally defined PM ₁₀ and/or PM _{2,5} concentrations |
| | Ensure regular analysis and assessment of monitoring data and produce annual reviews of data | Constantly, annually | Environmental Coordinator, Environmental Specialist | |
| <i>Overall objective: Eliminate or minimize as much as technically possible <u>noise pollution</u> resulting from port activities and reduction of impact of neighbouring territories</i> | | | | |
| Improve environmental | Extend and improve sensor noise monitoring system, | 2025 | Environmental Coordinator, | |

| Specific objective | Actions | Timeframe | Responsible structural unit/expert | Indicator for completion |
|--|--|---|--|---|
| monitoring and operational control to minimise or reduce noise pollution and vibration | including calibration of sensors | | Environmental Specialist, IT Department | Exceedances of legally defined noise limits |
| | Ensure regular analysis and assessment of monitoring data and produce annual reviews of data | Constantly, annually | Environmental Coordinator, Environmental Specialist | |
| | Assess implementation of actions envisaged by Klaipeda city noise reduction action plan 2024-2028 | During development of the plan (2023) and during the period of implementation (2024-2028) | Environmental Coordinator, Environmental Specialist | |
| | Ensure control of noise and vibration level related to dredging activities, via controlling implementation of contractual conditions | Constantly | Environmental Coordinator, Environmental Specialist | Control of monitoring conducted by contractor |
| Strategic goal: Strive to become energy efficient and climate neutral port | | | | |
| Overall objective: Reduce direct and indirect GHG emissions associated with port activities | | | | |
| Reduce GHG emissions from operation of KSSA own fleet by renewing fleet increasing use of electricity instead of fossil fuels reaching 10% of energy consumption by 2026 | Building of 2 hybrid pilot boats | 2025 | Port Fleet Department | Electricity used by pilot boats, % of total fuel used |
| | Building of 1 vessel for waste collection from ships powered by electricity (hydrogen) | 2025 | Port Fleet Department | Carbon footprint |
| | Purchasing of 3 hybrid cars | 2025 | General Affairs Department | |
| | Installing 2 electric car charging stations by the end of 2024 | 2024 | General Affairs Department | |
| Increase share of renewable energy used in the port | Acquisition of solar power park for production of electricity for port operation | 2025 | General Affairs Department | |
| | Installation of solar panels on the roofs of KSSA | 2025 | General Affairs Department | |
| | Purchasing of renewable energy from the grid | 2024 | General Affairs Department | |
| Reduce GHG and air pollutant by ensuring relevant vessels in port are using onshore power supply according to the relevant | Development of onshore power supply (OPS) infrastructure for Ro-Ro ships by 2026 year | 2026 | Port Development and Environmental Department, General Affairs Department, Construction and Maintenance Department | Number of vessels using onshore electricity supply |

| Specific objective | Actions | Timeframe | Responsible structural unit/expert | Indicator for completion |
|--|---|-----------|---|--|
| legislative requirements by 2030 | Development of onshore power supply (OPS) infrastructure for all container and cruise ships by 2030 year | 2030 | Development and Environmental Department, General Affairs Department, Construction and Maintenance Department | |
| Improve GHG emission accounting | To develop GHG emission inventory for KSSA under Scope 1 and 2 by 2025 in accordance with GHG protocol standard | 2025 | Environmental Coordinator, Environmental Specialist | Emission inventory developed and updated annually |
| | Collect information on GHG emission from tenants on their emissions under Scope 1 and 2 by 2025 to contribute to KSSA Scope 3 emission inventory in accordance with GHG protocol standard | 2025 | Environmental Coordinator, Environmental Specialist | |
| | Development and adaptation of a methodology for assessing GHG emissions from the KSSA operations and from ships entering and operating in the port, and the development and adaptation of the software used to assess/calculate GHG emissions | 2025 | Environmental Coordinator, Environmental Specialist, IT Department | Methodology developed and the software adapted |
| Overall objective: Improve energy efficiency in the port and reduce use of natural resources | | | | |
| Ensuring the rational use of energy resources compared to 2022 | Monitor energy consumption | Annually | General Affairs Department | Electricity used in KSSA operations, % |
| | Change of lightening system under the KSSA control | 2025 | General Affairs Department | KSSA own consumed energy, total and % of renewable energy used |
| Strategic goal: Become safe port minimising risks associated with port operation, including potential impact on geomorphological conditions | | | | |
| Overall objective: Ensure low level of industrial risks at the port territory | | | | |
| Ensure high level of risk management in | Conduct regular audits of the port tenants' risk management systems | Annually | Port Security Department | Number of audits per year |

