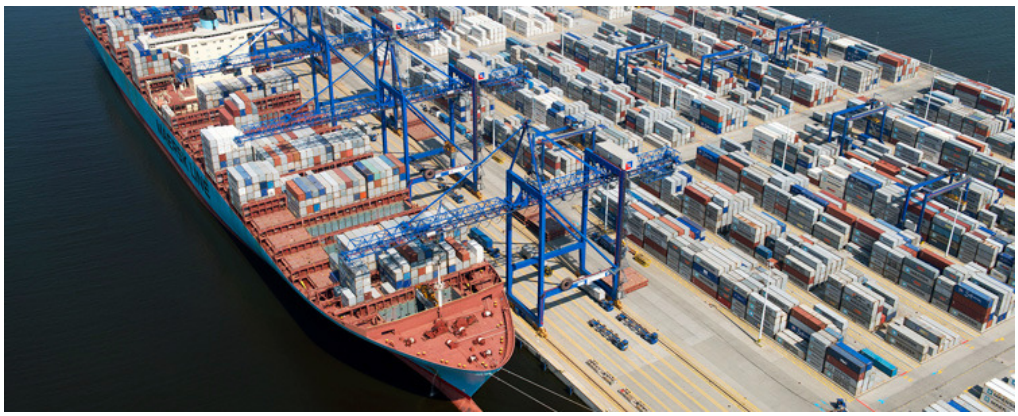
Deepwater Container Terminal, Gdańsk, Poland

Environmental and Social Impact Assessment (ESIA)

Client: DCT

May 2014



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A General Information

A1 Background of the Assignment

WS Atkins – Polska Sp. z o.o. (Atkins) has been commissioned by Deepwater Container Terminal Gdańsk S.A. (DCT) to conduct Environmental and Social Impact Assessment (ESIA) of planned construction and operation of new contatiner terminal quay adjacent to the existing DCT wharf.

The project will be constructed in the area adjacent to existing DCT 1 terminal, within the industrial area of Northern Port of Gdansk and will require land reclamation to construct a new 650 m long sea wall and achieve circa 47 ha operational storage area.

An EIA of the project has been prepared to meet Polish national requirements, together with an Appropriate Assessment of impacts on Natura 2000, which has been prepared in line with EC Guidance.

DCT is considering obtaining financing for the project from international financing institutions (IFIs), such as the European Bank for Reconstruction and Development and Nordic Investment Bank. Consequently, the scope of work for this ESIA is designed to confirm the international best practices for ESIA, including the EBRD Social and Environmental Policy (2008) and NIB Performance requirements have been complied with.

A2 Project Rationale

Port of Gdansk is a major international transportation hub situated in the central part of the southern Baltic coast, which ranks among Europe's fastest growing regions. According to the strategy of European Union the Port of Gdansk plays a significant role as a key link in the Trans-European Transport Corridor No. 6 connecting the Nordic countries with Southern and Eastern Europe.

It is essential that Gdańsk is located centrally in the southern part of Baltic Sea. Gdańsk is a Polish city on the Baltic coast, the capital of the Pomeranian Voivodeship, Poland's principal seaport and the center of the country's fourth-largest metropolitan area. The city lies on the southern edge of Gdańsk Bay (of the Baltic Sea), in a conurbation with the city of Gdynia, spa town of Sopot, and suburban communities, which together form a metropolitan area called the Tricity (Trójmiasto). Gdańsk has a population of 460,427 (December 2012), making it the largest city in the Pomerania region of Northern Poland.

Gdańsk is situated at the mouth of the Vistula River, whose waterway system supplies 60% of the area of Poland and connects Gdańsk to the Polish capital in Warsaw. This gives the city a unique advantage as the center of Poland's sea trade.

Together with the nearby port of Gdynia, Gdańsk is also an important industrial centre. Historically an important seaport and shipbuilding centre, Gdańsk was a member of the Hanseatic League, a commercial and defensive confederation of merchant guilds and their market towns that dominated trade along the coast of Northern Europe (source:Wikipedia).

Located at the mouth of the river, the Port of Gdansk, as well as the adjacent area is practically ice-free and tide-free all year round. Despite the sever winter weather the navigation conditions are favourable, which contributes to the Port of Gdansk being one of the most approachable ports in the Baltic Sea Region.

The Northern Port is the only port in Poland that is able to accept ships of the draft exceeding 13 m, i.e. the draft of the most modern container ships of Maersk Triple E, E, or PS classes. The Port of Gdańsk was indicated for the location because of the largest technical depth of the water fairway in Poland (17.1 m) and the fact that there already functions a terminal fulfilling the tasks compliant with the objective of the undertaking.

DCT Gdansk SA is the operator of the largest container terminal in Poland (DCT1) since 2007. DCT is the biggest and the fastest growing Polish container terminal and the only deepwater terminal in Baltic Sea that can accept calls from the largest vessels from the Far East. DCT

Terminal, located in the heart of Baltic Sea is located east-most amongst all the ports between Gdańsk and Le Havre.

The DCT Terminal serves Polish import, export, transit as well as sea transit. DCT is the natural gate for container reloading in Central and Eastern Europe. Thanks to investments in road and rail infrastructure conducted by Polish government and Gdańsk City, it has very well connection with inland transportation routs towards Central Europe and Russian Federation

The Project aims at increasing the throughput and improving the container transloading capacity of the port of Gdańsk. The Project will allow to increase the transloading capacity by 2,5 mln TEU1, and acheve the total capacity of DCT to 4 mln TEU.

DCT 2 covers relatively small area, but its realisation will positively influence the entire area of Poland, and other CEE countries

Due to the existing industrial nature of the proposed site, expected yard capacity, existing infrastructure and environmental impacts, the proposed location is the most feasible and suitable for the Project.

A3 General Introduction

The Project involves construction of a new deepwater container terminal 2 (DCT2). It will be functionally connected to the existing in Port of Gdańsk DCT 1 installation, maintaining integrity and separation of both installations.

The Project is at an intermediate stage of development. The concept study has been developed for the project (Koncepcja. Rozbudowa Morskiego Terminala Kontenerowego DCT w Gdańsku, DCT Gdańsk SA, sierpień 2013 r.). An environmental impact assessment for regulatory requirements has been undertaken by the company EKO-KONSULT Biuro Projektowo-Doradcze in 2013. The Project has obtained the environmental consent issued by RDOŚ-Gd_WOO.4211.29.2013.AT.9 dated 28.03.2014. The decision determines environmental conditions for construction of new deepwater container terminal.

The Project will be implemented by DCT Gdansk SA, an operator of the largest container terminal in Poland (DCT1) since 2007. The project will be constructed in the area adjacent to existing DCT 1 terminal, within the industrial area of Northern Port of Gdansk and will require land reclamation to construct a new 650 m long sea wall and achieve circa 47 ha operational area.

Dredging works at the area of approximately 220 000 m^2 will allow for calls from the largest container vessel in the world, the Triple-E with capacity of 18000 TEU. The Project will encroach from the sea side on the Natura 2000 site "Zatoka Pucka", special protected area (SPA) established for protection of birds under Birds Directive. No land acquisition is foreseen.

The project has been Categorised A in line with EBRD E&S Policy and NIB Sustainability Policy and Guidelines. The development of a new deep sea container terminal involving dredging and land reclamation requires an Environmental and Social Impact Assessment (ESIA) and a formal participatory public consultation process, inclusive a minimum of 60 day public disclosure of the ESIA package before EBRD Board meeting.

This Environmental and Social Impact Assessment (ESIA) has been compiled by WS Atkins-Polska Sp. z o.o. (‘Atkins’) on behalf of DCT GDAŃSK SA and the in line with the requirements of European Bank for Reconstruction and Development (EBRD) and Nordic Investment Bank (NIB) in relation to the Deepwater Container Terminal 2 Project (DCT2).

Taking into account advanced stage of environmental documentation, that has already been developed for the investment in compliance with Polish and EU laws, the ESIA was prepared to confirm there is no discrepancy between the Polish and EU regulations and the EBRD and NIB requirements. Therefore this report is to large extend based on the findings of the report prepared by EKO-KONSULT and made available by DCT Gdansk S.A.

[1] TEU = (twenty-feet equivalent unit) jednostka równoważna objętości kontenera o długości 20 stóp. Standardowy 20-stopowy kontener ma wymiary dł. 20×szer. 8×wys. 8,5 stopy, czyli 6,10×2,44×2,59 metra i objętość ok. 38,5 m3. Obecnie standardem są dłuższe kontenery 40-stopowe.

This Report presents the summary of the findings of the Environmental Impact Assessment, which has been undertaken for the proposed Project for regulatory purposes, and limited additional studies undertaken at the later stage.

The ESIA describes the main features of the development, identifies its significant impacts, together with appropriate management, mitigation and monitoring measures.

This document is a part of disclosure package. In addition to the ESIA and the disclosure package, Category A projects are required to provide:

- the evaluation of alternatives, including non-implementation;
- recommendations of mitigation or other measures to prevent or minimise potential impacts.

The following sections describe the outcome of the assessment and the underlying regulatory (and other) mechanisms by which the impact assessment of the proposed Project has been assessed.

A4 Outline of the Report and Associated Documentation

A4.1 Contents of this Document

This Statement contains the following sections:

- **Section A:** General Information: This section provides a general introduction to the Project, background to the ESIA process and the regulatory drivers, the scope of the assessment and the contents of the ESIA.
- **Section B:** Technical Description: Provides a detailed description of the Project including the rationale, location, programme and design. This section also reviews the design against the European 'Best Available Techniques' (BAT) requirements for design and operation of the proposed plant. Section B also provides details of the Project alternatives considered. Where a detailed assessment of alternatives is required, this is discussed in more detail in the appropriate sub-section of Section D.
- **Section C:** The Existing Environment: Provides a background to the physical, natural, historic and social characteristics of the proposed Project area, and the surrounding areas, which may be impacted upon by the proposed development.
- **Section D:** Assessment of Impact: This Section describes the potential environmental and social impacts, both negative and positive, that are likely to result from the construction, operation and closure and decommissioning of the proposed Project.
- **Section E:** Summary of Impacts and Mitigation Measures. This section presents a summary of the potential impacts identified and assessed in Sections D, together with a summary of proposed management / mitigation / control measures, and a description and ranking of the resultant residual impacts.
- **Section F:** Monitoring Programme. Provides and outline of the monitoring proposed throughout the project.
- **Section G:** Further Information: This Section presents the Bibliography and References appearing through this ESIA.

A4.2 Documentation Associated with this Statement (Disclosure Package)

The collection of documentation generated by the ESIA process is called the 'Disclosure Package'. In addition to this ESIA, the ESIA process has also involved the production of the following documentation:

- Non-Technical Summary (NTS);
- Stakeholder Engagement Plan (SEP);
- Environmental and Social Action Plan (ESAP).

A4.3 Availability of the Impact Assessment Documentation

The documentation relating to the ESIA will be available at the following locations:

- ERBD offices in London and Warsaw;
- DCT Gdańsk SA, ul. Kontenerowa 7, 80-601 Gdańsk, Polska.

A5 Impact Assessment Approach

A5.1 Project Assessment and Permits

This section describes the general approach to undertaking the ESIA for the DCT2 Project. The approach has been informed by:

- the requirements of the EBRD and NIB;
- the nature of the Project;
- the current status of Project implementation;
- the environmental and socio-economic background of the proposed Project area;
- the expertise of the ESIA team in undertaking similar projects.

The screening and scoping phase was part of the formal EIA procedure conducted according to the Directive 2011/92/EU of 13 December 2011 on the assessment of the effects of certain public and private projects on the environment and Act of 3 October 2008 on access to environmental information and its protection, public participation in environmental protection and on environmental impact assessments (Dz. U. of 2008 No. 199, item 1227 with amendments). According to the EIA Directive and decree of the Cabinet of 9 November 2010 (Dz. U. 2010 No. 213, item 1397) regarding undertakings that can significantly impact on environment the Project has been classified as requiring environmental impact assessment.

Independent Consultant (Atkins) undertook a review of administrative process leading to the issue of the environmental consent decision (pol. Decyzja o uwarunkowaniach środowiskowych realizacji przedsięwzięcia) for construction of Deepwater Container Terminal 2 on 28.03.2014 by Regional Environmental Protection Board (relevant authority). EIA EU Directive has been fully transposed into Polish legislation through above mentioned Act of 3 October 2008 on access to environmental information and its protection, public participation in environmental protection and on environmental impact assessments (Dz. U. of 2008 No. 199, item 1227 with amendments). , Compliance Matrix for the projects against Directive 2011/92/EU of the European Parliament and of the Council of 13 December 2011 on the assessment of the effects of certain public and private projects on the environment is presented inAppendix AI.IV. Compliance table with Habitats and Birds Directives is presented in Appendix AI.IV. This identified some minor improvemnets to the documentation, which have been addressed in the ESIA.

The formal EIA report was developed according to Polish law in 2013 by EKO-KONSULT. It was disclosed to the public for the period of 21 days during the formal EIA procedure in line with Polish legislation.

EIA report indicated that at the land area of the investment, there are breeding places of two bird species, which are a subject of protection at the nearby Natura 2000 area. The EIA report indicated that the breeding places will be destroyed at the stage of construction works and this impact will be constant and irreversible. Although the impact will refer to species which are subject of protection within Natura 2000 site, the destruction will take place outside the protected area. This issue was considered and assessed by competent authority (Regional Directorate for Environmental Protection), which stated in the environmental permit (issued on 28th of March 2014) that the impact on Natura 2000 site will not occur due to investment implementation.

According to the Article 79 of the EIA Act, issuing environmental permit is preceded by public participation proceeding, what is ensured by the authority. Compliance of public participation proceeding with Polish law means automatically compliance with EU law, as EIA Directive requirements have been fully incorporated into national legislation.

During the EIA proceeding for DCT2 investment the following actions concerning public participation and disclosure of information were undertaken:

- on 21 January 2014 the authority informed the public on the opportunity to submit remarks and comments to the EIA report, through: publishing information on the authority's (Regional Directorate for Environmental Protection) website and office board, DCT board, DCT of Gdansk City Hall, board of the Roads and Green Management Authority in Gdansk, Marine Office in Gdansk.

- in the period of 21 days (23.01.2014 - 13 02.2014) the EIA report was made available to the public. In this period, no remarks were submitted and no NGOs joined the proceeding.

One party to the proceeding – Management Board of the North Port Gdansk – submitted a request for not considering the bunkers No 615 and 616, as places suitable for compensation of negative impacts on bats. Finally, the authority indicated in environmental permit these and also other alterative bunkers as locations for compensation.

The environmental permit incorporated statements of authorities, which consulted conditions of the permit.

On 3rd of April 2014, the authority informed the parties of the proceeding on the possibility to analyse and comment on EIA proceeding documentation. No comments have been submitted at this stage.

The environmental consent decision (Polish:. Decyzja o środowiskowych uwarunkowaniach) for construction of Deepwater Container Terminal 2 has been obtained by DCT Gdansk SA on 28.03.2014.The investment implementation will result in development of an area currently used by valuable birds and bats species. There is no option to develop the investment, without destruction of these habitats, and therefore it was not possible to avoid or reduce impacts at source. Nevertheless, due to detailed assessment of this issue by bats/ birds experts in EIA report, proper mitigation (compensation) measures have been proposed and included finally in environmental permit.

Despite the environmental consent investor is obliged to obtain a permit to develop the Project in the area at risk of flooding prior to construction permit. Also dredging material disposal requires obtaining a permit prior to construction works; the application should be submitted no later than two months before the planned disposal and include environmental statement. Dredged material analyses may be required. The application should be submitted to the relevant authorities (Marine Authority in Gdynia) and include environmental impact statement. However it is not a formal EIA procedure according to EIA Directive and EIA Act.

Permits to be obtained at the planning/construction phase include also:

- permit (derogation) for disturbance of animals, which is required by Nature Conservation Act
- permit (derogation) for disturbance of animals, which is required by Hunting Law
- permission for felling trees and shrubs
- permission for disposal of dredged material in the sea
- permit (derogation) for building within a flood risk area
- arrangements with providers of utilities
- arrangements with the Pomeranian Monuments Conservator
- construction permit

Permits to be obtained at the operation phase include:

- water permit for discharge of stormwater into the Gdansk Bay waters
- (potentially) submission of information on air emission installation
- (potentially) permit for waste generation

The project has been Categorised A in line with EBRD E&S Policy and NIB Sustainability Policy and guidlines. The project is classified as Category A when it could result in potentially significant and diverse adverse future environmental and/or social impacts and issues which, at the time of categorisation, cannot readily be identified or assessed and which require a formalised and participatory assessment process carried out by independent third party specialists in accordance with the PRs

Therefore the development of a new deep sea container terminal involving dredging and land reclamation requires an Environmental and Social Impact Assessment (ESIA) and a formal participatory public consultation process

The ESIA should be considered in conjunction with the ProjectStakeholders Engagement Plan (SEP) and Environmental and Social Action Plan (ESAP).

The following sub-sections discuss the ESIA process and the regulatory and other requirements to which the assessment adheres.

A5.2 Review of Appropriate Assessment on Natura 2000

The Project will encroach from the sea side on the southern part of Natura 2000 site "Zatoka Pucka", special protected area (SPA) established for protection of birds under Birds Directive.

Appropriate Assessment of impacts on Natura 2000 has been prepared in line with EC Guidance by EKO-KONSULT and included:

- characteristics and determination of the subject of protection of the area (based on SDF),
- identification of impacts,
- forecast and determination of significance of impacts and preliminary prediction of mitigation measures,
- analysis and evaluation of possible reasonable alternatives (necessary in case of the negative impact on the environment cannot be excluded),
- identification of overriding public interest and prediction of compensatory measures.

The “Zatoka Pucka” Natura 2000 Special Bird Protection Area (SBPA) is located directly next to the north-eastern border of the investment, partially located within its borders (scooping works within the bay waters, construction of the quay). It is the most important of the listed nature protection forms from the point of view of environmental impact. The area is the most important place of wintering and stay/rest during seasonal migrations of water birds within Polish coastal waters. The Standard Data Form of “Zatoka Pucka” PLB220005 SBPA describes the natural value and the importance of the site as follows: “Bird refuge with an European rank of E 12. At least 28 bird species from Annex I to the Bird Directive and 11 species from the Polish Red Data Book (PRDB) are present”.

As a result of the EIA it was stated that:

- Investment will result in destruction of breeding sites of the Little Tern, Common Ringed Plover, Common Merganser and Common Shelduck (birds protected within the limits of SPA PLB220005 “Zatoka Pucka”). Authors of EIA classified this impact as significant impact on birds’ population being subject of protection of Natura 2000 protected area, whereas the authority’s (RDOŚ) interpretation says that damaged population is located outside the Natura 2000 area thus the Environmental Liability Directive scheme should be applied to plan compensation measures and not Natura 2000 specific one;
- No negative impact of the Project is expected to species recognized as a priority, in accordance with Appendix I of Birds Directive 79/409/EEC and Appendix 2 of the Regulation of the Minister of Environment of 12 January 2011 on special protection areas (Journal of Laws 2011, No. 25, item 133 with amendments).
- Alternatives and the nature of public interest to implement the proposed project have been analysed in the EIA Report. No alternatives for this project were found and at the same time imperative reasons of overriding public interest of its implementation were proved, dictated by economic and social considerations.

Compensation measures have been determined and assessed. They include:

- Creating breeding area for Little Tern (Sternula albifrons) and Common Ringed Plover (Charadrius hiaticula) and Common Shelduck (Jadorna tadorna);
- Installation of nest boxes for the Common Merganser (Memus meraanser),
- Proper work organisation including construction works out breeding season, keeping appropriate distance between the works area and bird colonies, supervision by the birds’ expert.

Proposed compensation measures are found sufficient. Moreover, despite of applied formal scheme of compensation (done by EIA Authors or decided by RDOS), its successful completion will secure sufficient protection of birds population being subject of Community interest.

The next area is the “Ostoja w Ujściu Wisły”, site of Community importance, PLH220044 located at a distance of 4 km to South-East. In accordance with SDF the refuge: “includes the estuaries of the largest Polish river, Vistula. They are also one of the largest and most important estuaries in Poland. The occurrence of 7 types of habitats from Annex I to the Council Directive 92/43/EEC was established, which form a typical complex of coastal, sandy plant communities.

Another protected area in the vicinity of the project due north-west is PLH220030 “Twierdza Wisłoujście”, site of Community importance, located in a distance of approx. 1.4 km.

According to the EIA Report the planned project was not found to have adverse impact on natural habitats and habitats of protected species in areas of importance for the Community, located in the vicinity of - PLH220030 “Twierdza Wisłoujście” and PLH220044 “Ostoja w Ujściu Wisły”.

The investment implementation will result in development of an area currently used by valuable birds and bats species. There is no option to develop the investment, without destruction of these habitats, and therefore it was not possible to avoid or reduce impacts at source. Nevertheless, due to detailed assessment of this issue by bats/ birds experts in EIA report, proper mitigation (compensation) measures have been proposed and included finally in environmental permit.

The Project will not have significant impact on Natura 2000 area. Investment will result in destruction of breeding sites of four species of birds protected within the boundaries of SPA PLB220005 “Zatoka Pucka”). The competent authority’s (RDOŚ) interpretation says that damaged population is located outside the Natura 2000 area thus the Environmental Liability Directive scheme should be applied to plan compensation measures and not Natura 2000 specific one. Proposed compensation measures are found sufficient and its successful completion will secure sufficient protection of birds population being subject of Community interest.

A5.3 Public Consultation Process

Formal consultations held by the local administration authority were also conducted at the stage of development of the following strategic documents (prior to DCT2 EIA procedure):

- Environmental Impact Assessment at the stage of building permit for the Deepwater Container Terminal located within the Northern Port in Gdańsk (DCT 1) (2004);
- Update of the Study of conditions and directions of spatial development for Gdańsk (2007);
- Local Spatial Plan for the Northern Port II (Port Polnocny II) in Gdańsk (2012).
- Regional Strategic Plan (2013).

Despite formal procedure additional public meetings with local residents and groups of interest and disclosure of information were undertaken. They included:

- Numerous press articles;
- Participation in 3rd Nationwide Maritime Law Conference: BALTIC SEA – EUROPE’S COMMON GOOD in February 2014.
- Information campaigns for local communities and children attending to the primary school at Gdansk Przerobka;
- Meeting with history and militaries enthusiasts. As a result of the meeting it has been decided, along with the history enthusiasts, to establish an educational trail located in a forest adjacent to DCT in order to conserve as many places of historical value as possible.

A5.4 Applicable International Environmental and Social Standards

Since the DCT Gdansk S.A. is seeking finance from the EBRD and NIB, the project is subject to the standards of international finance organisations. These standards, and how they apply to the Project and the assessment of impacts, are discussed in this section of the ESIA.