| Specific objective | Actions | Timeframe | Responsible structural unit/expert | Indicator for completion |
|---|--|---|--|---|
| the port area and tenants | Conduct emergency response trainings | Annually | Port Security Department | Number of trainings conducted per year |
| Overall objective: Reduce impact of port activities and development on geomorphological conditions of the region | | | | |
| Reduce potential negative impact of port activities of coastal erosion processes | Conduct regular monitoring of geomorphological conditions, including coastal, bottom sediment and underwater slope morphology dynamics monitoring | Based on the Environmental monitoring programme | Dredging Department, Environmental Coordinator, Environmental Specialist | Monitoring of coastal processes based on Environmental monitoring programme |
| | Implementation of necessary compensation measures to reduce negative impacts on coastline based on the conditions included in the Environmental Impact Assessment ¹ | | | |

¹ Klaipėdos valstybinio jūrų uosto išorinio ir vidinio laivybos kanalo tobulinimo (gilinimo ir platinimo), pietinio ir šiaurinio bangolaužių rekonstravimo (statybos) ir dalies Kuršių nerijos šlaito tvirtinimo bei pietinių uosto vartų statybos poveikio aplinkai vertinimas

Examples of best practices and management solutions

| | |
|--|--|
| Port of Klaipėda Country: Lithuania | Contact person: Aistė Kubiliūtė Position: Environmental Coordinator Email: a.kubiliute@port.lt ; info@port.lt |
| Environmental issue: relationship with local community, sustainable management of natural environment and other related aspects | |

Relevance to the 5 E's framework of the ESPO Green Guide:

- Exemplify** Example of the organization's dedication to reducing environmental impacts in alignment with the European Green
- Enable** Enables a new way of thinking for the whole organization and a new standard for implementing the infrastructural projects
- Encourage** Encourage the KSSA stakeholders to adopt preventive measures and to develop and deploy environmentally efficient technologies
- Engage** Engagement strategy by fostering mutual understanding and cooperation among the stakeholders about the environmental issues
- Enforce** Enforce priority objectives set out in the European Green Deal

Title of the best practice: **Green Port Concept**

The mission of the KSSA is to promote the well-being and prosperity of Lithuania and its citizens, to reduce port's environmental impact contribute to the improvement of the environment, in conformity with the EU Green Deal objectives. In 2021, the KSSA developed a Green Port concept, which was the basis for the Green Port Action Plan 2022-2026 (see cover page in Figure 9). In the Green Port Concept, one of the efficiency commitments of the KSSA is to focus on the major negative environmental impacts caused by the port's economic activities (air pollution and CO₂ emissions, water pollution, noise pollution and other impacts) and on initiatives that can mitigate

these impacts in the most effective way. The overall effect of the reduction measures envisaged by the Concept is 93.13 kt CO₂ eq. in 2030 compared to 2020. The estimated reduction in GHG emissions from KSSA activities would be 36.7 %.

Selecting measures that are easy to implement and adapt is crucial their implementation. In the context of the sustainable port development plan developed under the Green Port Concept, the objective is to encourage businesses in the KSSA to introduce pollution prevention measures, to develop, disseminate and deploy environmentally friendly technologies. The concept provides recommendations for measures and a summary of best practices to show that mutual understanding and cooperation can be beneficial for both stakeholders and the environment.

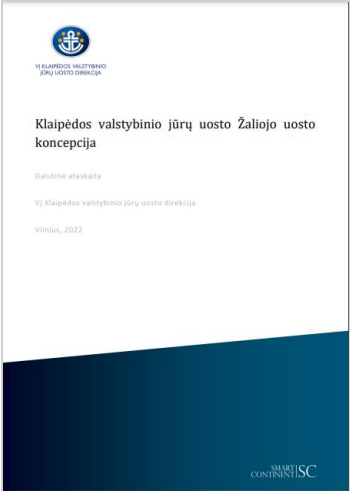


Figure 9. The front page of Klaipėda State Seaport Green Seaport Concept

| | |
|---|--|
| Port of Klaipeda Country: Lithuania | Contact person: Džiugas Šaulys Position: Head of Communications and Marketing Email: d.saulys@port.lt ; info@port.lt |
| Environmental issue: relationship with local community, dredging operations and disposal, habitat/ecosystem loss on land | |

Relevance to the 5 E’s framework of the ESPO Green Guide:

- 

Exemplifies how two seemingly opposing objectives – port development and environmental protection – can coexist
- 

Reduced need to transport the dredged material further to the sea, while using a novel method — replenish the beaches by rainbowing sand and forming an underwater sandbank very close to shore
- 

Encourages periodic use of sand replenishment of the formed underwater banks as part of future port dredging projects
- 

Engages local communities to express their needs while implementing port development projects
- 

Enforces recommendations specified in the Lithuanian Baltic Sea Management Strategy and the Coastal Zone Restoration Program

Title of the best practice: Klaipėda Beach Restoration

Storms are merciless for the Lithuanian seaside. They destroy infrastructure, break trees, trap large amounts of beach sand that leads to coastal erosion. Melnragė Beach, just next to the port’s breakwaters, for many years has been heavily affected by erosion. In order to replenish the beach at Melnragė with sand, during a channel dredging project in 2022, the KSSA formed an underwater sandbank next to the most eroded beaches (Figure 10 and Figure 11). Project managers were encouraged to look for more sustainable ways of developing the port, to communicate with and respond to the needs of local communities. The project created a new directional navigation channel underwater sandbank to replenish nearby beaches with sand.

Later, waves pushed the sand to the beaches and dunes which contributed to the regeneration of the coast.

This initiative demonstrated that large infrastructure projects can make a significant contribution to environmental goals and set the example of examining possible synergies between port development and environmental protection goals in the future.



Figure 10. A press conference to introduce the project to the society

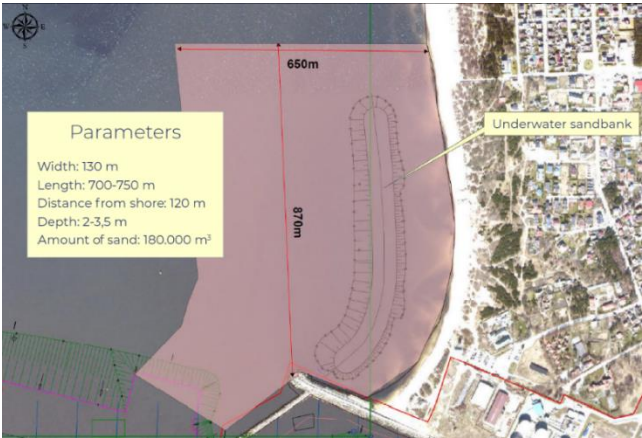


Figure 11. Illustration of underwater sandbank, which was carried out in two weeks

| | |
|--|--|
| Port of Klaipėda Country: Lithuania | Contact person: Aistė Kubiliūtė Position: Environmental Coordinator Email: a.kubiliute@port.lt ; info@port.lt |
| Environmental issue: air quality, climate change (energy efficiency, GHG emissions reduction & adaptation), dust, noise, relationship with local community, vehicle exhaust emissions | |

Relevance to the 5 E’s framework of the ESPO Green Guide:

- 

Exemplifies the commitment of companies in the port area to reduce the impact of pollution on the environment
- 

Enables increased efficiency in port operations, autonomy and sustainability
- 

Encourages the adoption of more efficient and environmentally friendly technologies
- 

Engages stakeholders to achieve a common understanding of the environmental impacts and benefits of the technologies being deployed
- 

Implement the objectives of the Klaipėda Port Green Concept Action Plan in relation to the European Green Deal

Title of the best practice: **Electrification of Equipment**

Klaipėda is a compact city, with the residents and the port located side by side. Although noise, and air pollution are currently within permitted limits, residents still occasionally complain about the disturbances of their peace. The KSSA encourages companies located in the port area to use equipment and technologies that are more favourable to the living and natural environment.

Since 2016, companies located in the port area have been implementing environmentally friendly technologies to help reduce their environmental impact. In 2020, an autonomous robot-locomotive powered by a rechargeable lithium-ion battery and equipped with a 4 kW solar power plant was presented (Figure 12). With a fully charged battery, the robot can work for about 24

hours, with a charging time of up to 2 hours. The electric motor has a power of 80 kW, which is enough to move more than 20 full wagons, or over 2000 tonnes.

By contributing to the port's environmental objective, particularly reducing air pollutant and GHG emissions, companies are also making more sustainable and environmentally friendly choices by expanding their crane fleets. A new generation of electric cranes has been introduced that not only has minimal environmental impact, but also generates electricity during certain manoeuvres. The mobile harbour crane is equipped with a certified cargo weighing system and other modern features to ensure safe, efficient and environmentally sustainable operation of the port terminal. The crane buckets have also been upgraded to prevent breakthroughs during handling, reduce noise disturbance and speed up the handling process, thus reducing handling time and ship berthing.