Guidance on international investment requirements is provided within the EBRD Environmental and Social Policy (EBRD, 2008). For the purposes of this description the EBRD process and its terminology has been referred to.

The main steps are:

- formal EIA report by EKO-KONSULT,
- producing a SEP;
- producing an ESIA (this document);
- development of an ESAP;

- public consultation on the ESIA Disclosure Package;
- management of grievances / objections;
- project monitoring.

For the purposes of this ESIA report, we have reviewed the impact assessment report conducted during the statutory EIA procedure.

A5.5 Project Alternatives

Project localisation was selected with consideration of the objective to obtain which is total yard capacity of the new and existing terminals of 4 million TEU. The analysis showed that the fulfillment of the project objective is possible only in the proposed location. Other layout variants were considered under proposed location and presented variant was deemend the most economically viable while minimising environmental and social (H&S) impacts related to construction and operation.

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A6 Scope of the Environmental and Social Impact Assessment

A6.1 Overview of Assessment Process

The 'scope' of the assessment refers to the geographical and technical boundaries relating to the issues that need to be addressed in the ESIA process.

The scoping process considered four levels of assessment and was managed as follows:

- Level I: Detailed Assessment - Undertaken for important environmental and social issues that are directly associated with the Project, or issues relating to associated development which have the potential to significantly risk the viability of the Project.
- Level II: Indicative Assessment - Undertaken for important environmental and social issues directly associated with the project but where these are considered to be of lower significance than those identified for Level I assessments, or undertaken in relation to potentially significant issues associated with infrastructure development. Indicative assessments will also be undertaken where there is no information and / or data available to undertake detailed assessments.
- Level III: Cursory Assessment - Undertaken on issues which are directly associated with the project but have a low risk of impact, or potentially important environmental and social issues to which commonly used mitigation and management measures are applied, or undertaken for associated developments that are not expected to have significant environmental and/or socio-economic issues.
- Level IV: Screened Out Activities - Activities which are not associated with the Project site and also have a low risk of impact.

A6.2 Environmental and Socio-Economic Issues Identified

The following issues were identified for inclusion in the ESIA:

- Level I Assessments:
  - Plant Design and the Application of BAT.
  - Onshore Ecology and Nature Conservation Effect.
  - Noise Impact.
  - Surface Water and Effluent.
  - Marine and Coastal Ecology.
  - Dredging Material Management.
- Level II Assessments:
  - Air Quality.
  - Traffic and Transport.
  - Socio-Economic Effects.
  - Abnormal Operations and Accidents.
  - Archaeology and Cultural Heritage.
  - Waste Generation.
  - Landscape and Visual Impact.
  - Cumulative Impact Assessment.
  - Soil and Minerals.
  - Climate.
- Level III Assessments:
  - Management Assessment.
  - Greenhouse Gas Emissions Assessment.
  - Land and Groundwater Quality.
  - Safety Aspects.
  - Electromagnetic Radiation

AI Appendices

AI.I Appendix: Site Location Plan

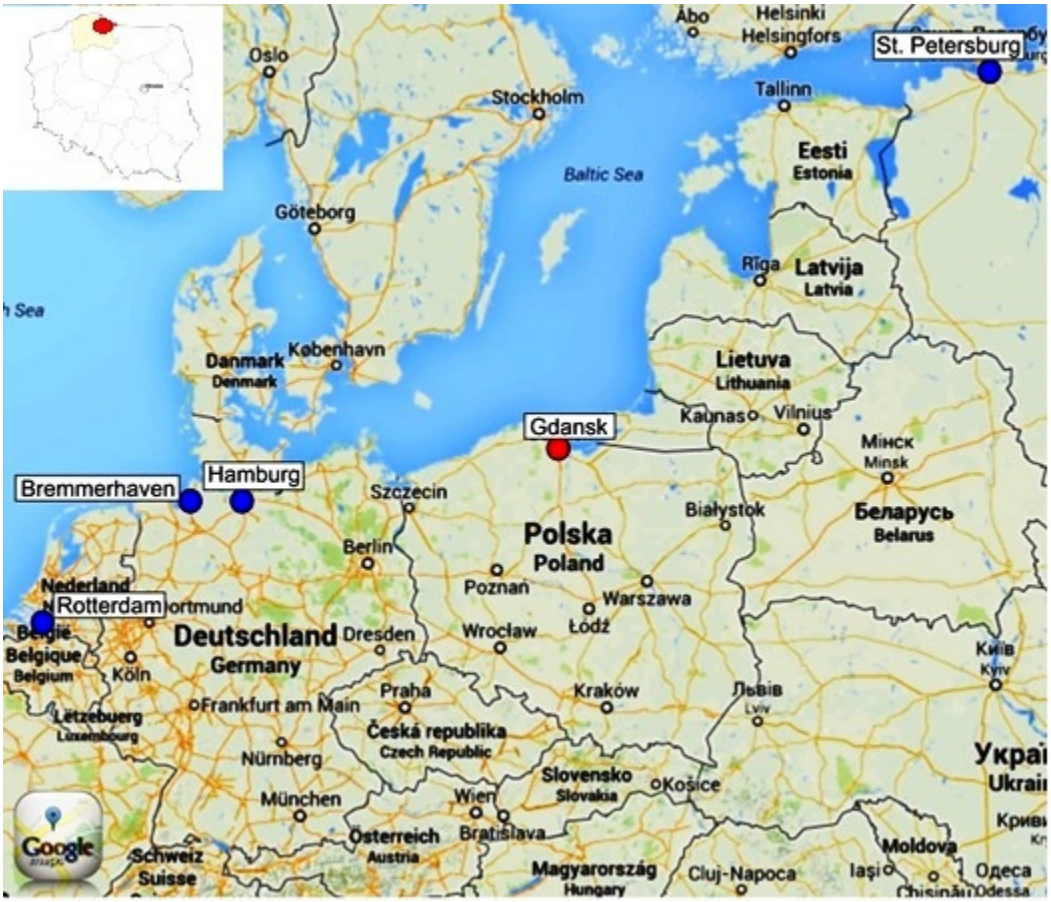


Figure A6-1 Location of Gdansk in Europe [source: gmaps]

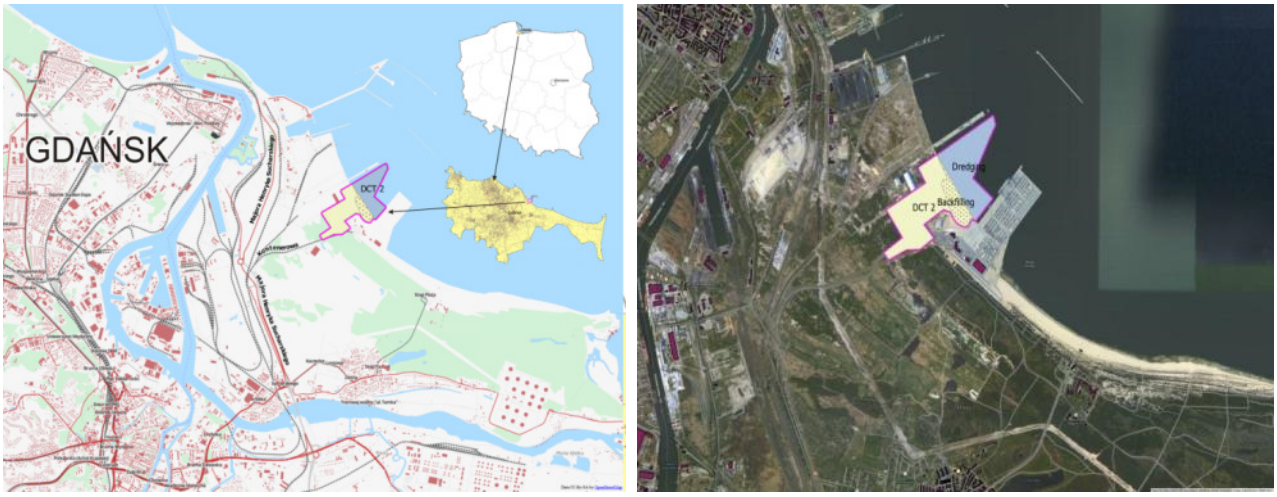


Figure A6-2 Location of DCT in Gdansk [source: gmaps]

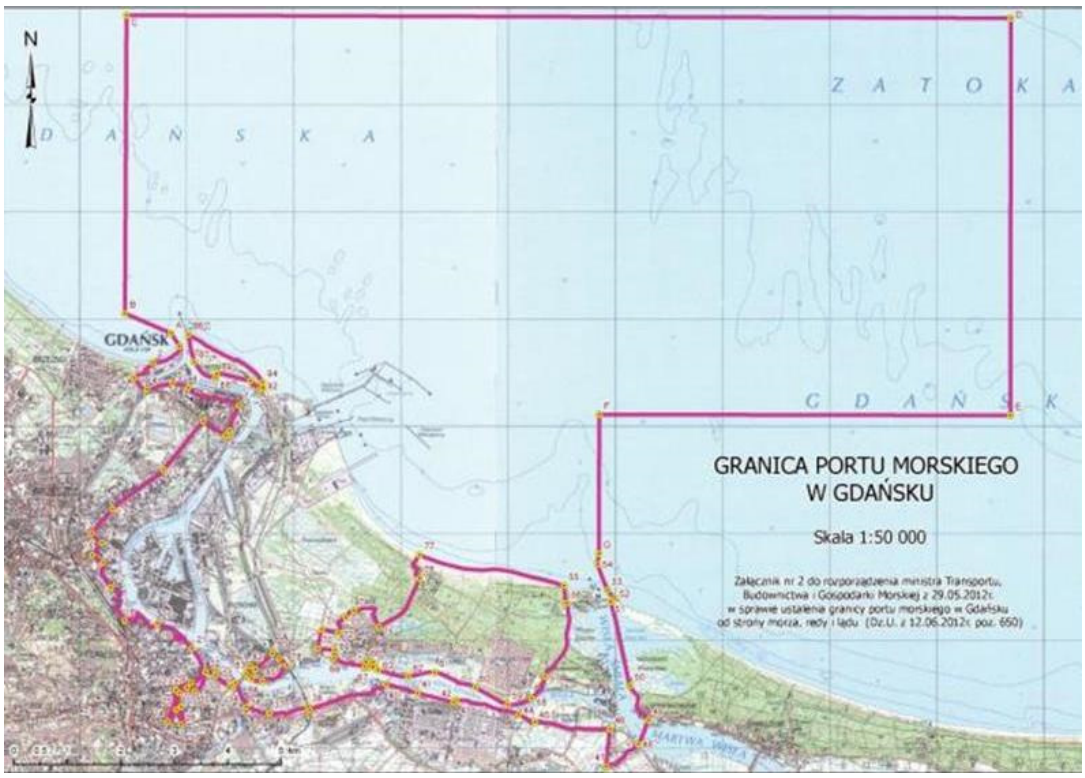


Figure A6-3 Map of Appendix 2 to the Regulation of the Minister of Transport, Construction and Maritime Economy of 29 May 2012 on the establishment of the border seaport of Gdansk from the sea, roadstead and land (Journal of Law .2012.650) [source: www.umgdy. gov.pl]

AI.II Appendix: Regional Context

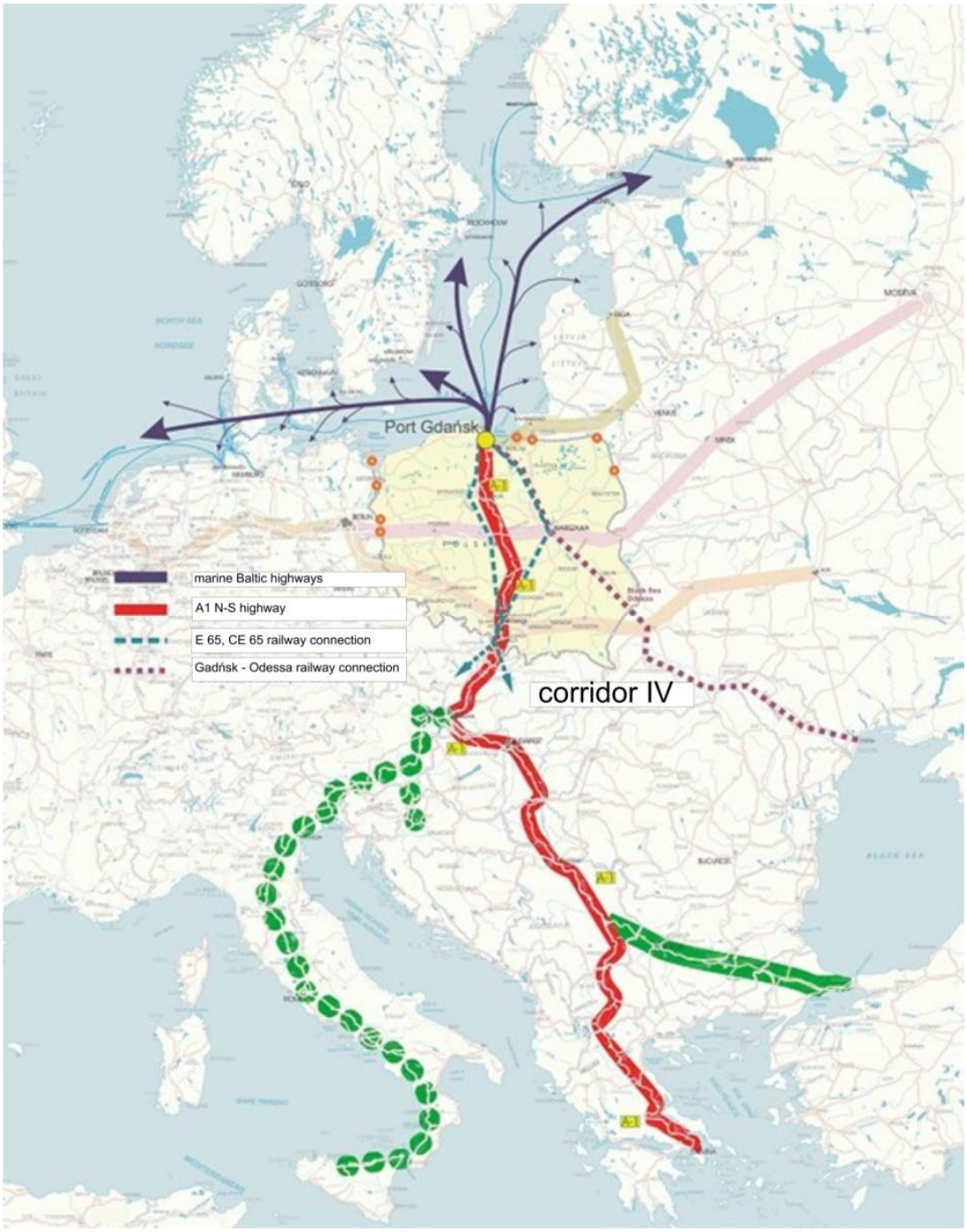


Figure A6-4 Transportation corridors and the role of Gdansk Port (www.portgdansk.pl)

AI.III Appendix: DCT2 Layout



Figure A6-5 Planned investments within Port Polnocny (source: EIA)

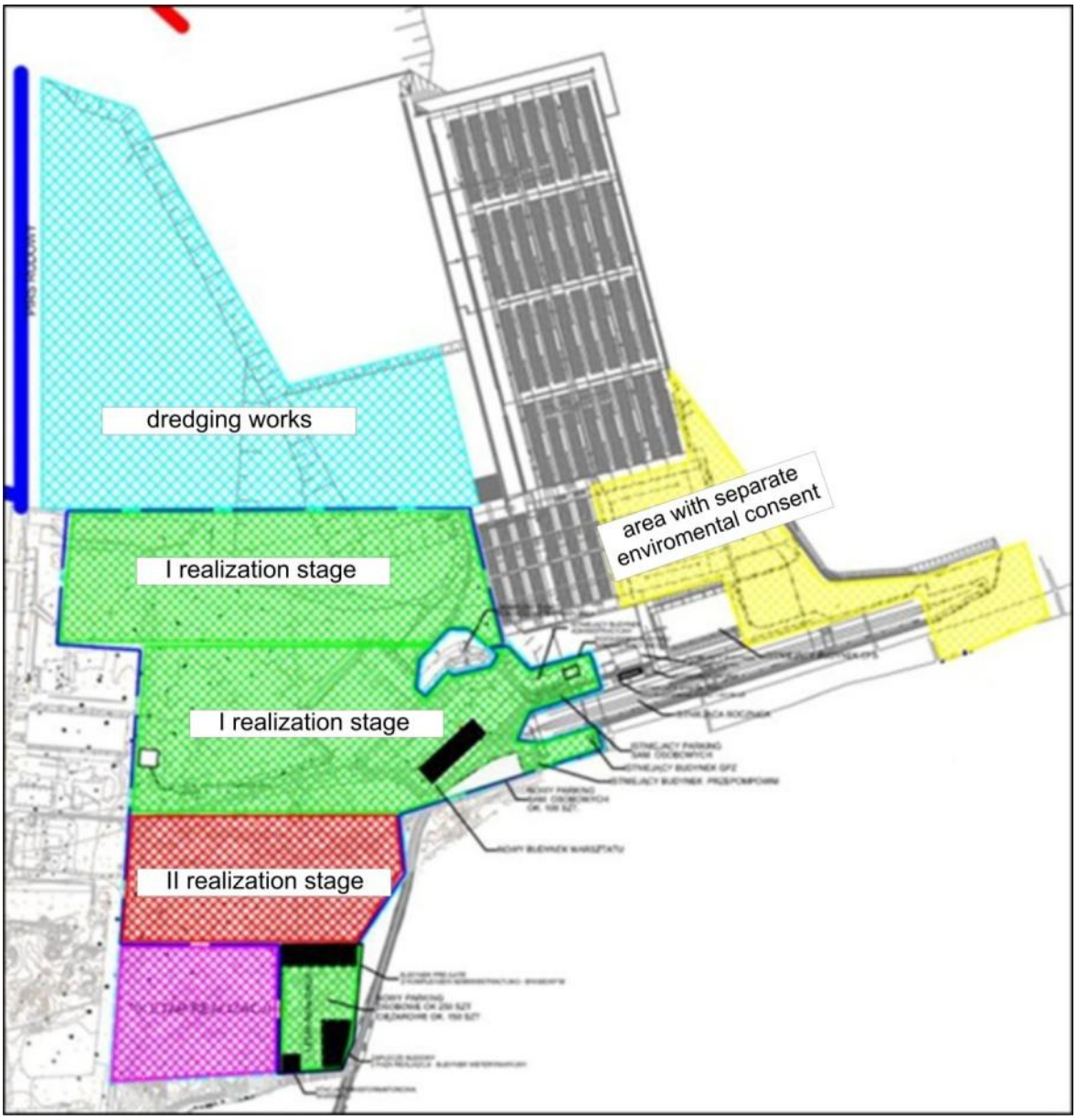


Figure A6-6 Project area and project stages (source: EIA 2013)

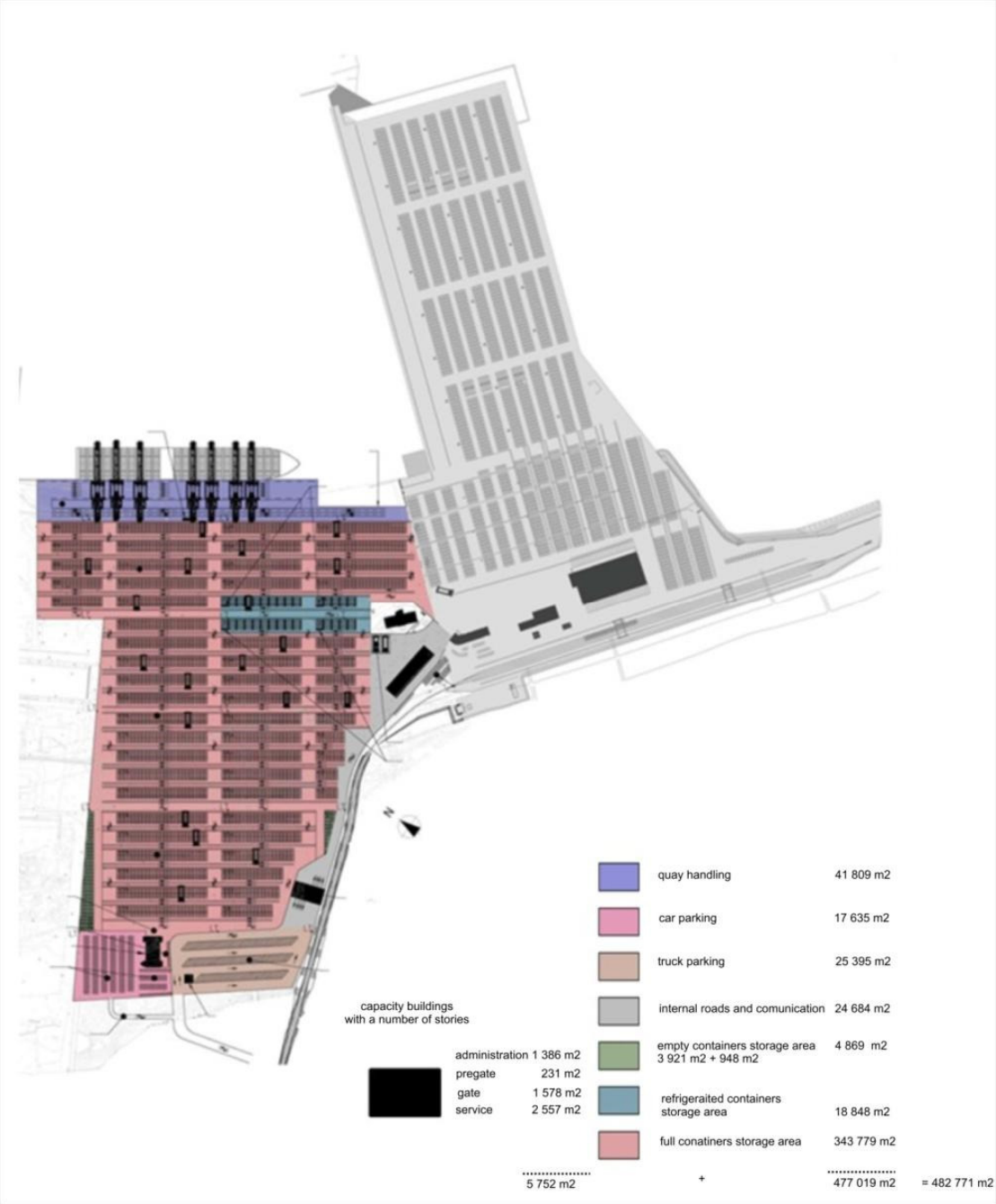


Figure A6-7 Planned development of DCT 2 (source: EIA 2013)

AI.IV Compliance Matrix

Compliance Matrix for Directive 2011/92/EU of the European Parliament and of the Council of 13 December 2011 on the assessment of the effects of certain public and private projects on the environment is presented in the table below.