The purchase of an electro-hydraulic crane in 2022 only confirmed that environmentally friendly technologies can be even more efficient than the diesel ones used in the past (Figure 13). The electro-hydraulic crane contributes to increasing berth capacity and enables more and larger vessels to be loaded in a short time. This new technology makes it possible to reduce the need for physical labour and counteracts the shortage of workers: while the usual Handysize ship loading with scrap metal involves 18 workers per shift, the electro-hydraulic crane reduces the number of workers in the loading process to 6-7. The new crane has also reduced the loading time of the Handysize vessel by several days and the work can be carried out even in 25 m/s winds.



Figure 12. An autonomous robot-locomotive powered by a rechargeable lithium-ion battery



Figure 13. Electro-hydraulic crane purchased in 2022

7. Contact information



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Annexes

1. Register of significant environmental aspects and legal requirements.

| Environmental Aspect | Exposure pathway / Impact on | Activity | Source | Applicable legislation | Legal requirements | Control measures |
|----------------------|--|---|--|--|---|---------------------------------------|
| GHG emissions | Climate change, impact on human health and environment | Movement in port | Vessels and ships | 4 9 Article 17 | 10: fuel accounting, declare pollution from vehicles and pay pollution tax for a ton of fuel used 28: climate action 33: building infrastructure for refuelling | Monitoring of GHG emissions from 2024 |
| | | Use of auxiliary engines while moored at port | Vessels and ships | 10 Article 5-9, Annex 5 12 Annex VI 13 Article 15 14 28 30 Article 9-12 32 Chapter III 33 Article 4, 6, 9 34 | | |
| | | Operation of equipment | Cranes and other equipment involved in loading and | 4 9 Article 17 10 | | |

| Environmental Aspect | Exposure pathway / Impact on | Activity | Source | Applicable legislation | Legal requirements | Control measures |
|--|---|---|--------------------|---|---|--|
| | | | unloading of cargo | Article 5-9, Annex 5 | 33: building infrastructure for refuelling | |
| | | Transportation of cargo by road transport | Road transport | 13 Article 15 | | |
| | | Transportation of cargo by railway (diesel) | Rail transport | 14 30 Article 5, 9-12 33 34 | | |
| Emission of air pollutants (excluding dust) | Air pollution, impact on human health and environment | Transportation of cargo by road transport | Road transport | 4 9 Article 17 10 Article 5-9, Annex 5 13 Article 15 15 31 32 Chapter III | 10: fuel accounting, declare pollution from vehicles and pay pollution tax for a ton of fuel used | - |
| | | Use of auxiliary engines while moored at port | Vessels and ships | 4 7 8 9 Article 17 | 10: fuel accounting, declare pollution from vehicles and pay pollution tax for a ton of fuel used | Planned monitoring in cooperation with the Department of Environmental Protection, which is the main controlling authority, on compliance with sulphur requirements (including drone measurements). Internal |
| | | Movement in port | | 10 Article 5-9, Annex 5 12 | 21: limit the sulphur content in fuel oil to 0.5 % | |

| Environmental Aspect | Exposure pathway / Impact on | Activity | Source | Applicable legislation | Legal requirements | Control measures |
|----------------------|------------------------------|--|--|---|--|---|
| | | | | 13 Article 15 15 21 22 Regulation 13 32 Chapter III 35 | 22: control of NOx emissions 32: limitation of 0.1% sulphur content fuels for vessels at berth | monitoring is foreseen to start from 2025 It is also planned to consider extending air quality monitoring to include NOx measurements (measuring station). Proposals received in the study "Assessment of the emissions into the air of the port of Klaipėda operations" |
| | | Reconstruction of the port quays 21, 22, 23 and construction of quays 21A, 22A, 23A at Naujoji Uosto str. 3, dredging of the water area adjacent to the quays, and construction of an administrative building at Naujojo Sodo str., Klaipėda | Development of new port area (northern part) | 4 7 8 9 Article 17 10 11 12 13 Article 15, Section 4-5 15 17 | 10: fuel accounting, declare pollution from vehicles and pay pollution tax for a ton of fuel used 22: control of NOx emissions 32: 0.1% sulphur content fuels for vessels at berth | |
| | | Port area extension to the port water area, development of the southern part (inc. development of the southern gates to the port), leisure boats infrastructure) | Development of new port area (southern part) | 22 Regulation 13 26 30 Article 9-12 32 Chapter II, III 35 | | |

| Environmental Aspect | Exposure pathway / Impact on | Activity | Source | Applicable legislation | Legal requirements | Control measures |
|---------------------------------|---|---|--|--|--|---|
| Dust emissions | Air pollution, impact on human health and environment | Loading and unloading dry, bulk cargo | Dry, bulk cargo | 4 16 Chapter II, III | 16: requirements for bulk goods transportation and storage | Monitoring (PO sensors monitor PM ₁ , PM _{2,5} , PM ₁₀ , report hourly and alarm in case of exceedance of limit values) Complaints monitoring |
| | | Open storage of bulk goods | Open storage areas | | | |
| Change in coastline | Changes of coastal erosion, impact of man-made and natural structures | Use of wave breakers | Wave breakers | 4 7 17 18 19 20 26 30 | - | Monitoring (based on monitoring program required by the state, reported annually) |
| Changes in geomorphology | Change in currents, impact on environment | Port area extension to the port water area, development of the southern part (inc. development of the southern gates to the port (wave breakers), leisure boats infrastructure) | Development of new port area (southern part) | | | |
| | Change in water salinity in the channel, impact on environment | Port area extension to the port water area, development of the southern part (inc. development of the southern gates to the port (wave breakers), leisure boats infrastructure) | Development of new port area (southern part) | | | |

| Environmental Aspect | Exposure pathway / Impact on | Activity | Source | Applicable legislation | Legal requirements | Control measures |
|----------------------|---|--|--------------------|---|---|--|
| Water pollution | Impact on water environment | Open storage of bulk goods | Open storage areas | 4 16 Chapter II, III 26 30 37 Chapter III, VII | - | Port terminal site inspections |
| | | Loading and unloading dry, bulk cargo | Dry, bulk cargo | 4 7 Section III 11 16 19 Chapter II 30 37 Chapter III, VII | - | Port terminal site inspections |
| | Entry of untreated rainwater into the natural environment | Deviations from normal operations (under risk assessment, see annex 5) | n/a | 4 Chapter VII 19 Article 18 24 26 30 36 | 36: requirements for rainwater management, formula to calculate the amount of rainwater if no metering devices are present. Requirements for rainwater discharges from potential contaminated sites. Discharges of rainwater into the natural environment | KSSA is carrying out a feasibility study "Management of rainwater discharges from the Port of Klaipėda" to choose suitable control measure |

| Environmental Aspect | Exposure pathway / Impact on | Activity | Source | Applicable legislation | Legal requirements | Control measures |
|---|--|---|---|------------------------------------|--|--|
| Odour of oil and chemical products | Odour discomfort, impact on human health | Loading and unloading liquid cargo | Liquid cargo | 4 23 | - | Monitoring complaints |
| Use of resources (energy, electricity, fuel) | Depleting of natural resources | Port area extension to the port water area, development of the southern part (inc. development of the southern gates to the port (wave breakers), leisure boats infrastructure) | Development of new port area (southern part) | 13 Article 15, Section 4 | - | Future developments - monthly accounting of the usage of electricity and other resources |
| | | Hydrogen production | Hydrogen production facility | 25 27 29 | | |
| | | Operation of electric and/or hydrogen ship | Electric ship for waste collection from other ships | | | |
| | | Operation of hybrid pilot boat | Hybrid pilot boats | | | |
| | | Electricity supply to ships | Onshore power supply | | | |
| Noise emission | Disturbance from noise, impact on human health and environment | Transportation of cargo by railway (diesel) | Rail transport | 1 Articles 14, 28, 31 2 3 | 2: allowed noise level during the day 65 dBA, evening 60 dBA, night 55 dBA | Monitoring (PO sensors, measure hourly and alarm in case of exceedance of the limit values) Monitoring complaints |
| | | Transportation of cargo by railway (electric) | | | | |
| | | Operation of equipment | Cranes and other equipment | | | |

| Environmental Aspect | Exposure pathway / Impact on | Activity | Source | Applicable legislation | Legal requirements | Control measures |
|-------------------------------------|------------------------------|--|--|---|--------------------|--|
| | | | involved in loading and unloading of cargo | | | |
| | | Movement of containers | Container cargo | | | |
| | | Movement of cargo | General and packed cargo | | | |
| Noise emission and vibration | | Reconstruction of the port quays 21, 22, 23 and construction of quays 21A, 22A, 23A at Naujoji Uosto str. 3, dredging of the water area adjacent to the quays, and construction of an administrative building at Naujojo Sodo str., Klaipėda | Development of new port area (northern part) | 1 Articles 14, 28, 31 2 3 4 5 6 17 | | Future development - monitoring (PO sensors, report hourly and alarm in case of exceedance of limit values) Monitoring complaints |
| | | Port area extension to the port water area, development of the southern part (inc. development of the southern gates to the port, leisure boats infrastructure) | Development of new port area (southern part) | | | |