Article	Criteria	Compliance Status	Recommendations
Art. 2 (1)	Projects likely to have significant effects on the environment by virtue, inter alia, of their nature, size or location are made subject to a requirement for development consent and an assessment with regard to their effects	Compliant. The EIA report was prepared and environmental consent decision has been obtained.	
Art. 3	The environmental impact assessment shall identify, describe and assess in an appropriate manner, in the light of each individual case and in accordance with Articles 4 to 12, the direct and indirect effects of a project on the following factors:		
	(a) human beings, fauna and flora;	Compliant.	
	(b) soil, water, air, climate and the landscape;	Compliant.	
	(c) material assets and the cultural heritage;	Compliant.	
	(d) the interaction between the factors referred to in points (a), (b) and (c).	Compliant.	
Art. 4 (1)	Projects listed in Annex I shall be made subject to an assessment	Compliant.	
Art. 4 (2)	Projects listed in Annex II shall be made subject to an assessment if it was stated through examination or thresholds or criteria set by the Member State	Not applicable.	
Art. 5 (1)	Provision by the developer of the information specified in Annex IV such as:		
	a description of the project,	Compliant. Shortcomings identified in the EIA report have been addressed in ESIA.	
	a description of the likely significant effects of the proposed project on the environment,	Compliant. Some shortcomings such as lack of impact analyses on mineral resources, climate, marine biology (phytoplankton,	According to the Environmental and Social Action Plan (ESAP) quality of sediment will be analysed before

Article	Criteria	Compliance Status	Recommendations
		etc.), ichtiofauna identified in the EIA report have been addressed in ESIA. Quality of sediment to be stored at the sea bed has not been analysed. EIA report refers to socio-economic issues however presents some shortcoming with regard to stakeholders identification. Stakeholders have been identified during ESIA and Stakeholders Engagement Plan (SEP) development.	disposal.
	the description by the developer of the forecasting methods used to assess the effects on the environment,	Compliant. The methods have been described.	
	a description of the measures envisaged to prevent, reduce and where possible offset any significant adverse effects on the environment,	Compliant.	
	a non-technical summary,	Compliant.	
	an indication of any difficulties (technical deficiencies or lack of know-how) encountered by the developer in compiling the required information.	Compliant. The chapter on difficulties has been included in EIA report (it states that no difficulties have been identified).	
Art. 5 (2)	If the developer so requests before submitting an application for development consent, the competent authority shall give an opinion on the information to be supplied by the developer	The scope was not defined; however it was not obligatory due to classification of the project as I group (EIA report required).	No action necessary.
Art. 5 (3)	The information to be provided by the developer shall include at least:		
	- a description of the project comprising information on the site, design and size of the project,	Compliant.	
	- a description of the measures envisaged in order to avoid, reduce and, if possible, remedy significant adverse effects,	Compliant. Some shortcomings identified in the EIA report (e.g. the lack of electromagnetic radiation impact assessment) have been addressed in ESIA.	
	- the data required to identify and assess the main effects which the project is likely to have on the environment,	Compliant. Issues regarding mineral resources, marine biology (phytoplankton, etc.), ichtiofauna have been described in	According to the ESAP quality of sediment will be analysed before disposal.

Article	Criteria	Compliance Status	Recommendations
		the ESIA.	
	- an outline of the main alternatives studied by the developer and an indication of the main reasons for his choice, taking into account the environmental effects,	Compliant.	
	- a non-technical summary of the information mentioned in the previous indents.	Compliant.	
Art. 6 (2)	The public shall be informed as soon as information can reasonably be provided, of		
	(a) the request for development consent;	Compliant.	
	(b) the fact that the project is subject to an environmental impact assessment procedure and, where relevant, the fact that Article 7 applies;	Compliant.	
	(c) details of the competent authorities responsible for taking the decision, those from which relevant information can be obtained, those to which comments or questions can be submitted, and details of the time schedule for transmitting comments or questions;	Compliant.	
	(d) the nature of possible decisions or, where there is one, the draft decision;	Compliant.	
	(e) an indication of the availability of the information gathered pursuant to Article 5;	Compliant.	
	(f) an indication of the times and places at which, and the means by which, the relevant information will be made available;	Compliant.	
	(g) details of the arrangements for public participation made pursuant to paragraph 5 of this Article.	Compliant.	
Art. 6 (3)	Provision the public concerned (within reasonable time-frames) of the following information:		
	- the main EIA reports	Compliant.	
	- other reports and advice issued to the authorities at the time	Compliant.	

Article	Criteria	Compliance Status	Recommendations
	when the public concerned is informed		
	- other information relevant for the decision, which only becomes available after the time the public concerned was informed	Compliant.	
Art. 6 (4)	The public concerned shall be given early and effective opportunities to participate in the environmental decision-making procedures.	Compliant.	
Art. 6 (4)	The public concerned should be entitled to express comments and opinions when all options are open to the competent authority or authorities before the decision on the request for development consent is taken.	Compliant.	
Art. 7	The Project which has a transboundary impact should be a subject of transboundary impact assessment	The scope of the planned project and the scale of identified environmental impact enables concluding that it will not cause transboundary environmental impacts.	
Art. 8	The results of consultations and the information gathered for EIA and submitted by publics and other relevant information shall be taken into consideration in the development consent procedure.	Compliant.	
Art. 9 (1)	1. When a decision to grant or refuse development consent has been taken, the competent authority or authorities shall inform the public thereof in accordance with the appropriate procedures and shall make available to the public the following information:	Environmental consent has been issued by competent authority.	
	(a) the content of the decision and any conditions attached thereto,	Compliant	
	(b) having examined the concerns and opinions expressed by the public concerned, the main reasons and considerations on which the decision is based, including information about the public participation process;	Compliant	
	(c) a description, where necessary, of the main measures to avoid, reduce and, if possible, offset the major adverse effects.	Compliant	

Compliance with Habitats and Birds Directives is presented in the table below.

Legislation / Regulation	Compliance Status	Recommendations
Habitats Directive 92/43/EEC, on the conservation of natural habitats and of wild fauna and flora	According to the requirement of Habitats Directive impacts on Natura 2000 must be discussed and assessed. Directive prohibits from location of investment if probable/expected impact is severe/significant with exception of situations described in art 6.4. Natura 2000 specific assessment has been completed. Lack of possible alternatives and overriding public interest has been presented	Post construction birds and bats monitoring will be carried out according to the environmental consent requirements and the ESAP. Results will be reviewed to implement proper mitigation measures if needed.
Birds Directive 2009/147/EC, on the conservation of wild birds	Impacts on birds listed in annex 1 and II are discussed and assessed Impact on birds being subject of Natura 2000 protection has been assessed and described. Mitigation measures have been discussed and compensation proposed.	Birds post-construction monitoring will be carried out according to environmental consent. This is included in the ESAP.

AI.V Compliance Matrix

This project is being reviewed against the requirements of the EBRD Environmental and Social Policy (2008) ("the EBRD Policy"). The following table reviews the performance of the DCT2 Project against the EBRD Policy.

EBRD PR 1: Environmental & Social Appraisal & Management		
Performance Requirement	**Compliance Status**	**Recommendation**
Environmental and social appraisal / assessment	**Compliant** The formal Environmental Impact Assessment has been produced according to Polish and European Regulations. EIA was subject of the formal procedure. Environmental consent was issued for the development. The scope of the Project covers also area of existing DCT1 terminal taking into account cumulative effects. Adaptive works outside DCT2 will include: dredging works, reconstruction of the fuel station, transformer building renovation, extension of existing railway siding, reconstruction of the existing access road (Kontenerowa Street). Shortcomings in the EIA report regarding electromagnetic radiation issue, impact on soil, natural resources, climate, impacts of dredging works and dredged material disposal were considered in the ESIA. Stakeholders have been identified.	According to the legal requirements the owner of the ship performing dredging works is obliged to obtain a permit to dispose dredging material within Gulf of Gdansk. This is however a separate proceeding which does not require formal EIA procedure. The application should include environmental impact statement. It is recommended to carry out sampling and laboratory analysis of dredged material prior to development of impact statement. Proceed according to the ESAP.
Area of Influence	**Compliant** The area of influence has been defined and assessed under ESIA.	
Environmental and Social Action Plan (ESAP)	**Compliant** ESAP has been prepared and is being implemented.	
Organisational capacity and commitment Performance monitoring and review	**Compliant** The Company has organisational capacity for the project. The organisational structure of the Company is established. The EHS roles and responsibilities are defined within the Company and incorporated within job descriptions, ensuring competency for all staff to the meet the current needs of the Project. Appropriate management procedures/systems will be implemented for DCT2 to comply with relevant regulations and Port Gdańsk Management systems.	

EBRD PR 2: Labour & Working Conditions		
Performance Requirement	**Compliance Status**	**Recommendation**
Human resources policies	**Compliant** The company is committed to compliance with the HR policies at national and international level. Main aspects related to employment, unemployment, working conditions and HR related aspects, which are considered important by the company have been identified and managed. They will also be applied to all sub-contractors when working for this project.	
Working relationships and conditions Grievance mechanism	**Compliant** The Company is committed to compliance with working relations and conditions provisions as defined by the Labour legislation. Grievance mechanism has been developed and is being implemented. Subcontractors will be a subject to the supervision in the scope of occupational safety, and according to Polish regulations.	
Child labour, forced labour, non-discrimination and equal opportunity	**Compliant** Polish Labour legislation strictly prohibits forced labour and child labour and promotes the principles of non-discrimination. Health and safety procedures will be applicable also for contractors. Internal audits will be ensured to demonstrate compliance with ILO conventions on child and forced labour, discrimination and freedom of association.	
H&S	During construction health and safety procedures developed by DCT 1 will be applicable to contractors. Main Contractor and Subcontractors will be a subject to the supervision by Clients Representative, and according to Polish regulations by relevant authorities in the scope of occupational health and safety. As the project area has potential for presence of unexploided ordinance, relevant procedure for any on and off shore works has been developed by DCT and will be compulsory to follow by contractors and sub-contractors under their contracts. Robust H&S system and number of procedures currentlyoperated by DCT1 for their operations will be adjusted and implemented at DCT2 at operational stage.	As per ESAP requiremnets main contractor will be obliged to develop and follow Construction Environemntal and Safety Managemnst Plan. In Addition Traffic management Plan will be developed.

EBRD PR 3 - Pollution Prevention & Abatement

Performance Requirement	Compliance Status	Recommendation
Pollution prevention, resource conservation and energy efficiency	**Partly compliant** The Project is promoting energy efficient mode of transport with regard to both maritime and railway transportation. No reference to compliance with $PM_{2,5}$ standards was found in the EIA report, however indirectly compliance with these standards is demonstrated via correlation of $PM_{2,5}$ to PM_{10}. On November 25, 2013 air protection programme has been implemented for Trust Tri-City Metropolitan Area (Aglomeracja Trójmiejska) , due to exceeding of PM 10 and benzo(a)pirene standards. The programme indicates requirements to the entities using environment in the scope of air protection, which include: meeting air emission standards, using best available techniques, minimizing dusting from the dumps. Such requirement will be met by the project.	
Wastes	**Compliant** Information on waste processing methods and waste prevention procedures were provided. Waste management plan for DCT2 will be developed in compliance with environmental regulations and *Plan of waste management in the Port of Gdansk.* Shortcomings of EIA report in relation to the quality of dredged material has been addressed under ESAP and will be subject to additional assessment prior to issue of dredging concent.	Sampling and laboratory analyses of dredged material should be performed. Proceed according to the ESAP.
Safe use and management of hazardous substances and materials Emergency preparedness and response	**Compliant** Damaged hazardous materials containers will be stored within area equipped with protection tray and underground tank of capacity 120 m^3 collecting effluents. Appropriate management/emergency plans for DCT2 will be implemented in line with current plans for DCT 1 to ensure compliance. The procedures will be developed in compliance with wider emergency response regulation within the Port of Gdansk.	
Greenhouse gas emissions	**Compliant** Project execution will change the structure of the land transport and increase efficiency of intermodal transport. According to the EIA report reduction of the traffic will result with decrease of greenhouse gases. The CO_2 emission reduction as a result of this project has been estimated in the ESIA. Information regarding CO_2 reduction as a result of Project realisation will be published on the Project webpage on the annual basis.	
Noise	**Compliant**	-

	The project will be developed in the Port of Gdansk. Within the radius of about 2 km of the site is surrounded by industrial facilities, without any facilities requiring noise protection. The environmental impact assessment report prepared by EKO-KONSULT and information provided on the website of the Port indicate that the allowable noise limits resulting from regular port operations were not exceeded in the course of the relevant measurements. Results of noise modelling from DCT2 operations and from related traffic within the immediate surroundings of the Project site demonstrate that the project will not result in exidance of noise standards. According to environmental consent decision, a post-investment noise monitoring to compare noise prediction from EIA report with factual impact during terminal operation must be carried out.	
Flood risk	**Compliant** The report on the environmental impact, concluded that the historic storm do not exceed 1.5 m and "after the construction of Container Terminal DCT 2 at 3.00 m elevation crown risk of flooding will be eliminated across all facilities such as storage areas, areas of communication, buildings etc". The analysis of the potential impact of future climate change on the project indicating that the maximum forecasting increase in water level resulting from climate warming and storm with a probability of 1% is 2,53 m It follows that in the project and in the report a sufficiently high foundation were provided. It can be concluded that the report takes into account potential climate change, with an expected warming and the possibility of storms, estimated based on historical data. Up-to-date flood analysis will be included into the design of the terminal. The project will be carried out on a flood risk area. In accordance with the spatial development plan it is "necessary to obtain a decision of the competent authority specified in the Water Law." It is important that the competent authority issuing the decision specifies: "the conditions necessary for the protection of water quality, (...) in case of a flood" (Water Law Art. 40.3.).	Obtaining a permit for location of the investment in flooded area is issued during a separate proceeding by local water management authority. The permit needs to be obtained prior to construction, in the typical sequence, in the process leading to issuing the development consent, which is Construction Permit. Proceed according to the ESAP.

EBRD PR 4: Community Health, Safety & Security		
Performance Requirement	**Compliance Status**	**Recommendation**
Community, infrastructure and	**Compliant**	As per ESAP requiremnets main contractor will be obliged to

equipment safety Security personnel requirement	Area of the terminal will not be publicly available. Access to the terminal will be restricted. Community health and safety issues were addressed in the EIA reportin depth applicable at this stage of project planning. . Potemntial traffic nuisance at a construction stage has been adreesed by ESIA. Construction works should be managed in accordance to developed and implemented construction project health and safety plan establishing minimum acceptable health and safety requirements for a construction project. Proper signing of hazard area is recommended both at the construction and operation stage. Appropriate safety procedures for construction and operation stages will be developed and implemented. According to environmental consent decision, a post-investment noise monitoring to compare noise prediction from EIA report with factual impact during terminal operation must be carried out.	develop and follow Construction Environemntal and Safety Managemnst Plan. In Addition Traffic management Plan will be developed to minimise any short term risks to local community..
Hazardous materials safety Emergency preparedness and response	**Compliant** According to the EIA report an the project will have an insignificant impact on the number of ships calling to the Port area, therefore the risk of emergency situation related to ship collisions was found negligent.. appropriate procedures regarding emergency situation in line with Port Managemnet Plan will be implemented. Current DCT1 procedures regarding management of hazardous cargo and potentially damaged containers will be implemented within DCT2.	
Community exposure to disease	**Not applicable**	

EBRD PR 5 - Involuntary Resettlement & Displacement		
Performance Requirement	**Compliance Status**	**Recommendation**
Resettlement and economic displacement	**Not applicable**	

EBRD PR 6 - Biodiversity Conservation & Sustainable Natural Resource Management		
Performance Requirement	**Compliance Status**	**Recommendation**
Appraisal of issues and impacts	**Compliant.** Surveys and inventories of natural areas and waters of the planned project was carried out on an annual basis, summer 2012 – summer 2013.	

	An assessment of the Natura 2000 site has been developed in accordance with the law and the guidelines of the EU Commission (Assessment of plans and projects significantly impacting on Natura 2000 sites). Marine and coastal ecology issues, influence of dredging works as well as impact on fishes have been addressed in the ESIA.	
Habitat protection and conservation Birds protection	**Compliant.** Project execution will result in destruction of breeding habitats of birds, including species under protection in Natura 2000 site PLB220005 "Zatoka Pucka": Little Tern, Common Ringed Plover. There will also appear potentiall impact on the breeding habitat of Common Merganser and Common Shelduck. These impacts might have significant and negative character on birds population protected by the Natura 2000 "Zatoka Pucka" unless sufficient compensation measures are applied. The described above impact will not affect species considered to be a priority. Accordingly to the impact, compensatory measures, involving the fulfillment of the following actions in relation to the lost habitat were proposed: • strengthening – improving the remaining habitat in proportion to the losses as a result of the project, • Create – create a new habitat on new area or enlarging the existing one. The planned investment will not negative impacting on natural habitats and the habitats of protected species on Site of Community Importance, situated around PLH220030 "Twierdza Wisloujscie" and PLH220044 "Ostoja w Ujsciu Wisly". The planned investment during both the construction and the operation phase will not have a significant impact on the populations of mammals (excluded bats), reptiles, amphibians and invertebrates. Planned construction and occupation of the land will destroy bunkers which is a wintering site of three species of bats: Natterer's bat, Daubenton's bat and Brown long-eared bat. The mitigation measures were defined – involving restoration of alternative winter shelter. The investment will not adversely impact on the reproductive habitat of bats, important feeding areas and migration corridors of these mammals. Small areas of valuable natural habitats listed in the Habitats Directive Annex will be destroyed: Annual vegetation of drift lines (code 1210) and Embryonic shifting dunes (2110) and Fixed coastal dunes with herbaceous vegetation ('grey dunes') (code 2130 - priority habitat). They are, however occur, outside of the above Natura 2000 areas that protect these habitats. They are also not the subject of protection in the adjacent area of the Natura 2000 PLB220005 "Zatoka Pucka." Wintering sites for bats currently using a former military shelter (to be demolished) and breeding site to compensate the loss of birds breeding area due to the Project realisation will be developed in accordance with the environmental consent.	

Monitoring	**Compliant** Post construction birds and bats monitoring will be carried out according to the environmental consent requirements and the ESAP. Results will be reviewed to implement proper mitigation measures if needed. Noise post-implementation analysis will be performed according to the environmental consent after commissioning of the Project.	

EBRD PR 7 - Indigenous Peoples		
Performance Requirement	**Compliance Status**	**Recommendation**
	Not Applicable	

EBRD PR 8 - Cultural Heritage		
Performance Requirement	**Compliance Status**	**Recommendation**
Appraisal of Impacts on cultural heritage	**Partially compliant**. Within the area covered by the investment and in forest areas bordering to the Terminal there are concrete bunkers from the second half of the twentieth century and the remains of the German coastal batteries from the late XIX and early XX century are located According to the findings of the local development plan – "North Port II" some of the objects shall be protected until the realization of investments in accordance with the provisions of the plan. Some of them will be demolished during the construction phase. In addition, the North Port area is located within the historical approach to the port of Gdansk, which existence is dated back to at least the ninth century, and potentially can be a place of archaeological finds. Several times in the past, during dredging works shipwrecks were destroyed. No program of archaeological works during the construction period has been presented however the archaeological supervision has been recommended in the EIA report and EIA decision, especially for the dredging activities. DCT obtained a permit to carry out search-and-rescue archaeological research within the on-shore Project area. According to the permit works must be documented and any found artifacts will be forwarded to the Central Maritime Museum in Gdansk. DCT plans to perform archaeological survey of the Baltic bottom with the use of seismoacoustic probe to the depth of 10 m below the bottom surface. It is	Full compliance will be achieved following the completion of surveys for hidden or abandoned archaeological sites, wrecks and artifacts in the Project area.

	necessary to obtain a permit to search for hidden or abandoned archaeological sites, wrecks and artifacts in the Project area. Archaeological supervisory over construction period and during dredging works will be provided according to the environmental consent.	

EBRD PR 9 - Financial Intermediaries		
Performance Requirement	**Compliance Status**	**Recommendation**
	Not Applicable	

EBRD PR 10 - Information Disclosure & Stakeholder Engagement		
Performance Requirement	**Compliance Status**	**Recommendation**
Stakeholder identification and analysis	**Partially compliant**. Stakeholders have been identified and engaged at the stage of EIA preparation and permitting process as required by EIA Act. To meet EBRD and NIB requirements Stakeholders Engagement Plan and formal Grievance Mechanism have been developed and are being implemented.	
Stakeholder engagement plan (SEP) Public consultation	**Compliant** According to the received information several informal meetings with local community have been organized by DCT Gdansk S.A., however no records documenting the meetings have been made available. A preliminary analysis of the impact of investment on social groups around the company was carried out. There were also consultations conducted with certain groups of stakeholders, such as: • residents of the two nearest districts of Gdansk (Przerobki and Stogi) • Tricity and surrounding area residents who enjoy the Gdansk-Stogi beach and the surrounding forest, • passionate about history and military who purify and renew ruins of fortifications from the World War I and II, located around the DCT Non-Technical Summary and formal Stakeholder Engagement Plan, including Grievance Mechanism, were developed and published for the Project. There were no potential complaints or protests reported with regard to planned developments at any stage of the investment process. This refers also to NGOs. Contractors will be informed about EHS policy and applicable Performance	

	Requirements of EBRD. An official procedure regarding contractor's management will be prepared and implemented.	
Information disclosure	**Compliant**. The disclosure procedure took place mainly during the permitting process. No comments or complaints have been reported at that stage, except for Zarząd Portu Morskiego Gdańsk S.A. (Seaport Gdansk Management) that applied not to consider bunkers no. 615 and 616 as wintering place for bats as was indicated as compensation measures in the EIA report. Project information has been disclosed.	
Grievance mechanism	**Compliant** The company has a customer service department (at the Sales Department) and Complaint Department (at the Security Department). Employees have a clear grievance path – the company developed the Code of Ethics, open-door policy and anti-mobbing procedure. A formal Grievance Mechanism has be prepared, is being implemented and made publicly available.	

B Project Technical Description and Project Alternatives

B1 Introduction to the Section

This Section provides an overview of the technical design and operation of the proposed DCT2 Project together with an assessment of the how the design compares to international best available techniques. The Section also details the construction and decommissioning activities associated with the Project and presents an overview of the alternatives to the project design and location.

B2 Outline of the Project

B2.1 Port of Gdansk

The proposed DCT2 Project site is located in the north-western part of Stogi island, within the industrial area of Northern Port of Gdansk, adjacent to existing Deepwater Container Terminal 1 owned by the same operator: DCT GDANSK SA. It covers the anthropogenically transformed coast of the port and partially forested dune strip surrounded by the existing Sea Container Terminal DCT 1 (from the east), disused port areas (from the west) and inland maritime waters surrounded by the ore jetty the island breakwater and pier of DCT 1 (from the north).