2. List of legal requirements

1. Law on Noise Management of the Republic of Lithuania // Valstybės žinios. 11-11-2004, No. 164-5971 (current consolidated version as of 02-01-2023)
<https://e-seimas.lrs.lt/portal/legalAct/lt/TAD/TAIS.244674/asr>
2. Order of the Minister of Health of the Republic of Lithuania No V-604 of 13 June 2011 "On the approval of the Lithuanian hygiene standard HN 33:2011 "Noise limit values in residential and public buildings and their environment" // Valstybės žinios. No 75-3638, 21-06-2011 (current consolidated version as of 14-02-2018)
<https://e-seimas.lrs.lt/portal/legalAct/lt/TAD/TAIS.402074/asr>
3. Order of the Minister of Health of the Republic of Lithuania of 21 July 2005, No. V-596 "On the approval of the description of the procedure for the assessment of the impact of noise on public health" // Valstybės žinios. No. 93-3484 (current version as of 21 July 2005)
<https://e-seimas.lrs.lt/portal/legalAct/lt/TAD/TAIS.260224?jfwid=q86m1vqqw>
4. Law on Environmental Protection of the Republic of Lithuania // Lietuvos aidas. 30-01-1992, No. 20-0 (current consolidated version from 22-11-2023 to 31-12-2023)
<https://e-seimas.lrs.lt/portal/legalAct/lt/TAD/TAIS.2493/asr>
5. Order of the Minister of Social Security and Labour of the Republic of Lithuania and the Minister of Health of the Republic of Lithuania of 2 March 2004 No. A1-55/V-91 "On the approval of the provisions on the protection of workers against the risk of vibration" // Valstybės žinios. 17-03-2004, No. 41-1350 (current consolidated version as of 01-11-2014)
<https://e-seimas.lrs.lt/portal/legalAct/lt/TAD/TAIS.228686/asr>
6. Order of the Minister of Health of the Republic of Lithuania of 31 December 2003, No V-791 "On the approval of the Lithuanian hygiene standard HN 50:2016 "Whole-body vibration: maximum permissible values and requirements for measurement in residential, special and public premises" // Valstybės žinios. 26-03-2004, No. 45-1490 (current consolidated version as of 01-05-2017)
<https://e-seimas.lrs.lt/portal/legalAct/lt/TAD/TAIS.230885/asr>
7. Law on Protection of the Marine Environment of the Republic of Lithuania // Valstybės žinios. 28-11-1997, No. 108-2731 (current consolidated version as of 01-02-2022)
<https://e-seimas.lrs.lt/portal/legalAct/lt/TAD/TAIS.46541/asr>
8. Law on Safe Navigation of the Republic of Lithuania // Valstybės žinios. 2000-09-07, No. 75-2264 (current consolidated version as of 01-05-2023)
<https://e-seimas.lrs.lt/portal/legalAct/lt/TAD/TAIS.107736/asr>
9. Law on Ambient Air Protection of the Republic of Lithuania // Valstybės žinios. 19-11-1999, No. 98-2813 (current consolidated version as of 01-01-2021)
<https://e-seimas.lrs.lt/portal/legalAct/lt/TAD/TAIS.90063/asr>
10. Law on Environmental Pollution Tax of the Republic of Lithuania // Valstybės žinios. 28-05-1999, No. 47-1469 (current consolidated version from 4-10-2023 to 31-21-2024)
<https://e-seimas.lrs.lt/portal/legalAct/lt/TAD/TAIS.80721/asr>