DCT 2 will be functionally connected with DCT 1 while maintaining the autonomy and integrity of each other. The DCT 1 takes ca. 600 m of the coastal line and its surface reaches 51.8 ha, including 28.5 ha of port waters transformed into land.

Port of Gdansk is a major international transportation hub situated in the central part of the southern Baltic coast, which ranks among Europe's fastest growing regions. According to the strategy of European Union the Port of Gdansk plays a significant role as a key link in the Trans-European Transport Corridor No. 6 connecting the Nordic countries with Southern and Eastern Europe.

The Port of Gdansk is comprised of two principal sections with naturally diverse operational parameters: the inner port stretched along the Dead Vistula and the port canal, and the outer port affording direct access to the Gulf of Gdansk.

The inner port offers a comprehensive range of terminals and facilities designed to handling containerised cargo, passenger ferries and Ro-Ro vessels, passenger cars and citrus fruit, sulphur, phosphorites and other bulk. The other quays fitted with versatile equipment and infrastructure are universal in use and enable the handling of conventional general as well as bulk cargo such as rolled steel products, oversize and heavy lifts, grain, artificial fertilizers, ore and coal.

The outer port performs its operations on piers, quays and cargo handling jetties situated immediately on the waters of the Gulf of Gdansk. This section of the port offers state-of-the-art facilities suited to handling energy raw materials such as liquid fuels, coal and liquefied gas. The outer port also accommodates modern Deepwater Container Terminal (source: http://www.portgdansk.pl).

The Port of Gdansk is particularly favoured with its hydrographic conditions: the outer part, protruding to sea, with its deepwater outer port, can accommodate the largest vessels navigating the Baltic Sea. This part is suited for servicing vessels along the piers ranging from 220 to 765 m in length and up to 15 m draft. The fairway is 17 m deep. The inner port spread along the Port Canal and the Vistula estuary and can accommodate vessels of up to 10.2 m draft and 225 m in length. Both parts of the port maintain separate anchor grounds and fairways.



Figure B2-1 Port facility (source: www.portgdansk.pl). Number 38: DCT

The Port of Gdansk Authority SA is a sole entity managing the port in Gdansk. The remit of the Port of Gdansk Authority SA includes:

- management of properties and port infrastructure,
- forecasting, planning and programming of port development,
- construction, development, maintenance and upgrading of port infrastructure,
- acquisition of properties for port development needs,
- rendering of services connected with the use of port infrastructure,
- assurance of access to port reception facilities for wastes from vessels with the purpose of their recycling or neutralization.

In effort to ensure safety and security of maritime transport, the Port has introduced regulations of the International Convention Safety of Life at Sea and the International Ship and Port Facility Security Code.

Curently DCT 1 can handle one container ship at a time and maximum 2 a week. After DCT 2 construction it will be able to load/reload 2 shipa at the same time

B2.2 Project Timetable

The planned construction of Terminal DCT 2 will be executed in two stages, each covering two phases. The scope of works including individual stages and phases is presented below:

- stage I, phase 1 (to be completed in years 2014-2016) – construction of a new quay with the length of 650 m enabling to service ships with the immersion not smaller than 15 m, including adjacent maneuvering and storage areas adapted to trans-shipment and service of

containers and Ro-Ro cargos with the area of approx. 20 ha; construction of all the laydown areas, roads and buildings, including the new quay – approx. 27 ha; extension of the infrastructure networks;

- stage I, phase 2 (to be completed in years 2015-2020) – construction of subsequent laydown areas, parking areas and internal roads; extension of the railway siding and construction of new technical and administrative buildings;
- stage II (to be completed in years 2018-2025) – construction of subsequent laydown areas, enclosed structures and extension of the railway siding.

B3 Description of the Project

B3.1 Technical Features of the Proposed DCT2

B3.1.1 Overview

The project includes the construction of a new system which constitutes a port infrastructure for cargo loading and unloading, connected to the mainland, located in the Port of Gdańsk.

The planned project "Construction of Container Terminal T2 with a throughput capacity of 2,500,000 TEU in the Northern Port (Port Północny) in Gdańsk" consists in the construction of a deep-water, marine container terminal with a throughput capacity of 2.5 million TEU and adaptation works in the area of Container Terminal DCT 1, including the following:

- dredging of a shallow part,
- redevelopment of the internal fuel station,
- redevelopment and extension of an administrative building,
- modification of the power supply system and redevelopment of the transformer station buildings,
- providing the CNG supply system for DCT1,
- installation of the lighting system,
- electrification of the railway siding RTG crane.

Container Terminal DCT 2 will have a loading berth located between the pier which is currently used by DCT 1 and the existing ore pier. No more than 0.08 km2 of sea water area will be transformed into the quay. In the area of adjacent port water – between the ore pier and the water region used recently by DCT 1 it is planned to perform dredging works in order to construct an approach water region for the designed quay of DCT 2.

B3.1.2 Basic operational parameters of the planned Container Terminal DCT2

Table B.1 Basic operational parameters of the planned Container Terminal DCT2

Project element
Technical parameters: length of a loading berth: 650 m maximum depth: 17.5 m area of the terminal: 47 ha with the throughput capacity of 2,500,000 TEU
Handling equipment: STS container cranes – 7 items (electrical drive) truck tractors (transport of containers between the laydown areas) – 55 items (diesel drive) lift trucks for full containers (diesel drive) – 17 items lift trucks for empty containers (diesel drive) – 12 items forklifts, stacker (diesel drive) – 15 items yard RTG cranes – 25 items (electrical drive)

hydraulic crane (diesel drive) – 7 items Railway loading: gantry crane (electrical drive) – 2 items
Enclosed structures: administrative building – 5-storey, with administrative/office/social functions for the terminal employees, cross-border control services, Customs and security, Pre-Gate building – 3-storey, performing administrative/office/social functions for truck drivers and terminal personnel, gate complex – canopy with 4 entrance lanes and 4 exit lanes, with the option for further development if necessary, control booths, also used as a border point for the terminal users, workshop building two transformer/switching station buildings – located in the western and southern part of the terminal, the Customs stationary scanner, Additionally, in the second phase of the project it is planned to move the veterinary services building (Border Veterinary Inspection Post) to the vicinity of the construction site facilities. Fire protection pumping station with a power generating unit.
Rainwater system The rainwater sewage system will handle rainwater/meltwater from all the impenetrable surfaces of the Terminal: quay, container laydown areas, parking areas, access roads and roofs of the enclosed structures. It has been estimated that the quantity of rainwater from all the impenetrable surface of the terminal amounts to approx. 6,000 l/s. Before being discharged to the receiving body (for port water) the rainwater will be pre-treated in order to reduce the suspensions and oil derivatives. Rainwater sewage system outlet: 6 to 10 outlets located in the quay or breakwater or other shore structures (specially constructed) which may be used for this purpose.
Power infrastructure Upon the completion of the new transformer/switching station in the area of DCT 2 the electricity will be supplied with the use of MV cables 15 kV to the quay cranes, ship supply points and transformer stations. From the transformer stations the 0.4 kV power supply lines will be routed to all the facilities and machinery of the Terminal. Estimated installed power: 55,676 kW.
Railway siding Development of the existing railway siding in order to adapt it to servicing of Terminal DCT 2 (stage I phase II and stage II)
Redevelopment of the existing road A project accompanying the construction of Terminal DCT 2 will be the redevelopment of the existing access road (Kontenerowa St.) over a section of about 600 m.

B3.1.3 Quay

The planned loading berth will have the following parameters:

- length 650 m
- top base elevation +3.00 m Kr
- permissible depth -17.5 m Kr
- soil surcharge 40 kN/m2.

B3.1.4 Laydown areas

DCT 2 will consist of the following types of laydown areas:

- laydown areas for full containers with the total capacity of approx. 32,900 20-ft containers,
- laydown areas for empty containers with the total capacity of approx. 996 20-ft containers,
- laydown areas for cooling containers with the capacity of approx. 840 cooling containers – 20-ft or 40-ft, power supply for the cooling containers from 4 transformer stations to be constructed,
- circulation areas designed for the load of 350 kN/axle.

B3.1.5 Parking areas

Under the project it is planned to provide the following parking areas:

- approx. 150 parking bays for trucks,
- approx. 350 parking bays for passenger cars,
- approx. 18 parking bays for service vehicles.

B3.1.6 Gross covered areas

Planned gross covered area of Container Terminal DCT 2 is presented in the table below.

Table B.2 Gross covered areas

Loading berths	41,809 m^2
Laydown areas for full containers	343,778 m^2
Laydown areas for cooling containers	18,848 m^2
Laydown areas for empty containers	4,868 m^2
Communication	24,648 m^2
Parking area for trucks	25,395 m^2
Parking area for passenger cars	17,635 m^2
Enclosed structures (gross covered area)	5,752 m^2
Total for Container Terminal DCT 2	**482,771 m^2**

B3.2 DCT2 Operations

B3.2.1 Normal Operations

Terminal DCT 2 will deliver services consisting in handling full, empty and cooling containers, and those containing the materials classified as hazardous, in the Lo-Lo (vertical loading method) and Ro-Ro (horizontal loading method) system.

The spatial solutions and equipment of the terminal will allow for: trans-shipment of containers, inter-operational storage of containers and their reforming, forwarding via land transportation means (railway, vehicles), technical servicing of mechanized equipment operating in the area of the terminal (including fuel supply), fulfilling administrative and social needs of the personnel employed in the terminal and fulfilling administrative demands of third-party companies related to the terminal operation.

It will be a two-way terminal. It means that containers delivered to the terminal by land will be trans-shipped and then dispatched by sea.

It is estimated that on a weekly basis the DCT (DCT 1+DCT 2) will be able to handle:

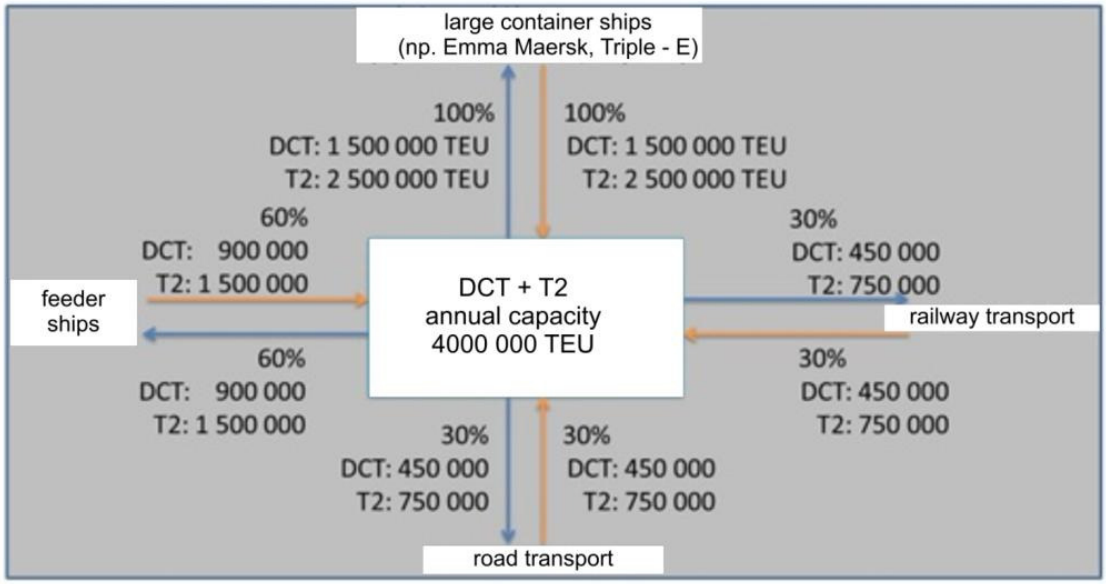
- 1 ship with the capacity of 18,000 TEU,
- 2 ships with the capacity of 12,000–13,000 TEU,
- 10 ships with the capacity of 5,000 TEU,
- 10 ships with the capacity of 3,000 TEU,
- 10 ships with the capacity of 1,000 TEU.

Terminal DCT 2 will be open 24 hours a day, 7 days a week, 365 days a year in the 4-shift system which requires employment of approx. 200 employees.

In the operation phase, Container Terminal DCT 2 will facilitate the functioning of the container trans-shipment system in the North Port of Gdańsk and will ensure effective use of the currently constructed transportation system of the city and the region.

B3.2.2 Cargo transportation structure

It has been assumed that maximum transport capacity will not exceed the values indicated in the following figure.



T2 = DCT2

Figure B3-1 Maximum percentage of the individual transportation means in the transport of goods trans-shipped at DCT 1 + DCT 2; values in TEU per annum (source: EIA 2013)

B3.2.3 Maintenance

While using the terminal it will be necessary to ensure its proper operation, in particular its maintenance and repair of the machinery, equipment and transportation means, overhauls and maintenance operations of storage facilities and infrastructure, as well as suitable servicing in the scope of water supply and sewage management and waste management.

Maintenance activities will be performed by trained staff according to directions of the equipment manufacturers and suppliers.

All wastes generated during the maintenance operations (mainly solid wastes, oils, and water contaminated by oil or chemicals) will be utilised and / or disposed of general procedures and legal requirements.

B4 Infrastructure

B4.1 Overview of Support Infrastructure

B4.1.1 Current status

The area of the planned Container Terminal DCT 2 is located on the currently unused port land.

Utility supply and networks will be routed with the use of the existing infrastructure of the Management of the Maritime Port of Gdańsk. A proper infrastructure for the utility networks (power supply system together with the area lighting, sewage system, water supply system, telecom system and gas supply system) will be provided. The rainwater sewage system will be equipped with treatment equipment and rainwater sewage outlets will be directed to the port water.

The enclosed structures will be supplied with heat by using the electricity or gas supply equipment – with proper capacity adapted to the size of the structures.

B4.1.2 Planned development

As part of the planned project of constructing Container Terminal DCT 2 the area will be properly prepared in order to enable to erect the planned facilities and machinery, including several functional units:

- loading berths,
- laydown areas for full containers,
- laydown areas for cooling containers,
- laydown areas for empty containers,
- circulation routes,
- parking area for trucks,
- parking area for passenger cars,
- enclosed structures,
- utility networks, line infrastructure,
- trans-shipment machinery, i.e. jib cranes, cranes, tractors, etc.

Under the project the following ancillary investments will be executed:

- extension of the railway siding by adding two additional tracks.
- redevelopment of the existing access road (Kontenerowa St.) over a section of about 600 m.

B4.2 Associated Plant & Buildings

In addition to the main plant, the following associated plant and buildings will be required:

- administrative building for the terminal employees, cross-border control services, Customs and security,
- Pre-Gate building for truck drivers and terminal personnel,
- workshop building,
- gate complex,

- transformer station building (transformer/switching station),
- the Customs stationary scanner,
- washing stand and fuel station (including AdBlue and CNG) – modernization of the vehicle servicing facilities located in the area of Container Terminal DCT 2 in order to adapt them to servicing both parts of the terminal (DCT 1 + DCT 2); as a result of the modernization it will be possible to refuel vehicles not only with diesel oil, but also AdBlue and CNG. It is not excluded that a separate CNG filling station will not be built in the vicinity of the existing fuel station.

Under the project it is also planned to extend the existing three-storey administrative building.

B5 Construction

B5.1 Construction phases

As is often the case with ESIAs of large scale development projects, the details of the main equipment enclosures and laydown areas, methods of construction (e.g. the balance of on-site and off-site fabrication) and the precise building programme cannot yet be established. Construction works, electrical equipment etc. will be carried out by specialist companies. The construction of the DCT2 unit will involve several teams that will work in parallel on construction, assembly and installations. The key components of the DCT2 unit will be manufactured off-site and delivered to site by rail or car.

The construction of DCT 2 will not influence the method of managing and using the adjacent areas.

The construction process will include:

- preparation works consisting of:
  - land surveying,
  - port basin water dredging works,
  - removal of vegetation, including trees and shrubs,
  - stripping of topsoil at its native location and its storage for subsequent landscaping,
  - site camp development and organisation,
  - removal of military relics and other facilities scheduled for demolition;
- beach regeneration and grading,
- underground infrastructure works, e.g. drainage facilities, foundation works,
- execution of a subsequent stage of works and site preparation for concreting (including piling),
- concreting of the surfaces which are the elements of the surface structure, including transportation, laying and compacting of the concrete mix,
- installation of auxiliary facilities, such as lighting, telecommunications, I&C, safety equipment,
- installation of Terminal equipment, e.g. overhead cranes,
- landscaping.

It is planned to prepare the facilities where the equipment and materials for civil works, and the generated waste will be stored temporarily.

Execution of the project will result in the periodic disruption of the hydrographic conditions and occurrence of the risk of polluting the soil and the water of drainage ditches and canals with the substances coming from the construction site.

The works related to the construction of Terminal DCT 2 will be conducted pursuant to the obtained administrative decisions and approvals (it also applies to contractors) and in compliance with the construction environmental management plan (CEMP) and operational environmental management plan (OEMP) developed at the later stage of the project. The employees will be trained and equipped with specialist equipment and devices. It will allow to minimize the risk of damage in the environment and in the scope of EH&S.

B5.2 Dredging works

The planned depth at the quay for Container Terminal DCT 2 will be 17.5 m. The area of the dredging works will amount to approx. 220,000 m2. Whereas, the volume of the spoil derived from the dredging will be approx. 2,000,000 m3. According to the initial findings 70% of the spoil volume (1,400,000 m3) will constitute silts requiring transportation via dump barges to a sea dump site specified by the Gdynia Maritime Office, while 30% will be sands (600,000 m3) suitable for shore resilting.

The results of tests on sediment purity in the vicinity of the operating Terminal and tests on core samples conducted within the scope of the planned modernization of the approach fairway to the North Port suggest that the spoil from the areas requiring dredging will be pollution free.

In accordance with the applicable regulations,2 the removal of the dredging spoil requires development of the environmental impact report and obtaining a permit3. A proper variant of the spoil storage will be selected depending on the lithology and purity of the sea bottom sediments – either on the sea dump site indicated by the Gdynia Maritime Office or for shore resilting in the area of the planned quay.

B5.3 Transport of Construction Materials and Equipment

The materials will be transported to the construction site with the use of the existing roads and railway leading to the existing terminal DCT 1.



Figure B5-1 Localisation of the planned Container Terminal DCT 2 against the background of the roads

During the construction process vehicular and railway traffic to the existing Terminal DCT 1 will be maintained on a continuous basis. However, there is a risk of periodic interruptions for the users of the facilities situated in the area of the project.

[2] Regulation of the Minister of Transport and Construction of 26 January 2006 on the procedure for issuing permits for dumping to the sea dredged spoil and dumping to sea waste and other substances (Journal of Laws No 22, item 166)
[3] The application for issuance of the permit for the removal of bottom dredging spoil to the sea is submitted by the owner of a ship loaded for Poland or with the Polish nationality to a competent director of the maritime office in the target area of which there is a site of disposing the spoil and dumping the sediments.

B5.4 Decommissioning

The operational life of a port terminal may be in excess of 40 years. During this time the terminal can be upgraded, meaning that it could operate indefinitely as long as it is economically viable to do so.

The decommissioning of a terminal comprises the dismantling of the existing structures and is similar to construction phase. Further, appropriate design and management measures will minimise the potential for ground and water contamination and thus the need for any post-operation ground decontamination would be minimised.

B6 Area of influence

B6.1 Operation of DCT1

Operation of DCT 1 was considered within EIA report, and all environmental and social analyses contained covered cumulative impacts of both facilities. Impact of DCT2 on DCT1 activities will be negligible as both facilities will be functioning integrally and all management procedures in the scope of traffic, safety etc. will consider operation of both terminals. DCT2 construction will result in the necessity of carrying out adaptation works, however they will be very minor and not connected with significant impacts or disturbance to DCT1 operation.

B6.2 Operation of the North Port

As a result of DCT 2 construction, increase in number of ships operating is expected. It is assumed that, operation of two vessels in DCT, instead of current one, will be possible in the same time (what means four instead of two vessels per week).

B6.3 Areas located close to associated infrastructure

Operation of DCT2, will cause traffic increase at the Kontenerowa Street and Sucharskiego Road. Kontenerowa street is located entirely in the industrial areas whereas Sucharskiego Road runs also through the Gdansk city. It is predicted in EIA report that it will be a 30% increase in the number of trucks during the day, and almost 100% increase in trucks at night.

In addition to car transport, also rail traffic increase in connection to DCT2 construction, is expected. Currently 5 trains come to DCT1 per day, and after construction of DCT2, approximately 13 trains per day in total may be assumed (as calculated on the basis of increase in capacity).

It was found in EIA report that the cumulative impact from the terminals and the road as well as increase of railway transport will not result in generation of any significant impacts and will not exceed the noise standards.

B6.4 Marine area

Construction of DCT2 is connected with the necessity of dredging the sea bottom and disposal of excavated material and the dump site. It will take place not only at the construction stage but also in future for maintenance purposes. It is assumed that impacts connected with these activities will be temporary. Other changes in the marine area are associated with the increase of vessels transport in the Gdansk bay, however as mentioned above, it will be negligible. Therefore potential impact on the marine transport or fisherman boats in the area will be not significant.

Outlined above project area of influence was assessed as part of ESIA, and some actions relevant to project area of influence are included in the ESAP, but in line with EBRD E&S Policy it does not need to be compliant with EBRD Performance Requirements.

B7 Project Alternatives

B7.1 No Project Alternative

The possible 'no project' alternative in this case would be an upgrade of other harbour structures within Gdansk Port Facility.

B7.2 Alternative Locations

Selection of the localisation of the project consisting in the construction of Terminal DCT 2 was preceded by a search of localisation variants which would correspond to the objectives and necessary technical requirements regarding the project.

The localisation was selected with consideration of the purpose to obtain the total throughput capacity of the both terminals amounting to 4 million TEU.

The analysis showed that the fulfillment of the project objective related to the throughput capacity is possible only in the adopted localisation variant.

Potential variants were subject to the environmental analysis as part of the EIA.

The analysis has led to the conclusion that the localisation of DCT 2 in the adopted variant:

- reflects the function of the area defined in the provisions of the local zoning plans (port/trans-shipment/storage functions) and development plans of the Management of Morski Port Gdańsk S.A.;
- provides for a functional connection with the existing terminal DCT 1;
- provides for the usage of a partially transformed, short section of the coastline as well as the undeveloped and damaged areas located between the base of the ore pier and the pier of Terminal DCT 1;
- entails interference with the coastline (partially transformed) in the area of the currently used port areas;
- results in the development of the basic trans-shipment, storage functions, etc.
- is marked by a relatively limited interference with the environment of the coastal sea water;
- is located in the North Port in the area of the water region which has already been deepened and adapted to handle ships with the immersion of 14-15 m;
- will improve the efficiency of the management and usage of the North Port water region and adjacent port areas;
- allows for energy-saving management of the port areas and effective usage of the existing port infrastructure,
- provides the opportunity of a functional connection with the North Port water tracks;
- provides the option of connecting the port with the road and railway system (transport services will be rendered on the land with the use of the existing Kontenerowa St. and the railway siding without the necessity of extension at the first stage of the project);
- enables to secure effectively the environment against the risk of emergency incidents;
- does not worsen the living standards of the Stogi district residents.

The construction of DCT 2 combined with the intensification of the trans-shipment and storage functions in DCT Gdańsk S.A. will exert impact on the environment. Accumulation of these functions in the areas to be developed for the port purposes and sea regions used by the port will limit the interference with the undeveloped areas performing biological (e.g. sea shore, dunes, coastal woods) and recreational (e.g. beaches) functions.

The project localisation taken into consideration meets the criteria of the rational land management in the port areas and minimization of interference with the barely developed city areas performing recreational functions as well as those which are socially significant for the residents of Stogi district.

B7.3 Conclusions

Project alternatives, including a “do nothing” option have been considered. The do nothing option was rejected, due to the compliance with regulation (EU) No 1315/2013 of the European Parliament and of the Council of 11 December 2013 on Union guidelines for the development of the trans-European transport network.

In accordance with the policy of the European Union Poland should work towards the de-congestion of land transport routes, while intensifying the ship transport. This effect may be achieved by execution of such projects as Container Terminal DCT 2 connecting, within the TEN-T network, the Baltic Sea basin with the motorways of the sea in the region of the Baltic Sea, North Sea and Mediterranean Sea.

Due to the existing industrial nature of the proposed site, expected yard capacity, existing infrastructure (including the gas connection and grid transmission) and environmental impacts considered location is the most feasible and suitable.

C The Existing Environment

C1 Introduction

The following sections provide a detailed overview of the physical, natural (i.e. ecology), historical and social (i.e. socio-economic baseline) environment for the proposed project site and its surroundings. The information presented is based on available information from local and governmental sources, publically available databases and survey work performed at the stage of EIA report preparation.

The project area is located on Port Island (also called Stogi Island). Port Island is located in the eastern side of Gdańsk, in the Vistula Spit mezoregion. It is surrounded by waters:

- from the north: Baltic Sea,
- from the east: Śmiała Wisła,
- from the west and south: Martwa Wisła.

Śmiała Wisła was created in 1840 as a result of an ice jam on Wisła, breaking the dunes. It was the moment the island was created — the area surrounded from three sides by the Baltic Sea and the Vistula river was cut off from land. Port Island is approx. 7.5 km wide latitudinally and approx. 3 km wide meridionally, with an approx. 5 km point of Westerplatte directed to the north. The island has an area of 26.4 km2. The area is at the same level as the existing dunes of the coastal belt. The north-western part of the island is covered by Town Forest (Las Miejski).

C2 The Physical Environment

C2.1 Geology, Hydrogeology and Seismology

C2.1.1 Geology

The area of the planned enterprise is characterised by geological structure, the creation of which was related to the development of the Vistula river delta. Various Pleistocene formations lie in the soil, mainly over Creataceous formations and locally over Tertiary formations, including drift clays of differing age and a series of interglacial Eemian marine sediments. Soils present in the base can be divided into the following layers

Geotechnical:

- layer I — organic soils,
- layer II — sands,
- layer III — sand-gravel mixes and gravels,
- layer IV — morainal clays.

As commissioned by DCT S.A. on 19 June 2013 sampling and analysis of soil samples were conducted, in order to establish the condition of pollution, performed by SGS Eko-Projet Sp. z o.o. Based on laboratory tests of soil samples taken from the drilled boreholes it was established the allowable concentrations of studied substances for C group4, that is industrial and transport areas, are met.

C2.1.2 Soils and minerals

The soil cover is an effect of previously conducted transformations of the area included in the analysis. In most parts of the terrain the soil cover occurs in an initial form, shaped on a sand bed created from the pouring the sands in the 1970s. This layer is very impoverished, without a

[4] Environment Minister's Resolution of 9 September 2002 on soil quality standards and earth quality standards (Journal of Laws No 165, item 1359).

formed soil profile. The soil which occurs here has no utility value. Typologically the soils are podzols or eolian regosols

The Northern Port area is a place where amber, a natural mineral is present. Amber deposits were documented in the vicinity of the port area. Historically, this area was and still is an area where illegal mining of amber is performed. Historically, amber was mined in the discussed area in the “Wisłoujście” deposit, with reserve of 178 Mg (worked out).

A concession was issued for the mining of “Przeróbka SL” deposit with a balance reserve of 17 Mg of amber. The deposit is located outside of the project area.



Figure C2-1 Location of amber deposit, for the mining of which concession was issued [*Source: http://www.trojmiasto.pl/wiadomosci/Pierwsza-legalna-odkrywkowa-kopalnia-bursztynu-powstanie-w-Gdansku-n77130.html#]*

C2.1.3 Bottom sediments

In relation to the planned pre-treatment and intake works the Management of the Martime Port Gdynia S.A. regularly orders the analysis of condition of bottom sediments remaining on the bottom of port basins.

Until the end of 2012 the measurements were conducted in accordance with the procedures in the Environment Minister's Resolution of 16 April 2002 regarding types and concentrations of substances indicating that dredging spoil is polluted (Journal of Laws of 2002 No 55, item 498) and in accordance with the Maintenance Regulation No 3 of the Gdynia Maritime Office Director of 18 July 1998 Port regulations (Journal of Laws Woj. Pom. No 78, item 474).

In 2013 the Waste Act was changed (Journal of Laws of 2013 item 21) and currently the analysis of bottom sediments remaining on the bottom of port basis is conducted based on the guidelines for the Helsinki Convention HELCOM Guidelines for the disposal of dredged material at sea adopted in June 2007

In the tested samples the concentrations of following pollutants are measured:

- metals: arsenic, chromium, zinc, cadmium, copper, nickel, lead, mercury
- polycyclic aromatic hydrocarbons (PAH): benz(a)anthracene, benzo(b)fluoranthene, benzo(k)fluoranthene, benzo(g,h,i)perylene, benzo(a)pyrene, dibenzo(a,h)anthracene, indeno(1,2,3-c,d)pyrene
- polychlorated biphenyls (PCB): total of congeners of PCB 28, 52, 101, 118, 138, 153 and 180

In accordance with the aforementioned recommendations for the Helsinki Convention the following dependencies between the volume of dredged material and the number of sampling points.

The volume of dredged material [m^3]	**Recommended number of sampling points**
< 20,000	3
25,000 – 100,000	4 – 6
100,000 – 500,000	7 – 15
500,000 – 2,000,000	16 – 30
>2,000,000	10 additional points for each next 1,000,000 m^3

List of conducted analyses:

- 2003 bottom sediment cleanliness measurement in a 50 m belt and up to a depth of 0.5 m in the area of all operated quays, a total of 77 scooped samples, the exceeding of allowable copper concentrations by 90%, lead by 43% and dibenzo(a)anthracene by 80% was established next to Nabrzeże Węgierskie and of benzo(a)pyrene by 20% next to Nabrzeże Stanów Zjednoczonych.
- 2005, bottom sediment cleanliness measurement in the area of Basin III and turning basin, 50 core samples were taken with an average depth of 3 m, the exceeding of PAH concentrations was established in 3 cores sampled next to Nabrzeże Duńskie.
- 2006, bottom sediment cleanliness measurement in the area of Basin IV and port channel, 28 core samples were taken with an average depth of 2.5 m. No allowable values were exceeded
- 2008 bottom sediment cleanliness measurement in a 50 m belt and up to a depth of 1 m in the area of all operated quays, a total of 77 scooped samples, the bottom sediments remaining in the port basin at Nabrzeże Węgierskie are contaminated by heavy metals and PAH. At the remaining quays no samples exceeded the allowable values. Bottom sediment cleanliness measurement — 15 surface samples of bottom sediments taken at the approach fairway, no samples exceeded the allowable values.

- 2011 bottom sediment cleanliness measurement in 6 samples taken in the area of Nabrzeże Polskie, at the mooring site of Maritim floating dock. No samples exceeded the allowable values.
- 2013 bottom sediment cleanliness measurement in a 50 m belt and up to a depth of 1.5 m in the area of all operated quays, a total of 74 scooped samples. The heavy metal and PAH concentrations were exceeded at Nabrzeże Węgierskie. At the remaining quays no values were exceeded

Monitoring of the dump-site area

Due to the fact that a significant amount of dredged material is dumped at sea, in a location specially established for this purpose by the Martime Office in Gdynia, called the dump-site, the Management of Maritime Port Gdynia S.A. will conduct its testing every 3 years.

In the year 2012 the tests included the Gdynia dump-site area and its vicinity.

The area of this dump-site takes an area of approx. 6.4 km^2

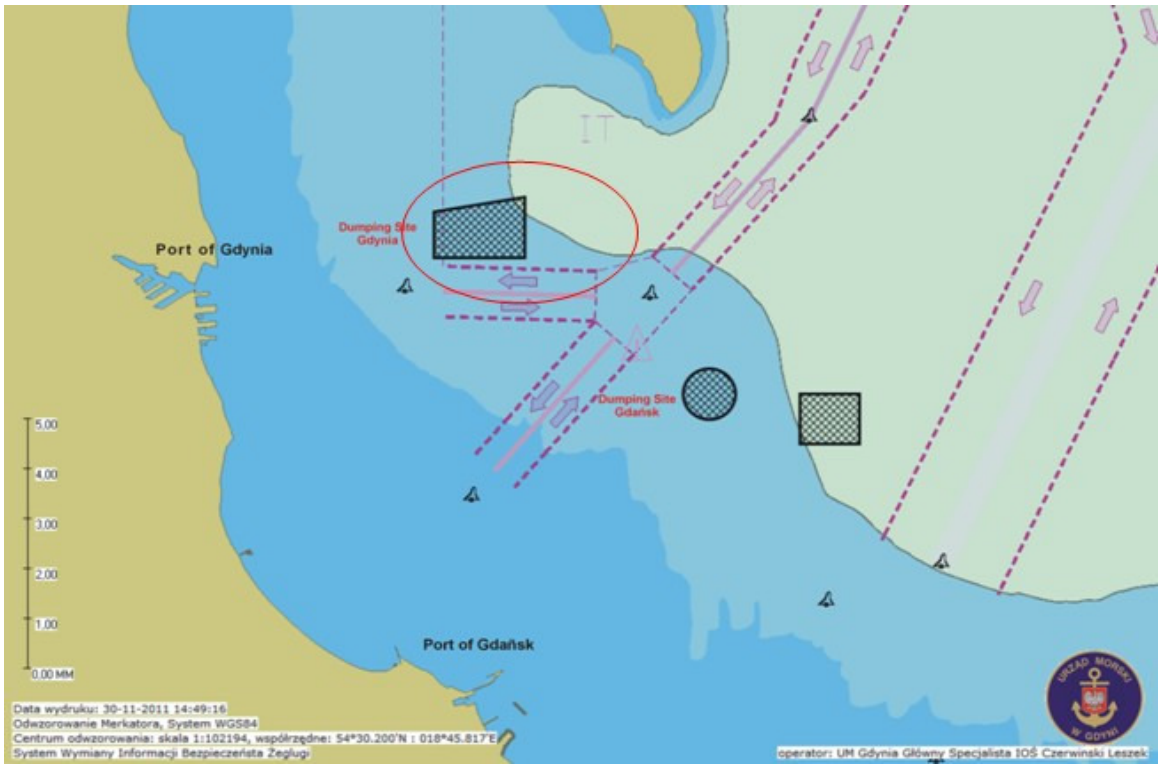


Figure C2-2 The location of Gdynia dump site in the Bay of Gdansk area

29 sediment samples were taken for the analysis from the dump-site area and 21 sediment samples from the points located in the area around the dump-site. Physical and chemical tests were conducted on these samples, as well as biological tests of macrozoobenthos. Sampling and analysis of the samples was financed from the ECODUMP project “Application of ecosystem principles for the location and management of offshore dumping sites in SE Baltic Region”, conducted as a part of the South Baltic Transborder Cooperation programme 2007-2013 (WTPB.02.01.00-72-016/10).

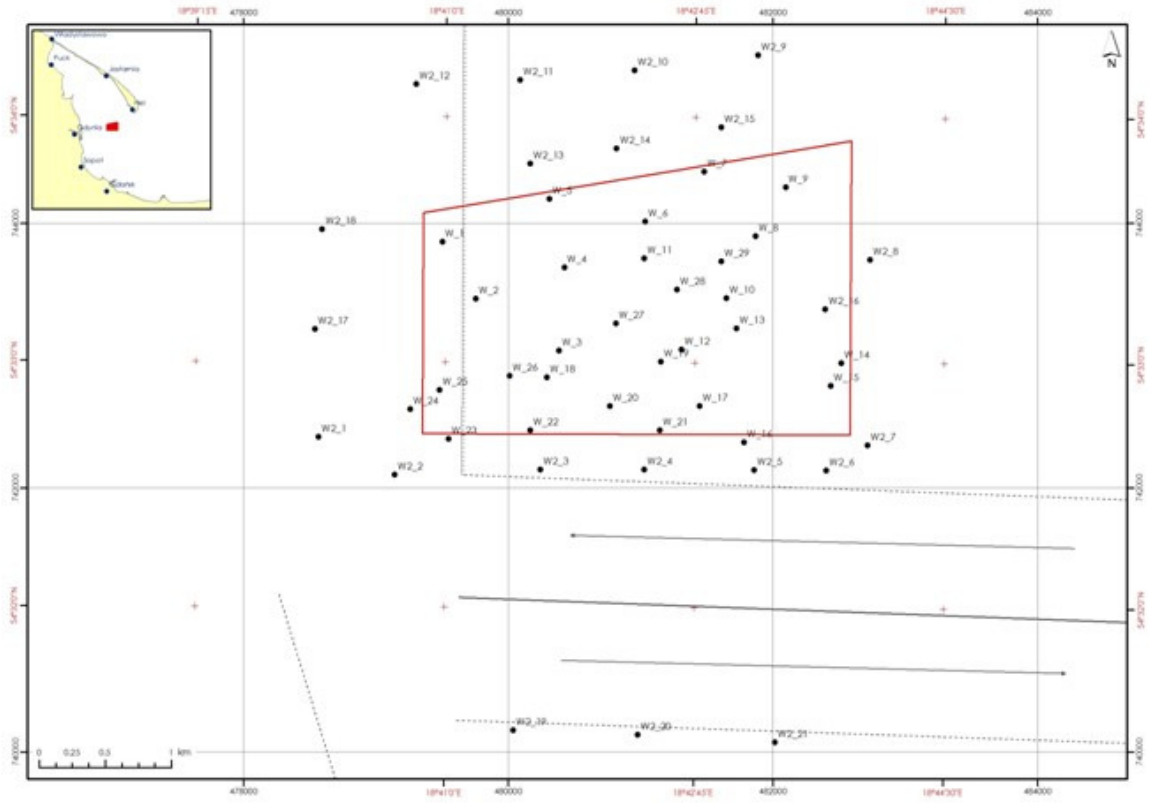


Figure C2-3 Location of biological sample and sediment sampling points from the Gdynia dump site area and area around it

As geophysical tests have shown, in the bottom relief of the studied Gdynia dump-site area clearly four basic sections were isolated: the area of the depositional-abrasive plain (at the depth of 30-35 m), extensive ridge in its area, traversing SW-NE, slope of the depositional-abrasive plain with an inclination of 100 (from approx. 30-35 m to approx. 40-50 m of depth) and a depositional plain.

Within the area of depositional-abrasive plain and the slope multiple irregularities were found, with local depressions even exceeding 1 m. They had a differing shape and size and were placed in an irregular manner, which speaks to their anthropogenic origin. In case of the ridge area it was established that it is very uneven, with multiple hills and perches and circular and elongated depression, of various size and shape, distributed in a chaotic manner. Due to the fact that no bathymetric measurements of the dump-site area were conducted before the conducted investments it is not possible to establish unequivocally how significantly the dumped ZMPG S.A. sediments (as a part of the discussed investment) have impacted the shape of the bottom in the studied area.

Comparing the obtained results of physical and chemical tests with the values from 2009 a small increase of As, Hg, PAH and PCB concentrations in the deposits after the dumping of the dredged material from the Port and approach fairway at the Gdynia dump-site was established. A significant difference in the horizontal distribution of Hg was also established. Generally the studied substances in the surface sediment layer were present at a low level, not exceeding the values typical for the studied area of the Bay of Gdańsk and the Bay of Puck. Analysing the concentration levels of metals, analytes from the PAH group and PCB cogeners included in the Appendix to the Environment Minister's Resolution of 16 April 2002 (Journal of Laws No 55, item 498) regarding types and concentrations of substances indicating that dredging spoil is polluted, in no tested samples of sediments sampled both at the dump-site area and around it the allowable values were exceeded. Thus the surface layer of the sediments from the studied area, may be assumed to be unpolluted under the quoted Resolution.

The macrozoobenthos studies have demonstrated that the average values of biomass, as well as the number and composition recorded for the Gdynia dump-site and in the area around the dump-site are typical for the areas of the external part of bay of Puck with similar depths (Kruk-Dowgiałło and Szaniawska 2008). Small differences within the studied area are not related to the

dump-site operation, but result from the macrozoobenthos groups and natural environment variability.

Based on the conducted studies and studies conducted in 2009 it can be established that the dumping of sediments from ZMPG S.A. (from the implemented project) at the Gdynia dump-site has not negatively impacted the bottom habitat in the dump-site area and on Natura 2000 areas — the Bay of Gdańsk and Hel Peninsula — PLH 220032.

C2.1.4 Hydrogeological conditions

The planned enterprise is located within the borders of hydrogeological compound 2 cCrl, within the area of GZWP no 111 Gdańsk Subbasin. Due to the deep deposition of water-bearing layer and good insulation from the terrain surface the reservoir does not have a protective area.

Two main water-bearing levels were found within the studied area: upper Cretaceous and Quaternary. The main utility area is the Cretaceous water-bearing layer, with a better water quality than the Quaternary layer (high contents of iron and chlorides). It is connected with sandy sediments, present at a depth of approximately 150 m b.g.l., and due to being covered with low permeability formations it is not at hazard of being polluted.

The first groundwater table is located at a depth of 0.2-0.5 m and is consistent with water level fluctuations. The stabilised groundwater level is present approximately at sea level.

In 2013 groundwater tests were performed at 8 points within the area of the planned terminal.

In reference to the criterion established in the Environment Minister's Resolution of 23 July 2008 on the criteria and method of assessment of the groundwater status (Journal of Laws 2008, No 143, item 896) it was established that the results of laboratory testing of water samples indicate concentrations of pollutions typical for a weak chemical condition within the scope of:

- pH reaction — in three points,
- antimony — in two points,
- benzo(a)pyrene — in one point (established only in one test),
- aluminum — in three points,

Good chemical condition of the waters (class I-III) was established in two points.

Based on laboratory analyses it was established, among other things, that:

- benzo(a)pyrene pollution was only an episodic, point pollution.
- increased values of antimony and aluminum in groundwater is not a result of sea water impact.
- low pH reaction in one point and increased concentrations of antimony and aluminum may be related to an industrial character of the area.

C2.1.5 Seismic activity

Poland is fundamentally located outside of the Earth's seismic areas. The aseismic character of Poland is provided by its geological structure, dominated by Paleozoic and Mesozoic sediment rocks with a thickness up to 15 kilometers. These rocks lie on a rigid base of Eastern-European platform and on a currently rather stable crystalline foundation included in the Paleozoic orogenic movements.

The planned project area is not located on a seismically active area.

C2.2 Climate and Meteorology

The area of the investment is located within the Bay of Gdańsk climate region, the characteristic features of which include:

- low annual, monthly and daily temperature amplitudes,
- low maximum and high minimum air temperatures,
- delay of thermal seasons,

- extending the transitional period between summer and winter,
- relatively low precipitation,
- lower temperatures during spring compared to autumn,
- strong winds, mainly from the west,
- presence of sea breeze.

The Gdańsk area is characterised by relatively low variation in air temperatures during the year. Average monthly temperature amplitude is approx. 21.5℃. Highest average monthly temperature is noted in July (17.9℃), and the lowest temperature — in February (-3.6 ℃).

In the Gdańsk area winds from west, south-west and south dominate. Winds from western, south-western and north-western directions amount to a total of 53% of all observations. The most rare are winds from northern and eastern directions.

Precipitation demonstrates significant spatial differentiation. The distribution of total of annual precipitation in Gdańsk is characterised by significant predominance of precipitation in the summer season (approx. 59% of the average annual total precipitation). The monthly distribution shows the highest precipitation in July and August, the lowest in December, January and February. The general total number of days with precipitation includes approximately 146, with low (1-5 mm/day) and very low (<1 mm/day) precipitation days dominating.

C2.3 Air Quality

The condition of air quality within the area of Gdańsk is monitored by:

- Voivodeship Environmental Protection Inspectorate,
- Agency of Regional Air Quality Monitoring in the Gdańsk Metropolitan Area (Agencja Regionalnego Monitoringu Atmosfery Aglomeracji Gdańskiej – ARMAAG).

The ARMAAG Foundation measurement station is located closest to the DCT location — AM2 in Gdańsk, at a distance of approx. 1.5 km to the south from the Terminal location.

Results of pollutant concentrations measurements in the year 2012 was listed in the table below.

Table C.1 Results of pollutant concentrations measurements in the year 2012

Substance name	Concentration yearly averages [g/m^3]		Maximum concentration daily averages [g/m^3]		Maximum concentration hourly [g/m^3]	
	measured	allowable	measured	allowable	measured	allowable
Nitrogen dioxide	13.9	40		not regulated	63.1	200
Sulphur dioxide	7.1	20	40.6	125	161.7	350
PM10 dust	14.8	40	88.3	50	356.4	**280**
Benzene	0.5	5			7.9	**30**
Xylenes	0.9	**10***			75.0	**100**
Toluene	0.2	**10**			11.5	**100**

***The value marked in green is a reference value**

The air quality testing results in the year 2012 indicate that:

- the allowable average annual concentrations of any analysed pollutants and short-term concentrations of sulphur dioxide and nitrogen dioxide (short-term concentration of PM10 dust is not regulated), as well as average daily concentrations of sulphur dioxide were not exceeded,

- PM10 dust average daily concentrations exceeding the standard were noted in 14 cases, the highest noted concentration amounted to 88.3 g/m^3 (allowable 50 g/m^3).

C2.4 Marine Water of the Bay of Gdańsk

The marine part of the planned project is located within the area of sub-basin 35 — Polish coastal waters of the Bay of Gdańsk.