11. Regulation (EC) No 782/2003 of the European Parliament and of the Council of 14 April 2003 on the prohibition of organotin compounds on ships
<https://eur-lex.europa.eu/legal-content/EN/TXT/?uri=celex%3A32003R0782>
12. 1973 International Convention for the Prevention of Pollution from Ships (MARPOL)
[https://www.imo.org/en/about/Conventions/Pages/International-Convention-for-the-Prevention-of-Pollution-from-Ships-\(MARPOL\).aspx](https://www.imo.org/en/about/Conventions/Pages/International-Convention-for-the-Prevention-of-Pollution-from-Ships-(MARPOL).aspx)
13. Law on Alternative Fuels of the Republic of Lithuania // TAR. 08-05-2021, No. 7413 (current consolidated version from 01-07-2023)
<https://e-seimas.lrs.lt/portal/legalAct/lt/TAD/0409c522915c11eb998483d0ae31615c/asr>
14. Order of the Minister of the Environment of the Republic of Lithuania of 16 January 2017 No D1-56 "On the approval of the description of the procedure for monitoring, reporting and verification of carbon dioxide emissions from maritime transport" // TAR. 19-01-2017, No. 1136 (current consolidated version as of 01-07-2018)
<https://www.e-tar.lt/portal/lt/legalAct/235ab0b0de1e11e69ae9f38427b46dd7/asr>
15. Order of the Minister of the Environment of the Republic of Lithuania of 10 March 2021, No. D1-143 "On the approval of the description of the procedure for calculation of the tax for environmental pollution and concealed pollution from mobile sources of pollution" // TAR. 10-03-2021, No. 4954 (current consolidated version as of 10-03-2021)
<https://e-seimas.lrs.lt/portal/legalAct/lt/TAD/6b27144181e111eb9fc9c3970976dfa1?jfwid=-ij47742he>
16. Order of the Minister of the Environment of the Republic of Lithuania of 11 November 2020 No D1-682 "On the approval of the minimum requirements for the reduction of dust during storage, loading and transportation of loose solid materials" // TAR. No. 23677 (current consolidated version as of 11.11.2020)
<https://www.e-tar.lt/portal/lt/legalAct/4b6141b0240a11eb932eb1ed7f923910>
17. Law on Environmental Impact Assessment of Planned Economic Activities of the Republic of Lithuania // Valstybės žinios. 30-08-1996, No. 82-1965 (current consolidated version from 23-06-2023)
<https://www.e-tar.lt/portal/lt/legalAct/TAR.0539E2FEB29E/asr>
18. Law on Protected Territories of the Republic of Lithuania // Valstybės žinios. 24-11-1993, No. 63-1188 (up-to-date consolidated version from 4-01-2023 to 31-12-2023)
<https://e-seimas.lrs.lt/portal/legalAct/lt/TAD/TAIS.5627/asr>
19. Law on Water of the Republic of Lithuania // Valstybės žinios. 19-11-1997, No. 104-2615 (current consolidated version from 15-12-2023 to 31-12-2023)
<https://e-seimas.lrs.lt/portal/legalAct/lt/TAD/TAIS.45987/asr>
20. Law on the Seaside Strip of the Republic of Lithuania // Valstybės žinios. 19-07-2002, No. 73-3091 (current consolidated version from 04-01-2023 to 31-12-2023)
<https://e-seimas.lrs.lt/portal/legalAct/lt/TAD/TAIS.171375/asr>
21. IMO: Global 0.5% sulphur cap on marine fuels in 2020
<https://www.imo.org/en/MediaCentre/HotTopics/Pages/Sulphur-2020.aspx>