Planned project is located within the area of uniform part of transitional waters — PLTWIVWB4 — the Inner Bay of Gdańsk. In the water management plan for the Vistula river basin (KZGW 2011) JCWP Inner Bay of Gdańsk the condition of waters is deemed bad, and it is assessed that there is a risk of not achieving the environmental goals. It is also deemed that these waters are subject to derogation pursuant to article 4(4)(iii) of the Framework Water Directive. The JCWP waters receive pollution from a significant land area and their condition depends directly on the condition of some inland waters and on reduction of inland pressure. Due to the natural conditions six years is an insufficient period, to enable the improvement of water condition, even assuming complete elimination of pressure.

The quality of the Bay of Gdańsk waters was described based on the study “Assessment of Polish Baltic Economical Zone maritime environment based on monitoring data from the year 2012 compared to the 2002-2011 decade” prepared by WIOŚ in Gdańsk (prepared by Environment Monitoring Library, Warsaw 2013). Studies of the Inner Bay of Gdańsk waters were conducted in 2010 in T16 measurement and control points for operational monitoring, and in 2011 in T18 point for diagnostic monitoring. Biological elements were assigned in 2010 to class V — bad condition, based on chlorophyll concentration results, in 2011 to class IV — weak condition, based on chlorophyll. The “benthic macro-invertebrates” indicator was assigned in 2011 to class II - good condition. Based on ichthyofauna studies conducted by an external contractor this element was assigned in 2011 to class II — good condition. Due to the lack of appropriate data the hydromorphological elements were assigned by an expert to class I. The physical and chemical elements were studied within a full scope for every year of the monitoring and the full result quota was used to prepare an ecological condition assessment. No indicator was excluded from the assessment. Physical and chemical elements were qualified below good level. General ecological condition was classified as bad in 2010 and weak in 2011. Physical and chemical from group 3.6 — especially harmful substances — specific synthetic and non-synthetic pollutants were established in accordance with the scope of diagnostic monitoring in 2011 and were assigned to class II — good condition. Finally the condition of uniform part of waters PLTW IV WB 4 Inner Bay of Gdańsk was established as bad.

The results of seasonal water quality assessment conducted in the balneary waters monitoring point at the Stogi balneary in 2011 for E. coli bacteria measurement have established excellent quality. In the aspect of intestinal enterococci the quality of water in one point was good, and in another point excellent. On the days of sampling no blue-green algal blooms or excessive macroalgal or maritime phytoplankton growth was established. No presence of tarry substances, glass, plastics, rubber or other waste on the surface of the water was also established.

Ice on open waters in front of Northern Port may occur only at the end of November or later, and disappear as late as in March. The average number of days with ice for this area over a many years period amounts to 19, minimum 0, maximum 76. The highest fast ice thicknesses on sheltered coastal areas, established by many years of observation in the area of Gdańsk and Gdynia amount to 0.5 m. The predominant type of ice is ice float. Coastal fast ice rarely reaches farther towards open sea, however moving fields of cracked or compact ice float may hinder shipping, or form a hazard for hydrotechnical structures.

C2.5 Inland Surface Water

An important element of the hydrographical system of Stogi Island is the Martwa Wisła water system. Martwa Wisła and Wisła Śmiała remain under the direct influence of the sea — the Bay of Gdańsk water state.

Marginal lake-type depressions, periodically filled with water are present within the area of the planned project. They result from the presence of pore waters and a shallow groundwater table, 0.2–0.5 m b.g.l. They locally show significant pollution

C2.6 Floods

In accordance with the local zoning plan provisions the area where the DCT 2 Maritime Container Terminal is located is an area with a high risk of floods and inundations from the rivers, sea and groundwater.

In addition to rainfall floods, two types of hazards related directly or indirectly to the impact of the sea may occur locally. They include:

- storm surges raising the Martwa Wisła waters;
- floods resulting from a storm surge.

Storm surges result directly from the changes of the sea level. The highest raising of waters from the sea since 1886 was recorded in 1914 in New Port — it was over 1.5 m compared to the average sea level (503 cm). Alarm conditions (570 cm) occur statistically every two years, every five years one may expect waters being raised by one meter, whereas once every hundred years the waters may be raised up to 1.5 meter above the average condition.

In accordance with the provisions of Flood Directive 2007/60/EC Poland was obligated to prepare for the areas of river basins and coastal areas connected with them:

1. initial flood risk assessment by December of 2011,
2. flood hazard and flood risk maps by December of 2013,
3. flood risk management plans by December of 2015

In accordance with the Initial Flood Risk Assessment (Wstępna Ocena Ryzyka Powodziowego – WORP) the area in question is located within the area of significant flood risk. In accordance with the available flood hazard maps published at the end of 2013 the DCT area is an area of special flood hazard, on which the probability of flood occurrence is average and amounts to 1%. In case of a 100-year flood this area may be flooded by water up to a height of 2 m.

For the studied project it was assumed that the designed level of the DCT2 Container Terminal will be located at an elevation of +3.00 m Kr. This ensures the area of the project is located 1 meter above the 100-year flood level. The risk of flooding will be minimised within all the facilities, such as: storage yards, transport areas, buildings etc.

In case of the studied location, after the DCT 2 Container Terminal is built at the elevation of +3.00 m Kr the risk of flooding will be eliminated within all the facilities, such as: storage yards, transport areas, buildings etc.

C2.7 Solid Waste

Within the area of the entire Northern Port in Gdańsk, including the area of DCT 1 and planned DCT 2, waste management is regulated by the port regulations.

Receiving waste from seagoing ships in Port Gdańsk is performed in accordance with 12 September 2002 Act on port reception facilities for ship-generated waste and cargo residues (Journal of Laws No 166 of 2002, item 1361) and the principles established in “Port ship-generated waste and cargo residue management plan”, approved by the decision of the Gdańsk Regional Environment Protection Director No RDOŚ-22-WSI.II/6620-29/10/PP of 23.08.2010

In accordance with the aforementioned plan the ship during its stay in the port is required to discharge into the port reception facilities all the waste and cargo residues, the discharging of which into the sea is not allowed within the Baltic Sea area. Procedure and method of receiving waste is required for all seagoing ships using the quays, located within the borders of Gdańsk maritime port, with the exception of Navy, Border Guard and Police vessels and ships on special national service.

The basic treatment method of communal waste collected within the City of Gdańsk is their storage in the Treatment Plant in Gdańsk-Szadółki. Communal waste from the area of City of Gdańsk and 6 adjacent communes is stored on the landfill located within the Plant.

C3 Ecology

The area of the planned enterprise is a part of the coastal zone, including a belt with a depth of approx. 800 m inland and the adjacent area of the Bay of Gdańsk sea area (port waters), between the ore pier and the existing DCT 1 Container Terminal.

Most of the area of the planned DCT 2 Container Terminal has average natural values. Only in small areas along the coast a few interesting plant communities and legally protected taxons were noted. These include patches of grey dune communities, represented by dwarf everlast and sheep's bit scabious. On small areas initial stages of coastal white dunes and annual vegetation of drift lines were identified.

Within a radius up to 10 km from the planned enterprise the following area nature protection forms are located, as understood by the Nature Protection Act of 16 April 2004:

- to the south and east:
  - PLB220005 "Zatoka Pucka", special bird conservation area — located directly at the borders of the investment and partially included within its scope,
- to the south-east:
  - approx. 4 km: PLH220044 "Ostoja w Ujściu Wisły", site of Community importance,
  - approx. 5.5 km, PLB220004 "Ujście Wisły", special bird conservation area,
  - approx. 5 km: Ptasi Raj reservation,
  - approx. 5 km: Sobieszewska Island Protected Landscape Area,
- to the south-west:
  - approx. 1.4 km to the north-west: PLH220030 "Twierdza Wisłoujście", site of Community importance.
- to the west:
  - approx. 8 km Tricity Landscape Park;
  - approx. 8 km Dolina Strzyży nature reserve
- to the north-west:
  - approx. 10 km "Bunkier w Oliwie", site of Community importance.

Within a distance of 3.5 to 10 km from the investment also small, individual nature protection forms are present, such as ecological sites and landscape-nature protected complexes.

Within the area of the planned project no natural monuments nor objects included by individual nature protection forms are present.

The "Zatoka Pucka" Natura 2000 Special Bird Protection Area (SBPA) is located directly next to the north-eastern border of the investment, partially located within its borders (scooping works within the bay waters, construction of the quay). It is the most important of the listed nature protection forms from the point of view of environmental impact. It covers an area of 62,430.4 ha, consisting mainly of the western part of the Bay of Gdańsk waters, between the coast of Hel Peninsula from the north, the coast from Władysławowo to Wisła Śmiała estuary from the west and south, and a line between the Wisła Śmiała estuary and the end of Hel from the east. Thus, the area includes both the Bay of Puck, with an area of 10,400 ha and shallow character (average depth of 3 m), as well as some of the deeper waters of the Bay of Gdańsk. The area includes also small areas of seaside meadows in the area of Osłonin and Rewa. Water (marine) habitats dominate, which consist of 99% of the total area of the refuge. The area is the most important place of wintering and stay during seasonal migrations of water birds within Polish coastal waters. In accordance wit the Standard Data Form the natural value and the importance of "Zatoka Pucka" PLB220005 SBPA are as follows: "Bird refuge with an european rank of E 12. At least 28 species of birds from Annex I to the Bird Directive and 11 species from the Polish Red Data Book (PRDB) are present. More than 1% of the nationwide population (C3) of Dunlin (Calidris alpina schinzii) (PRDB), Common Ringed Plover (PRDB) achieves numbers up to 1% of nationwide population; up until recently Ruff nested here. During the migration period at least 1% of the migration route population (C2 and C3) of the Great Crested Crebe, Hornet Crebe, Tufted Duck; relatively large concentrations (C7) of: Whooper Swan, Common Pochard, Wood Sandpiper, Curlew Sandpiper, Dunlin, Spotted Redshank, Ruddy Turnstone, Whimbrel, Eurasian Curlew, Eurasian Oystercatcher, Northern Lapwing, Black-Bellied Plover, Common Ringed

Plover and Bar-Tailed Godwit are present. During winter at least 1% of the migration route population (C2 and C3) of the following bird species: Smew, Tufted Duck, Common Goldeneye, Common Merganser, Greater Scaup, Great Crested Grebe are present; relatively large concentrations (C7) are achieved by Mute Swan; water and marsh birds significantly exceed concentrations of 20,000 specimens (C4).

The next area is the “Ostoja w Ujściu Wisły” site of Community importance.

PLH220044 located at a distance of 4 km to south-east. In accordance with SDF the refuge: “includes the estuaries of the largest Polish river, the Vistula. They are simultaneously one of the largest and most important estuaries in Poland. The occurrence of 7 types of habitats from Annex I to the Council Directive 92/43/EEC was established, which form a typical complex of coastal, sandy plant communities. Despite significant pressure from humans and significant transformation of this areas, some dune-related plant communities have kept well in this area.”

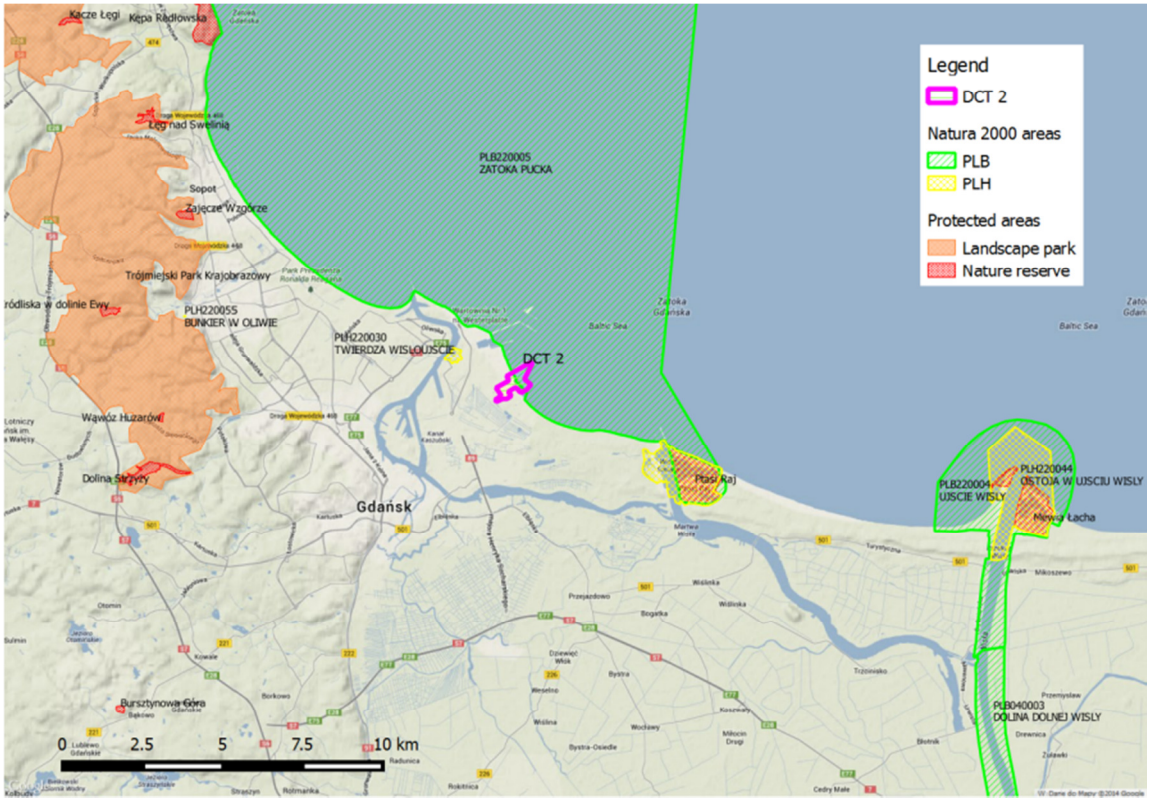


Figure C3-1 Existing forms of nature protection in the vicinity of the planned project

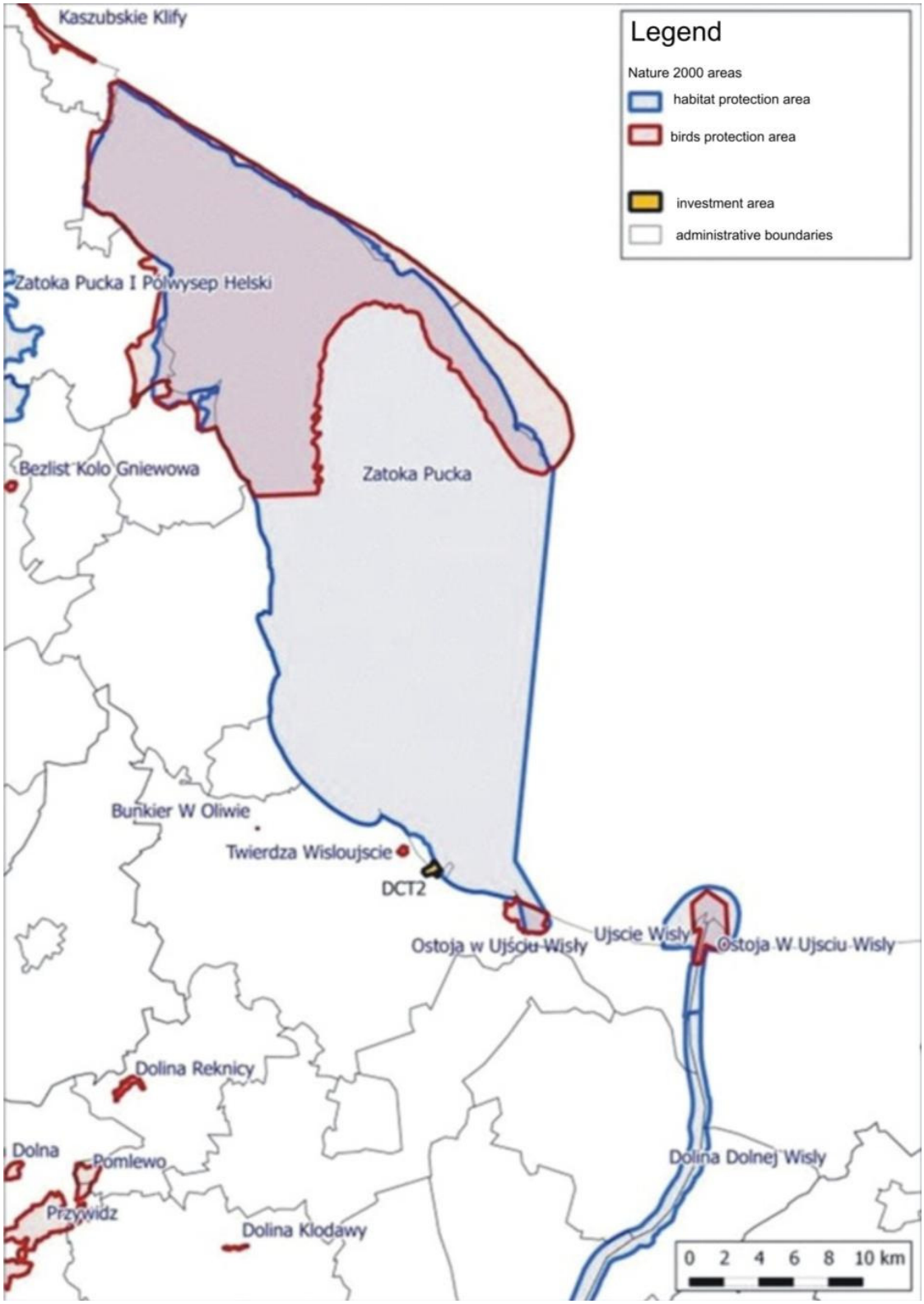


Figure C3-2 Location of the planned project area compared to Nature 2000 areas (source: EIA 2013)

In 2013 Eko-Konsult company has conducted a nature inventory of the project area. Despite many years of transformation of the natural environment the studied area remains the site of occurrence of valuable species of plants and animals, mainly birds and bats. The Northern Port in Gdańsk are is one of the primary aquatic bird concentration areas in non-nesting season in the

Bay of Gdańsk, whereas the concrete shelters (bunkers) present within the studied area contain winter shelters of bats (places of hibernation).

The predominant part of the investment area, that is approx. 24 ha consists of forest and scrub communities. Some of the area is occupied by unforested phytocoenoses, in particular in the northern and north-western part, from the side of the Bay shore and the existing Terminal, as well as along roads, railways and in thinned areas of forest and scrub communities. They mostly represent meadow and turf communities characterised by unstabilised species composition. Turf patches are relatively frequently encountered. Grey dune turf patches were also noted, that is, psammophilic turf with dwarf everlast and sheep's bit scabious. Small fragments covered by pioneer sea dune communities were also noted on the sea shore, and in depressions, patches of annual vegetation of drift lines.

In the central and western part of the planned investment zone small waterlogged areas were found.

The flora of the studied area was found to contain 16 special care taxons, including 14 tracheophytes and 2 bryophytes. 5 of them are strictly protected: sea aster, broad-leaved helleborine, dark red helleborine, sea holly, Swedish whitebeam and common sea-buckthorn. Moreover 6 species are partially protected. They include: sand sedge, alder buckthorn, dwarf everlast and common restharrow, as well as 2 species of bryophytes. Pleurozium schreberi and Pseudoscleropodium purum.

Among the established types of plant communities three represent natural habitats which are of interest to the European Community, as understood by the Minister of Environment Regulation of 13 April 2010 on the natural habitats and species of the habitat of species of Community interest, and criteria for selection of areas eligible for recognition or designation as Natura 2000 sites (Journal of Laws 2010 No 77 item 510). They include: annual vegetation of drift lines (code 1210), embryonic shifting white dunes (2110) and fixed coastal dunes with herbaceous vegetation (grey dunes) (2130).

In accordance with the environmental impact report by Eko-Konsult 63 species of lichen were found within the area of the investment, including 9 legally protected species (5 are strictly protected lichens, and 4 are partially protected lichens).

To summarise, the area of the planned construction of the terminal has average natural values. Its significant feature is the participation of nitrophilous and ruderal plants and disturbed species composition of comunities, resulting from anthropogenic transformations of habitats.

In the studied area a total of 15 mammal species were found (4, that is Talpa eutopaea mole, Eurasian pygmy shrew Sorex minutus, European beaver Castor fiberi, European otter Lutra lutra are legally protected pursuant to the Nature Protection Act of 16 April 2004, whereas 2 are species listed in Annex II to the Council Directive 92/43/EEC concerning the protection of natural habitats and wild fauna and flora). The number of mole and shrew tracks during catches were low, these species were not numerous within the area of the planned investment. Most of European beaver tracks were fresh and created in the current vegetative season (May of 2013), which indicates the spring migration of a single, probably young individual of the species. Based on the European otter tracks found and the biology of the species one may conjecture that the area of the planned investment is inhabited by a single individual, however the area of the investment includes only a fragment of its territory. The planned investment will have the highest impact on wild boar and roe-deer, however, since these are common game species, this impact will only have a local significance.

Within the studied area the occurrence of 11 species of bats was established. All represent the Vesper bats family. In the shelters within the area of the planned terminal five bat species were found wintering. They include: greater mouse-eared bat Myolis myotis, Natterer's bat Myotis nattereri, whiskered/Brandt's bat Myotis mystacinus/brandtii, Daubenton's bat Myotis daubentonii and brown long-eared bat Plecotus auritus. The result of autumn catches and direct observations indicate that the controlled facilities are a place of autumn swarming and mating of bats. The highest number of bats were caught at the entrance to the preserved part of the shelter of 613 Bay Battery (14 individuals), which are the highest wintering location of the discussed mammals within the area of the planned investment. During the bat pregnancy period the activity of these mammals within the area of the planned investment was extremely low, which suggests the lack of reproductive colony hideouts and important feeding grounds. All the species found within the area of the planned investment are strictly protected in Poland, they were also placed in Annex IV

to the Habitats Directive. Greater mouse-eared bat was placed in Annex II to the Habitats Directive.

In case of amphibian inventory the studies have included the entire period of the planned investment, where three small water reservoirs were located, forming the potential grounds for amphibian presence and breeding. Amphibians were found in all three tanks. Amphibians found within the area of the planned investment belonged only to 2 species — common water frog (Rana esculenta) and European common brown frog (Rana temporaria). The total number (mature specimens) of both species established in the breeding locations was established to be 90-120 specimens. The only reptile species, the occurrence of which was established within the analysed terrain, was the sand lizard (Lacerta agilis). This species was noted in the northern part of the area, in insolated parts of dunes, covered by grassy plant communities.

In case of invertebrates, the occurrence of xerothermic, stenothermal and psammophylic was established, typical for sandy (dune) areas, however the group is very small. The highest, dominating group of invertebrates are insects.

The Northern Port in Gdańsk is one of the primary aquatic bird concentration areas in non-nesting season in the Bay of Gdańsk region (Meissner et al. 1993, Michno et al. 1993). Port basin and the adjacent bodies of water showed duck concentrations in excess of 30 thousand birds (Meissner et al. 1994) and an overnight group of up to 30 thousand gulls (Tomiałojć and Stawarczyk 2003).

The nesting bird studies were conducted during two seasons, 2011 and 2012. Nesting birds of the project site included 36 species. Within the area of the planned investment 115 nesting pairs were found. The average density of nesting birds amounted to 2.9 pairs per 1 ha of the studied area. The nesting bird territories were not evenly spaced. The most frequently occurring species were the ones that are present frequently in the entire country: Willow Warbler Phylloscopus trochilus, Common Chaffinch Ftingilla coelobs, Eurasian Blackcap Sylvia atricapilla and European Robin Erithacus rubecula.

The level of 5% in the group was also exceeded by the Little Tern Sterunla albifrons, with a small colony present on the beach. 10 nests of Little Tern were found, as well as one of Common Ringed Plower Charadrius hiaticufa. Birds were also observed on the beach and the adjacent basin which were not nesting at the project site, but came there with their nestling. They were: Common Eider Somateria mollissima, Common Shelduck Tadorna tadorna, Common Mersanger Mergus merganser, Mute Swan Cygnus olor.

The species listed in Annex I to the Bird Directive (European Parliament and Council Directive 2009/147/EC of 30 November 2009 on wild bird protection) and with a SPEC 2 and SPEC 3 hazard category acc. to BirdLife International were deemed valuable species. Five sites were forest species sites (marsh tit, redstart and wood lark). Red-backed Shrike inhabits open areas covered with shrubs, and Northern Wheatear is an open terrain species. Within the area of the planned investment 10 breeding pairs of little tern were observed during the survey in 2012, and 14 pairs in 2011. Up to 35 breeding pairs were observed at the site in previous years. It is clearly the most valuable nesting species of all recorded during the survey. The project site is also regularly visited (confirmed in various years) by Common Merganser with the young. During the 2012 survey (Bloch-Orłowska et al., 2013) 1 female with chicks was observed at the project site. However, the nesting site could not be located. Similarly, the nesting sites of common shelduck could not be established. It may be deemed a potentially nesting species in the area or in its vicinity.

From September to April in the seasons from 2008/2009 to 2011/2012, 34 aquatic birds have been identified in the Northern Port and the adjacent basin. This species mix is typical of various parts of the Bay of Gdańsk, although the Northern Port shows large concentrations of Tufted Duck, Greater Scaup and Great Crested Grebe (Meissner et al. 2011). Shelter from waves is also the reason why species feeding on fish, such as Great Crested Grebe and Common Merganser, are found in the port basins. Breakwaters and jetties are used by gulls and cormorants as resting sites. The number of non-breeding aquatic birds in the Northern Port in summer (May-August) is smaller. 23 bird species were observed there. The most common ones are the European Herring Gull, Cormorant, Black-Headed Gull, Tufted Duck and Mute Swan. The Mallard and Common Merganser was also frequently observed here. This is probably linked to the breeding of this species in areas adjacent to the Northern Port, and the fact that it is not possible to tell breeding from non-breeding animals for this species.

To summarise, the investment area is adjacent to the PLB 220005 “Zatoka Pucka” Natura 2000 site, which is an E12 bird refuge. This area is the most important place of wintering and stay during seasonal migrations of water birds within Polish coastal waters. In accordance with the Standard Data Form at least 28 species of birds from Annex I to the Bird Directive and 11 species from the Polish Red Data Book (PRDB) are present here.

C4 Marine ecology

Aquatic birds

The Northern Port in Gdańsk is one of the primary aquatic bird concentration areas in non-nesting season in the Bay of Gdańsk region (Meissner et al. 1993, Michno et al. 1993). Port basin and the adjacent bodies of water showed duck concentrations in excess of 30 thousand birds (Meissner et al. 1994,) and an overnight group of up to 30 thousand gulls (Tomiałojć and Stawarczyk 2003). Nesting birds of the Northern Port have not been regularly researched thus far. Nesting bird counting in this area thus far primarily covered gull and tern nesting primarily in the ore jetty and breakwater island. The presence of nests of Charadriiformes and Anseriformes was also observed during that survey.

Nesting birds of the project site included 36 species, six of which were not fully confirmed by convincing nesting evidence.

Nesting bird groups in the Northern Port section under discussion are typical of areas marked by a similar nesting structure. The area is not characterised by out-of-ordinary number or density of breeding pairs.

Birds were also observed on the beach and the adjacent basin which were not nesting at the project site, but came there with their nestling. They included:

- Common Eider Somateria mollissima. Female with 4 and then 3 chicks (2012) This is the first successful hatch of this species in Poland.
- Common Merganser Mergus merganser. Female with 8 chicks. This species probably has its nests in the neighbouring forests, rather than on the premises of the port,
- Mute Swan Cygnus olor. A pair of birds with 5 chicks. This species is not nesting on the premises of the port.

In addition, presence of visiting birds was observed, which could not nest in the area covered by the observations, but used it as a feeding site.

From among aquatic and semi-aquatic species 10 breeding pairs of Little Tern were observed during the survey (2012), and 14 pairs in 2011. Up to 35 breeding pairs were observed at the site in previous years (which was almost the entire breeding population of the species within the boundaries of PLB 220005 “Zatoka Pucka”). It is clearly the most valuable nesting species of all recorded during the survey. Breeding sites of Common Ringed Plover were also observed in the vicinity.

The project site is also regularly visited (confirmed in various years) by Common Merganser with the young. During the 2012 survey (Bloch-Orłowska et al., 2013) 1 female with chicks was observed at the project site. Earlier observations indicate that as many as a dozen or so pairs of Common Merganser may breed at the project site (the Terminal and its surroundings), which appears high (Zięcik 2012). There is no conclusive evidence that the Common Shelduck has undertaken breeding at the site in question.

Non-breeding aquatic birds

The non-breeding season for aquatic birds is divided into two subseasons, differing in terms of the number of birds and position in the life cycle. The first subseason, from September to April, shows the greatest accumulation of aquatic birds in the Northern Port area (Meissner et al. 2011). The period covers a major part of the spring and autumn migration and the entire overwintering period. The number of aquatic birds in the waters in question is markedly lower in the remaining part of the year (May-August) (Meissner et al. 2011). Apart from breeding birds (discussed elsewhere in this document), also non-breeding birds are observed in the area in the period, stopping here towards the end of the spring migration and at the beginning of the autumn

migration, and birds which have finished breeding and gather before their journey to overwintering sites.

Migration and overwintering aquatic birds

From September to April, 34 aquatic birds have been identified in the Northern Port and the adjacent basin. The species mix is typical of various parts of the Bay of Gdańsk, although the Northern Port shows large concentrations of Tufted Duck, Greater Scaup and Great Crested Grebe (Meissner et al. 2011). Port basin provide shelter from the wind and waves, and therefore numerous diving ducks (Tufted Duck, Greater Scaup), which rest here during the day, and move to their feeding sites away from daily stay sites, are present in the Northern Port (Cramp and Simmons 1998). Shelter from waves is also the reason why species feeding on fish, such as Great Crested Greb and Common Merganser, are found in the port basins. Breakwaters and jetties are used by gulls and cormorants as resting sites.

The number of non-breeding aquatic birds in the Northern Port in summer (May-August) is smaller. 23 species from this ecological group were observed there. The most common ones are the European Herring Gull, Cormorant, Black-Headed Gull, Tufted Duck and Mute Swan. The Mallard has also consistently used this site, but in very small numbers. The Common Merganser was also frequently observed here. This is probably linked to the breeding of this species in areas adjacent to the Northern Port, and the fact that it is not possible to tell breeding from non-breeding animals for this species.

Considering the entire Northern Port area, the most valuable bird species are the Common Tern and the Little Tern. From 1 to 10 specimens of the Common Term were regularly observed on the beach in 2012. This species breeds in the Northern Port at the end of the ore jetty on five prepared breeding platforms (in 2011, a fox twice ravaged the colonies, as a result of which only 6 breeding pairs successfully reared their young).

Among species with a negative protection status in Europe (SPEC 2 and SPEC 3 categories), the Northern Port basins and the adjacent bodies of water represent an important non-breeding concentration site for the Tufted Duck. Other species are not as common here.

Aquatic mammals

There are only four aquatic mammal species in the Baltic Sea: three species of seals (grey seal Halichoerus grypus, ringed seal Phoca hispida and harbour seal Phoca vitulina) and one cetacean - the harbour porpoise (Phocoena phocoena). Aquatic mammals are threatened by extinction and are legally protected both in Poland and other Baltic countries (Journal of Laws No 220, item 2237, Agreement on the Conservation of Small Cetaceans of the Baltic, North East Atlantic, Irish and North Seas - ASCOBANS, IUCN Red List, the Bonn Convention, the Bern Convention).

Seals are sporadically observed along the Polish coast. Sightings of the grey seal are currently most frequently reported from the Bay of Gdańsk and the Bay of Puck. The Vistula river mouth is one of the few seal sites in Poland: grey seal Halichoerus grypus, and infrequently sighted harbour seal Phoca vitulina.

Regular seal observations are carried out in the Mewia Łacha Reserve in the Vistula river mouth near the project site. Over 500 living specimens of various species were observed from early 2012. Seals were observed almost every day in May and June (a dozen or so and up to 55 at a time in July). No seal observation was carried out for the Northern Port.

The distribution and number of the harbour porpoise population in Polish Maritime Areas has not been researched thus far (Kuklik 2006, Atlas.... 2009). The primary indicator of the presence of the harbour porpoise in our waters is the reported dead specimen in fish nets or washed ashore. No harbour porpoise specimens have been observed in the Northern Port thus far.

Zooplankton

Marine Copepoda and Cladocera species are typical constituents of the Bay of Gdańsk zooplankton. Growing biodiversity of the zooplankton composition in terms of species has been observed since 2007.

However, the Northern Port area is not too varied in terms of zooplankton.

Macrozooplankton in this area may also contain freshwater crustaceans and larvae of insects carried in the Vistula, which improve the feeding base for the fish.

Since the impact of the Vistula on the zooplankton species is significant, bottom invertebrates feeding on organic matter dominate here. No mussels and infrequent balanus is the result of unfavourable bottom conditions, namely no fixed bed. The macrofauna species show the dominance of contaminated bottom species.

Phytoplankton

The species in the vicinity of DCT 1 Terminal do not differ materially from those in the neighbouring areas. Certain peculiar characteristics are however the contribution of the Vistula river mouth, and biogenes and contamination it carries. Similarly to other basins near river mouths, this area also shows a large biological diversity resulting from the presence of both freshwater and marine species. It is particularly visible in the phytoplankton and macrozoobenthos structure.

The dominant taxons in this Bay of Gdańsk area include Flagellates, Cyanophyceae and Bacillariophyceae. Cyanophyceae, notably those causing toxic blossom, such as Aphanizomenon flos-aquae and Nodularia spumigena.

High productivity of this basin is demonstrated by the numbers and weight of phytoplankton (high chlorophyll concentrations recorded) in the spring in the period of intense eutrophication in the Bay of Gdańsk coastal zone, in the vicinity of the Vistula river mouth.

Research has shown increased levels of those markers also in the area of the project site. High degree of this area's eutrophication is also demonstrated by the presence of phytoplankton species which are markers for high water eutrophy, as well as quantitative dominance of cyanobacteria and dinoflagellate, recognised as potentially toxic. The presence of aggressive cyanobacteria and dinoflagellate species were identified in the course of research in the Sobieszewska Island area in 1994 and 1995 (Niemkiewicz and Wrzołek 1998), and in 1998 (Nowacki, 1998), however the largest weight and number was recorded near the Vistula river mouth.

Monitoring indicates that the spring blossom continues to be the most intensive – higher chlorophyll concentrations are recorded than in summer, however the total weight of phytoplankton in the Bay in summer is very large.

Macrophytes

Brown algae of the Pilayella and Ectocarpus order dominate the Bay of Gdańsk coastal zone in terms of weight (Kruk-Dowgiałło, 1998). The algae move freely with the current across the Bay in its major part. However, from May to August, they are observed in large quantities at the bottom as mat, and floating in the deep. They may also form a thick cover on the surface.

Large quantities of brown algae are washed ashore on the beach of the Bay of Gdańsk between Gdynia and Jelitkowo.

They are rarely found on the beaches of Sobieszewska Island and in the Northern Port area. This is probably caused by the fact that, despite a significant share of biogenes in water in this area, periodic salinity drops are recorded, combined with phytoplankton growth, which, during the blossom, runs out of its biogene input, thus reducing the development of macroalgae.

The analysis of biological material collected from cores by PRCiP in 2004 at the project site did not show the presence of dense sea bottom plant formations, both rooted seed plants and macroalgae attached to the bottom. This may result from anthropogenic changes in this area.

Macrozoobenthos

Taxonomic composition of macrozoobenthos in the planned project area is typical of shallow southern Baltic, with a similar sediment and bottom current layout (Osowiecki 1995, 1998). Specific trophic conditions in the area, shaped by continuous inflow of suspended and organic matter from Vistula Przekop are conducive to the growth of macrozoobenthos feeding on organic matter. The 2009 results did not depart far from the results obtained in the 1990s (Osowiecki 1995 and 1998). 12 taxons of 5 classes were identified. The largest number of taxons was shown by mussels (4 species) and polychaetes (3 species). The area in question can be classified as moderately polluted on the basis of the macrozoobenthos structure. Detritus-feeding snails of the Hydrobiidae family (28% of the total number) and polychaetes: Marenzelleria neglecta (17%) and Hediste diversicolor (14%), are the most common - these are opportunistic species, considered markers of the polluted bottom (Osowiecki et al. 2012). In terms of weight, the major species were Macoma balthica (56%) and Mya arenaria (15%), also considered markers of the polluted

bottom (Ibidem). No protected or rare species were identified in the analysed area. As part of the 2004 research relating to the development of DCT 2 Container Terminal, 11 macrozoobenthos species were identified. As compared with other Bay of Gdańsk areas, the area under discussion demonstrates exceptionally low numbers and weight of mussels.

The weight structure of organisms which represent the preferred parameter for the ecological assessment of marine environment was also analysed. It showed clear dominance of Bivalvia mussels, accounting for 92% of the entire bottom fauna weight.

Fish

All fish species living in the Bay of Gdańsk, both freshwater, seawater and migrating fish, may be found near the port. The most commonly found species include the European flounder, cod, herring, garfish and eel. The most common families are gobies and stickleback. The presence of alien species, such as the round goby is currently an important problem. Observations from Bay of Puck region show that the round goby is driving out local species, notably of the goby family (Gobiidae), taking their traditional shelters under rocks and mussels, openings in hydroengineering structures and shipwrecks. The effect is greater mortality of local gobies by their greater exposure to attacks from predators (fish, birds).

The planned site of the works does not provide a rich nutrient base for the fish, and is not therefore too attractive to those species. The fish nutrient base research for this year showed that, as compared with other Bay of Gdańsk areas, the area under discussion demonstrates exceptionally low numbers and weight of mussels (The results of the macrozoobenthos survey for potential fish and bird feeding sites - IM of Gdańsk).

C5 Landscape

The dominating landscape in the northern part of Stogi Island is the anthropogenic landscape of the Bay of Gdańsk shore line with port buildings and wharfs, as well as industrial facilities and storage depots. It is partially degraded, anthropogenic landscape, neighbouring to the south-east on a semi-natural forest and a natural sea shore. In ecophysiographic terms, the city of Gdańsk and the Stogi Portowe area is classified as unattractive. Nuisance and constraints dominate over natural assets.

A sea view is a large-size cultural landscape element present along the shoreline of the Bay of Gdańsk. The western part of Stogi Island is an open landscape area.

The existing Maritime Container Terminal changed the landscape of the central part of the Stogi Island shore. Wharfs and laydown areas as well as buildings replaced the beach and forested dunes, encroaching on a part of the basin, combined with transportation infrastructure (access road, site roads and railway track). The landscape in the area is currently classified as industrial and infrastructural. Loading berths, moored container ships, overhead travelling cranes and laydown areas complete the landscape.

C6 Human Geography

C6.1 Socio-Economic Environment

C6.1.1 Area of Influence

The primary area of influence is the focus of the impact assessment and it encompasses all project impacts on local resources and receptors. It includes the areas within the boundaries of Gdansk surrounding the Project site.

The secondary area of influence is a wider, regional level study area and includes larger scale economic and infrastructure impacts. This area can be identified as Gdansk-Gdynia-Sopot metropolitan area and Pomorskie Vioievodeship.

The tertiary area of influence considers the wider, national and international scale impacts of the Project.

C6.1.2 Administrative Division and Governance

The project is located within administrative boundaries of the City of Gdańsk, the capital of the Pomeranian Voivodeship located in northern Poland.

C6.1.3 Gdańsk and the Gdańsk Metropolitan Area

Society and social structure

Gdańsk is inhabited by over 460 thousand persons, who account for a major share of Poland's third largest urban area in Poland, with over one million residents, bringing together Gdańsk, Gdynia, Sopot, and the neighbouring towns and communes. The Gdańsk Metropolitan Area is inhabited by a total of 1,541,548 residents (Central Statistical Office, 2012). Gdańsk itself is the sixth largest Polish city.

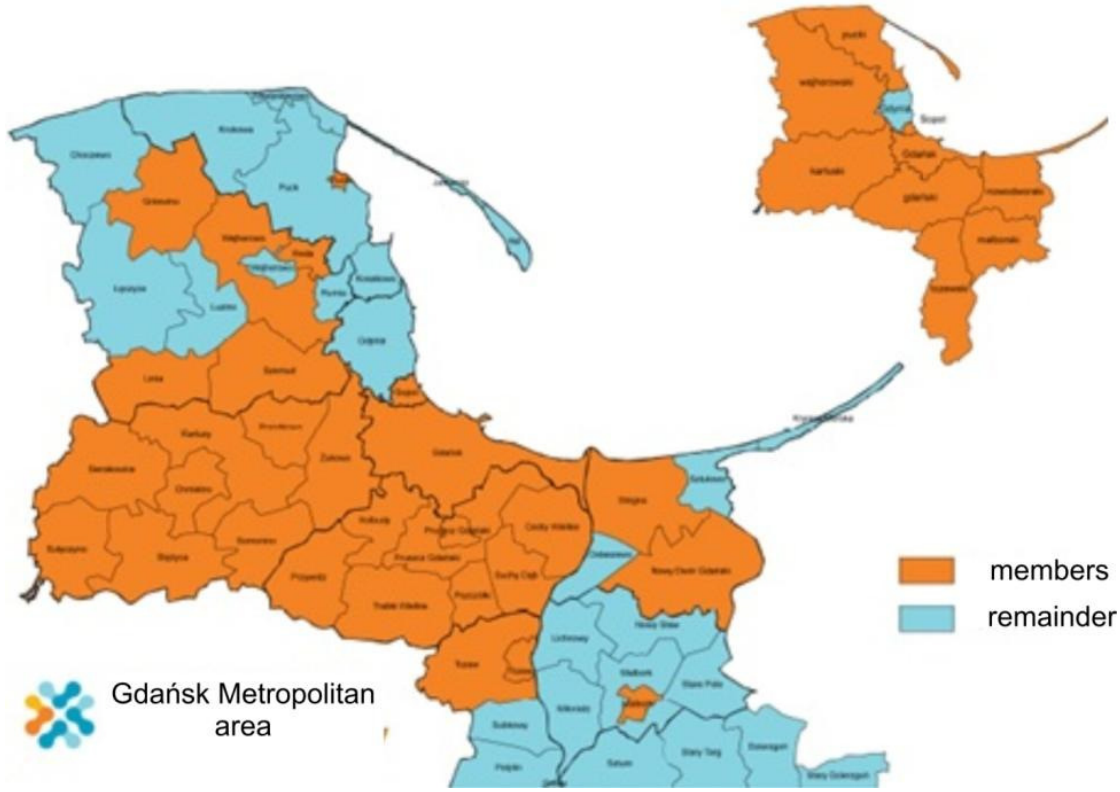


Figure C6-1 Gdańsk Metropolitan Area

Gdańsk and its metropolitan area constitute one of the largest research and academic centres in the Baltic Sea region. Nearly 200 schools are operating in Gdańsk. The number of university students in Gdańsk reached 60 thousand and continues to grow. There are 16 universities in Gdańsk, including 10 non-public schools. The major ones are the University of Gdańsk, the Gdańsk University of Technology and the University of Medical Sciences. The share of the working-age population in the city is in the region of 63%.

Table C.2 Gdańsk Metropolitan Area

	2010	2011	2012	2010	2011	2012
Gdańsk Metropolitan Area				**City of Gdańsk**		
population	1,528,198	1,535,308	1,541,548	460,509	460,517	460,427
women per 100 men	106	106	106			242,283 – women 218,144 - men
population: - pre-working age - working age - post-working age	 296,775 984,410 247,013	 295,796 983,208 256,304	 295,396 980,050 266,102	 73,681.44 297,949.3 88,878.24	 73,222.2 295,191.4 92,103.4	 73,207.89 291,910.7 95,308.39
gainfully employed	349,195	353,040	354,372	311/1,000	316/1,000	319/1,000
total registered unemployed	53,997	54,094	60,091	10,874	11,067	13,075
unemployment rate			13.4			6.3
students			82,263			
previous year's graduates			21,535			

Data acc. to The 2012 local government statistical factbook

National minorities in the Pomeranian Voivodeship

The population census carried out by the Central Statistical Office in 2011 revealed that 5.21% of the Pomeranian residents declared affiliation with a minority, with the Kashubians forming the largest minority. It is a West-Slavic ethnic group, whose origins are traced back straight to the Pomeranian people living in Pomerelia a and eastern part of West Pomerania.

Currently, the Kashubians live in the following districts (poviats) of the Pomorskie Voivodeship: district of Puck, Wejherowo, Kartuzy, Lębork, Bytów, Kościerzyna, northern part of the district of Chojnice, and eastern part of the district of Słupsk. Kashubian settlements in the district of Lębork, Bytów and Słupsk are re-settlements after WW2, when the Kashubians settled where they ancestors formerly lived. The Kashubians are a typical frontier group, which for centuries have lived in a territory which was changing its country affiliation. Many have been germanized or assimilated with the rest of the Polish population. Certain Kashubians have retained their culture and language. The dominant sociological and historical view is that the Kashubians represent an ethnic group of the Polish nation. The Kashubians do not deny their historical ties to Poland, and limit their demands to preservation of their mother tongue, culture and separate historical tradition.

National minorities are in general assimilated with the Polish nation in Poland and the Pomorskie Voivodeship. There are no nationalism-related incidents or persecution, and all residents have equal access to education work, culture and social care.