22. IMO NOx Tier III requirements for vessels built from 1-1-2021 operating in the North and the Baltic Seas (NECAs)
[https://www.imo.org/en/OurWork/Environment/Pages/Nitrogen-oxides-\(NOx\)-%E2%80%93-Regulation-13.aspx](https://www.imo.org/en/OurWork/Environment/Pages/Nitrogen-oxides-(NOx)-%E2%80%93-Regulation-13.aspx)
23. Order of the Minister of Health of the Republic of Lithuania No. V-885 of 4 October 2010 "On the Approval of the Lithuanian Hygienic Standard HN 121:2010 " Limit Value of Odour Concentration in the Residential Ambient Air" and the Rules for the Control of Odours in the Residential Ambient Air" // Valstybės žinios. No. 120-6148, 9-10-2010 (current consolidated version from 23-09-2023 to 31-12-2025)
<https://e-seimas.lrs.lt/portal/legalAct/lt/TAD/TAIS.382857/asr>
24. Order of the Minister of the Environment of the Republic of Lithuania No. D1-236 of 17 May 2006 "On the Approval of the Wastewater Management Regulation" // Valstybės žinios. No. 25-05-2006, No. 59-2103 (current consolidated version as of 01-05-2022)
<https://e-seimas.lrs.lt/portal/legalAct/lt/TAD/TAIS.276576/asr>
25. Law on Energy Efficiency Improvement of the Republic of Lithuania // TAR. 09-11-2016, No. 26481 (current consolidated version as of 26-06-2020)
<https://e-seimas.lrs.lt/portal/legalAct/lt/TAD/1bd85ba0a27b11e68987e8320e9a5185/asr>
26. Order of the Minister of the Environment of the Republic of Lithuania No. D1-546 of 16 September 2009 "On Approval of the Regulations on Environmental Monitoring of Economic Entities" // Valstybės žinios. 22-09-2009, No. 113-4831 (current consolidated version as of 01-11-2021)
<https://e-seimas.lrs.lt/portal/legalAct/lt/TAD/TAIS.353115/asr>
27. Renewable Energy Law of the Republic of Lithuania // Valstybės žinios. 24-05-2011, No. 62-2936 (current consolidated version as of 01-05-2023)
<https://e-seimas.lrs.lt/portal/legalAct/lt/TAD/TAIS.398874/asr>
28. Regulation (EU) 2021/1119 of the European Parliament and of the Council of 30 June 2021 establishing a framework for the achievement of climate neutrality and amending Regulations (EC) No. 401/2009 and (EU) 2018/1999 (the European Climate Act)
<https://eur-lex.europa.eu/legal-content/LT/TXT/?uri=CELEX%3A32021R1119>
29. Law on Excise Duty of the Republic of Lithuania // Valstybės žinios. 23-11-2001, No. 98-3482 (current consolidated version from 13-02-2023 to 31-12-2023)
<https://e-seimas.lrs.lt/portal/legalAct/lt/TAD/TAIS.154511/asr>
30. Law on Environmental Monitoring of the Republic of Lithuania // Valstybės žinios. 10-12-1997, No. 112-2824 (current consolidated version as of 01-01-2023)
<https://e-seimas.lrs.lt/portal/legalAct/lt/TAD/TAIS.47236/asr>
31. Order of the Minister of the Environment of the Republic of Lithuania No. 89 of 8 March 2000 "On the approval of the environmental normative documents LAND 14-2015 and LAND 15-2015" // Valstybės žinios. 17-03-2000, No. 23-593 (current consolidated version from 16-07-2022)
<https://e-seimas.lrs.lt/portal/legalAct/lt/TAD/TAIS.97168/asr>

32. Order of the Minister of Energy of the Republic of Lithuania, the Minister of the Environment of the Republic of Lithuania, the Minister of Transport and Communications of the Republic of Lithuania No. 1 -348/D1-1014/3-742 "On the Approval of the Compulsory Quality Indicators for Petroleum Products, Biofuels and Liquid Fuels Used in the Republic of Lithuania" // Valstybės žinios. 28-12-2010, No. 153-7849 (current consolidated version as of 01 -10-2022)
<https://e-seimas.lrs.lt/portal/legalAct/lt/TAD/TAIS.389888/asr>
33. Regulation (EU) 2023/1804 of the European Parliament and of the Council of 13 September 2023 on the deployment of alternative fuels infrastructure, and repealing Directive 2014/94/EU
<https://eur-lex.europa.eu/eli/reg/2023/1804/oj>
34. Law on Climate Change Management of the Republic of Lithuania // Valstybės žinios. 23-07-2009, No. 87-3662 (current consolidated version as of 01-01-2022)
<https://e-seimas.lrs.lt/portal/legalAct/lt/TAD/TAIS.349514/asr>
35. 2001 International Convention for the Control of Harmful Anti-Fouling Systems on Ships (AFS Convention)
<https://www.imo.org/en/OurWork/Environment/Pages/Anti-fouling.aspx>
36. Order of the Minister of the Environment of the Republic of Lithuania No D1-193 of 2 April 2007 "On the Approval of the Regulation on Surface Wastewater Management" // Valstybės žinios. 14-04-2007, No. 42-1594 (current consolidated version from 01-06-2023 to 30-04-2024)
<https://e-seimas.lrs.lt/portal/legalAct/lt/TAD/TAIS.295779/asr>
37. Order of the Minister of Transport of the Republic of Lithuania No 3-70-(E) of 17 February 2014 "On the Approval of the Rules for the Use of the Klaipėda State Seaport" // TAR. 17-02-2014, No. 1617 (current consolidated version from 01-01-2024)
<https://e-seimas.lrs.lt/portal/legalAct/lt/TAD/f23192a0984411e3aad2c022318814db/asr>