Table C.3 National and ethnic minorities and users of the Kashubian language (source http://mniejszosci.narodowe.mac.gov.pl/mne/mniejszosci/wyniki-narodowego-spis/6999,Mniejszosci-narodowe-i-etniczne-oraz-spolecznosc-poslugujaca-sie-jezykiem-kaszub.html)

Voivodeship	Total population	Minority													Users of the Kashubian language
		Belorussian	Czech	Crimean Karaites	Lithuanian	Lemko	German	Armenian	Romani	Russian	Slovak	Tatar	Ukrainian	Jewish	
Poland	38,511,824	43,878	2,831	314	7,376	9,640	144,236	1,683	16,723	8,796	2,739	1,828	38,795	7,353	108,140
Pomeranian	2,276,174	389	123	27	319	110	4,614	94	125	504	77	175	3,932	464	107,742
Pomeranian of Poland [%]	5.91	0.89	4.33	8.59	4.33	1.14	3.20	5.57	0.75	5.73	2.81	9.57	10.13	6.31	99.63

Since the Kashubians have ties with Pomerania and its economy, the project will not conflict the attitudes of this population group. No conflicts arising from development of the project are anticipated also in relation to other groups. There are local minority organisations in Pomerania, e.g. of Belorussians, Crimean Karaites, Lithuanians, Germans, Tatars, Ukrainians, Jews, and the Kashubia-Pomerania Association, bringing together the Kashubian language users.

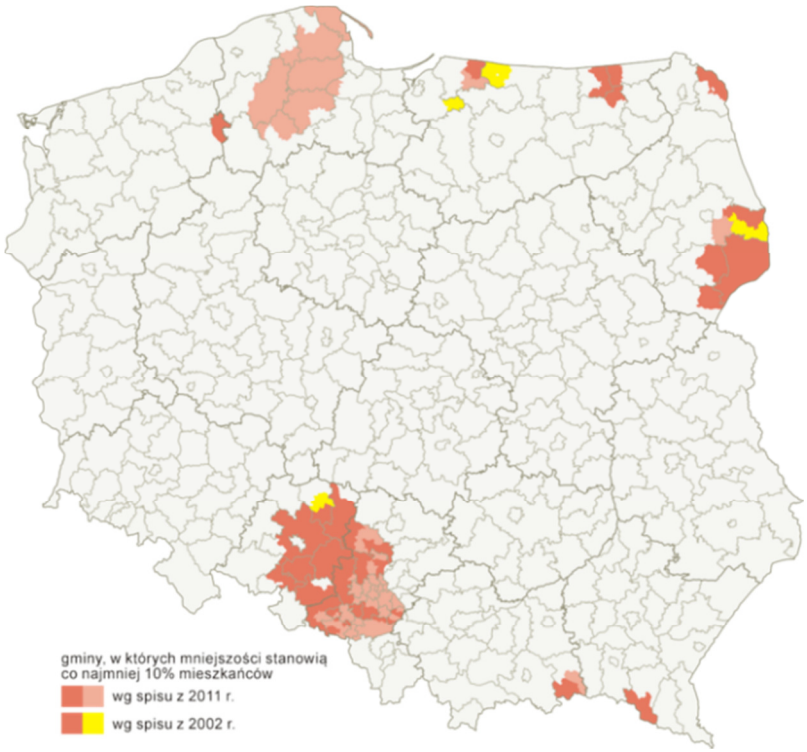


Figure C6-2 Distribution of national minorities in Poland. Communes were national minorities account for at least 10% [source http://pl.wikipedia.org/wiki/Plik:POLSKA_mniejszo%C5%9Bci.png]

Economy

Gdańsk is one of Poland's major international transport hubs. The Gdańsk economy is undergoing qualitative and structural transition. The maritime sector, dominating the mix since the 1990s continues to play an important, but no longer leading role. New challenges and opportunities are emerging in connection with the development of advanced technologies in Gdańsk, including electronics, IT, and telecommunications, as well as tourism and logistics. Those industries, apart from the traditional economic sectors, such as shipyards, power industry, fuel and chemical industry, food industry or construction. A major part of the output comes from the handling of goods shipped to Gdańsk by sea. The employment structure in terms of economic sectors is significantly diversified.

Gdańsk shows strong growth in the number of enterprises, one of the highest among larger Polish cities.

The city's location as the maritime and onshore logistics centre with the state of technology container terminal in the Baltic Sea (DCT Gdańsk S.A.) is of significance from the standpoint of implementing innovative solutions. DCT Gdańsk SA. As indicated in the adopted strategy, Maritime and onshore logistics is one of the most attractive industries in terms of attractive jobs and robust growth of the local economy for economic development of Gdańsk and its entire metropolitan area. The project is aligned with the economic demand generated not only by the local community, but also by other countries which will use the terminal services, either directly or indirectly.

Maritime economy - transport

Ports of primary importance for the national economy are the ports of Gdańsk, Gdynia, Szczecin and Świnoujście. According to the statistics for 1990- 2011 (2012 Maritime Economy Statistical Yearbook), the volume of cargo handled over the 12 years ranged from 47.039 million tonnes to nearly 60 million in 2010. In 2012 the volume of handled cargo increased for the Port of Świnoujście (by 5.6%), Gdańsk (by 3.7%) and Gdynia (by 1.5%), and decreased for the port of Police (by 15.0%) and Szczecin (by 5.9%). Over the last 12 years the Port of Gdańsk took some 35–44% of all cargo shipped by sea. The 2012 cargo volume for the Port of Gdańsk totalled 24,379.4 thousand tonnes, thus accounting for 41%.

The 2012 total cargo handling volume in Poland was 10,781.4 thousand tonnes, with Gdańsk handling 5,600.0 thousand tonnes. The overall seaport cargo handling in the EU-27 in 2011 totalled 3,706,420 thousand tonnes, of which Poland handled 57,738 thousand tonnes and ranked 21st.

There were 6,404 Maritime economy businesses in the Pomeranian Voivodeship in 2012, accounting for 2.4 percent of the businesses in the voivodeship, employing about 6% of the labour force.

Statistics indicate that increasingly more large-tonnage ships are used in shipping, and therefore the need for more storage and handling facilities is expected to grow.

The development of ports and retaining their competitive edge is primarily driven by the need to support increasingly bigger cargo volumes from short- and long-distance shipping. Access to Polish ports and their status as attractive destinations depends on navigation Lane parameters and convenient changeover to other means of transport - by rail and road, and intermodal transport capacities. The Port of Gdańsk is perfectly positioned to play a leading role in the region in terms of high-draft container ship handling.

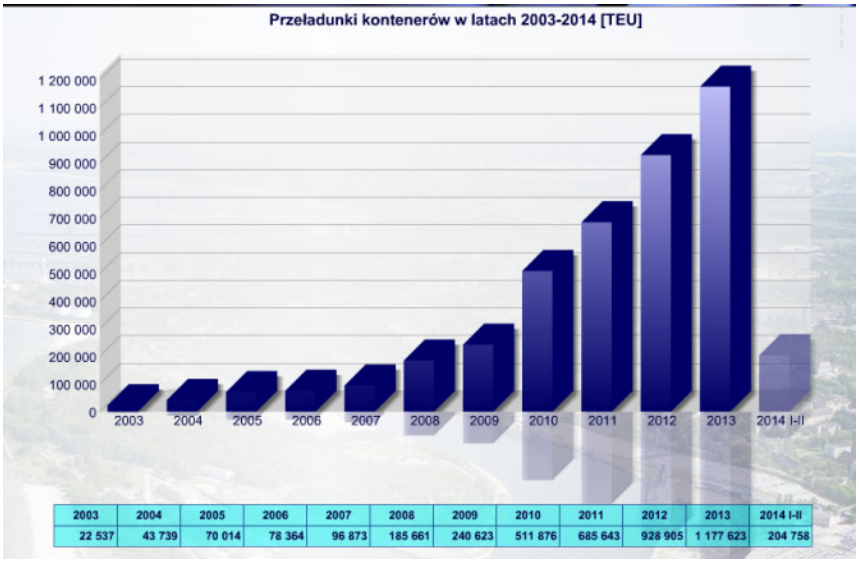


Figure C6-3 Port of Gdańsk container handling (source: http://www.portgdansk.pl/o-porcie/statystyki-przeladunkow)

C6.2 Archaeology and Cultural Heritage

C6.2.1 Historic buildings and artefacts

The project area and forests on the boundary with the terminal accommodate concrete shelters (bunkers) of the Fixed Artillery Battery in Sianki (BAS 25) from the second half of the 20th century, and relics of a German coastal battery of the turn of the 20th century.

The following are located in the western, partially forested part of the project site:

- crew shelter (5),
- fire post (6).

Outside the project site, from 30 to 400 metres away there are:

- back up fire control post (4),
- artillery exchange (7),
- two eastern shelters of the forest battery (2),
- power plant (3),
- main fire control point of the 25th Fixed Artillery Battery (1).

According to the Zoning Plan “Northern Port II” facilities (3) - (7) are protected until the launch of projects stipulated under the plan.

About 2.4 km west of the DCT Maritime Container Terminal boundary there is the Wisłoujście Stronghold complex, with a non-standard crown structure and unique military architecture items. The facility includes a lighthouse, a cannon post with a crest of houses, Fort Care with a barracks building and the eastern trench with a ravelin (heritage register No 1707).

C6.2.2 Underwater archaeological sites

In 2011 a project entitled “ship wreck survey in the entry to the Port of Gdańsk” was carried out within the program of the Minister of culture and national heritage “cultural heritage, priority: protection of archaeological artefacts.” The outcome was preliminary archaeological documentation for five sailing ship wrecks in the eastern part of the Northern Port. Those wrecks were dendrochronologically dated as 15th-18th century (Ossowski 2011).

According to the report by Eko-Konsult, it was determined on the basis of historical materials from the Gdańsk Research Library of the Polish Academy of Sciences that 8 ships sank in the entry to the Port of Gdańsk in 1611-1695 - 2 in the Wisłoujście area, 1 in the Krakowiec and Stogi area.

Table C.4 Identification of underwater archaeological sites

Name	No EPSA*	Latitude	Longitude	Date of origin
Oval	F53.14	54 °24’ 36.1611” N	018 °39’ 24.0000” N	
PPN board	F53.16	54 °25’ 18.0001” N	018 °44’ 12.0000” N	
Nn 1	F53.13	54 °26’ 11.6301” N	018 °41’ 33.8900” N	
Flat-bottomed	F53.12	54 °24’ 40.8401” N	018 °38’ 56.0300” N	
Timber	F53.11	54 °24’ 36.9601” N	018 °39’ 30.9000” N	
W-25	F53.3	54 °24’ 40.0693” N	018 °39’ 16.5659” N	18th century
Loreley	F53.4	54 °24’ 43.1833” N	018 °39’ 3.6899” N	19th century
W-21	F53.5	54 °24’ 39.3133” N	018 °38’ 29.2979” N	17th century
Ore ship	F53.15	54 °24’ 23.2113” N	018 °41’ 17.6499” N	17th century
Kerk	F53.17	54 °24’ 41.9001” N	018 °40’ 60.0000” N	16th/18th century
West A	F53.18	54 °24’ 30.8001” N	018 °40’ 42.5000” N	18th/19th century
West B	F53.26	54 °24’ 31.2581” N	018 °40’ 42.2020” N	17th century
Smug	F53.20	54 °24’ 35.2201” N	018 °41’ 3.5900” N	16th century
Hary	F53.21	54 °24’ 17.9901” N	018 °41’ 21.8000” N	17th century

Name	No EPSA*	Latitude	Longitude	Date of origin
Falburt	F53.22	54 °24’ 21.2801” N	018 °41’ 17.9690” N	15th century
PP Robek	F53.23	54 °24’ 42.9501” N	018 °42’ 58.3400” N	
Agne	F53.24	54 °24’ 22.7701” N	018 °41’ 1.5600” N	
WOC 1	F53.25	54 °24’ 41.6001” N	018 °39’ 29.3000” N	

* Underground Archaeological Site Records

The sites are not located directly at the project site.

C6.3 Baseline Noise conditions

The project will be developed in the Port of Gdańsk. Within the radius of about 2 km of the site is surrounded by industrial facilities, without any facilities requiring noise protection.

The environmental impact assessment report prepared by EKO-KONSULT and information provided on the website of the Port indicate that the allowable noise limits resulting from regular port operations were not exceeded in the course of the relevant measurements.

D Assessment of Impact

D1 Introduction

This section of the report describes the potential environmental impacts, both negative and positive, that are likely to result from the construction and operation of the proposed Deepwater Container Terminal 2 in Gdansk. The key issues associated with the proposed development were identified in the scoping phase, as discussed in Section A5.

Environmental and social assessments are complex processes; they are multi-faceted and with many overlapping elements and require experience, expert knowledge and expert judgement. Further, within each technical discipline (e.g. ecology, noise, air emissions impact, landscape, social, economic etc.), there are assessment approaches / methodology which are specific to that discipline. The impacts, corresponding management and mitigation measures, together with the residual impact after management and mitigation have been applied are summarised in Section E of this report. The presentation of residual impact has adopted a common approach to communicate the impacts of the project during construction, operation and closure and decommissioning.

The following sections provide an assessment of the potential impacts of the project activities during the construction, operational and decommissioning phases of the project.

Presented assessment of impacts has indicative character and refers to the scale described in chapter E2. In the order from the best to the worst impact: Substantial Beneficial; Moderate Beneficial; Minor Beneficial; Negligible Beneficial; No Change; Negligible Adverse; Minor Adverse; Moderate Adverse; Significant Adverse.

Management issues are discussed in separate Section as they usually apply to all stages of the Project.

D2 Management

This section provides an assessment of general management issues which are related to all stages of the DCT2 project, in particular for implementation of Environmental and Social Action Plan (ESAP) for the Project, which will be agreed with the Sponsors.

DCT Gdansk SA, bears general responsibility for the Project and ESAP implementation and shall establish and maintain the organisational structure which will determine the roles, limits of responsibility and powers to the implementation of the Project.

A substantial amount of the DCT2 construction works will be carried by several independent contractors. As a result the Investor (DCT Gdansk SA) will implement procedures within the framework of the Construction Environmental Management Plan (CEMP), the Operational Environmental Management Plan (OEMP) and the Decommissioning Environmental Management Plan (DEMP) in order to provide full informing of contractors about corresponding matters in the ESAP.

Every contract with contractors will include the requirements connected with: ecological and social risks, health check verification of all contractor's staff, required number of personnel qualified in ecology, safety measures, proper transport procedures, agreed procedures for oversize load transport, noise during night time conditions, location of the staff parking and living areas, waste management, waste water discharges etc. Standard procedures (uniform for all the contractors) for chemical and mechanical risks, working at height, acceptance procedures for crane movement, lift sharing rules, works with high temperatures and in confined spaces will be agreed .

The drug and alcohol policy will be clearly published and printed in all of the main points of the construction site.

Management of the construction site will take fully into account the following documents, and the standards and instructions will include, but will not be limited to the following:

- The EBRD Environmental and Social policy, 2008;

- International Labour Organisation Instructions - guidelines on occupational safety and health management in construction activity;
- Environmental Impact Assessment of the Project;
- Administrative Decision on Environmental Consent;
- Polish Labour Code and legal regulations regarding OHS;
- Port Gdanski environmental, occupational health and safety and emergency procedures and regulations.

Management of the Project will create and implement Public Communication procedures in order to ensure continuous information sharing with the public / concerned parties regarding key environmental and social aspects over the period of Project implementation. This will ba carried out in line with Stakeholders Engagement Plan (SEP) developed for the project.

According to the Advisor's experience, the above management rules and procedures provide the proper tools for good implementation of the main EBRD policy rules.

The Port of Gdansk Authority is the entity managing the Port of Gdansk, responsible for provision services related to the use of port infrastructure. DCT is obliged to comply with the rules and regulations applicable at the Port of Gdansk. There are two separate areas In Port of Gdansk reflecting natural differences of operating parameters: internal port located along to Martwa Wisla and the port channel and external port with direct access to the Gulf of Gdansk.

The DCT container terminal is located within so-called external port. Ships approaching to the terminal must first stand at the roadstead and then directly head to the external port. Ships attending DCT terminal do not sail into the internal port. As a result the risk of ships collision is low.

Provisions of International Convention for the Safety of Life at Sea and International Ship and Port Facility Security Code were introduced in the Port of Gdansk in order to ensure the safety of maritime transport, determine the role and range of each institution responsibility and to determine rules of international cooperation in detecting and countering threats to ships. Port of Gdansk received IMO 12543 and UN locator PLGDN in accordance to provisions of international law.

An integrated security management system has been implemented in the Port of Gdansk. Specialized services ensure fire, technical and environmental safety as well as security (both persons and property) units.

Rules of ships traffic in Port of Gdansk are regulated by proper ordinances issued by the Director of Maritime Office in Gdynia. Ordinances refer to the following issues:

- ships traffic in the port,
- pilotage,
- towing,
- speed limits,
- mooring,
- Regulations of the Chief Port Controller.

The regulations include duties and responsibilities of the Chief Port Controller, such as e.g.:

- traffic coordination (order of service) of the ships in the harbor water,
- maintaining the navigability of harbor water and wharves (mooring path),
- reacting in case of accidents in the Port,
- cooperation with the relevant services for protection and abatement pollution in harbor water, fire and chemical safety and rescue incl. the medical one,
- organization of waste collecting from ships,
- informing about possible weather hazards.

Execution of collision risk assessment is a duty of Chief Controller of Port of Gdansk who has complete information on all ships arriving and departing from the Port in specified time. Ships that arrive and depart from the DCT are obliged to respect the Chief Port Controller's commands of the time of entry and exit.

D3 BAT Assessment

D3.1 Background

A requirement for all developments that are subject to funding by EBRD is to ensure that the design is in line with the requirements of the host country (or countries) of the financing institution, as well as with the home country where the development is proposed. In practical terms for IFIs this usually means that there is a requirement for the design to be in line with international best practice as far as is possible. The EBRD in particular requires assurance that their investments are designed to European standards. At this stage there is not BAT Reference document for ports/terminals development in EU. Therefore IFC and EBRD secotral guidance were used for this assessment.

The key documents drawn upon for this assessment are as follows:

- IFC: Environmental, Health, and Safety Guidelines for Ports, Harbors, and Terminals; 2007
- EBRD: Sub-sectoral Environmental and Social Guidelines: Small Scale Port Development.

Where other documents have also been drawn upon they are referenced in the text of this ESIA.

D3.2 DCT2 BAT

The main issues associated with the design and operation of DCT2 for which a BAT demonstration is required, are considered to be:

- air emissions;
- visual impact;
- noise;
- waste and waste water management;
- water pollution prevention.

D3.3 BAT Assessment

The following table presents the assessment of the project design and operation against the BAT requirements.

Table D.1 BAT Assessment Table

Environmental Aspect / Issues	Indicative Requirement	Summary of Control Measures	BAT Compliance
Dredged Materials Management	Marine Dredging Management Plan including: • Dredge Planning Activities • Selection of excavation and dredging methods to minimize suspension of sediments, destruction of benthic habitat, increase the accuracy of the operation, and maintain the density of the dredge material. • Identification of areas sensitive for marine life such as feeding, breeding, calving, and spawning areas and planning of protection measures. • Use techniques (e.g. silt curtains), to minimize adverse impacts on aquatic life from the re-suspension of sediments. • Inspection and monitoring • Disposal of Dredged Material	According to the Polish regulations dredging operations require developing environmental impact report and obtaining a permit for each operation. The permit is issued by competent Marine Authority. Environmental impact report for dredging operations should address suspension of sediments, destruction of benthic habitat, marine ecology and disposal of the dredged material as well as relevant measures to mitigate adverse impacts. Dredging Management is based on decisions issues by local marine authority.	Marine Dredging Management Plan needs to be developed to establish a basis for further dredging assessments and approvals. Is should be included or liased with Operational Environmental Management Plan.
Air Emissions - Combustion Sources	Air emissions management strategy including: • Developing air quality management procedures applicable to ship operators (keeping the limits, low sulphur fuel use). • Procedures for application to land-based activities (heat sources, transportation means).	In 1996-2006, Port of Gdansk carried out the modernisation of the heating system, which involved the closing-down of the central boiler plant fired by coal dust, the construction of nine new local high efficiency gas and oil boiler houses and a heat pump, and the provision of thermal insulation of several buildings. That allowed to reduce total air emission from combustion sources of 98,9%. Ships are obliged to keep speed limits within the port. DCT2 gas fired boilers are in compliance with current emission regulations.	Compliant. Ships arriving to DCT2 will be obliged to comply with the national and port regulations. According to the EIA report developed in 2013 emission standards are met by DCT.
Air emissions – Volatile Organic Compounds	Preventing VOC emissions from storage and reloading operations	All goods will be delivered in containers.	Compliant.

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Environmental Aspect / Issues	Indicative Requirement	Summary of Control Measures	BAT Compliance
Air emission - Dust	Dry bulk materials storage and handling facilities should be designed to minimize or control dust emissions	All goods will be delivered in containers.	Compliant.
Port Sewage and Stormwater	Stormwater and sewage from port facilities management including: • Avoiding installation of storm drainage catch basins that discharge directly into surface waters, • Using containment basins in areas with a high risk of accidental releases of oil or hazardous materials • Using oil / water separators in all runoff collection areas	Measures aimed at emergency and pollution control at the Port of Gdansk are determined in the "Guidelines for emergency and pollution control in the port water regions under the management of Port of Gdansk Authority SA". DCT2 will not be the source of industrial wastewater. Sanitary sewage will be discharged into the sewerage system. Sanitary sewage from ships also will be collected to avoid discharge into surface water. Stormwater will be collected in the stormwater system, treated and discharged into the surface water. It is planned to develop and implement procedure to prevent stormwater contamination with effluents from containers. The procedure will include measures to undertake in case of spill and stormwater contamination. Procedure will be in place prior to start of the operation.	Compliant.
Ship Wastewater	Port operators should provide collection, storage, and transfer and / or treatment services, and facilities of sufficient capacity and type for all wastewater generated by vessels at the port including: Oily waste and wastewater should be collected in barges, vehicles, or central collection systems and storage tanks Wastewater with noxious chemicals from bulk	Wastewater treatment should comply with the "Guidelines for emergency and pollution control in the port water regions under the management of Port of Gdansk Authority SA". Sewage from ships will be collected and treated off-site.	Compliant

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Environmental Aspect / Issues	Indicative Requirement	Summary of Control Measures	BAT Compliance
	tank cleaning should be collected through appropriate onsite or off-site treatment prior to discharge Sewage from ships should be collected and treated onsite or off-site		
Waste Management	The provision of waste reception facilities should be developed in coordination with the local governments and should provide adequate capacity to receive port and ship generated wastes including appropriately sized and located receptacles, and the capacity to deal with seasonal fluctuations. Discharge of solid waste from vessels should be prohibited while in port collection and disposal system should be developed for ship-generated garbage for ships alongside and at anchor.	The Port of Gdansk Authority SA guarantees the reception of waste generated during the sea vessel operation as stipulated under the MARPOL 73/78 Convention waste oils and their mixtures, solid waste, sewage, exhaust cleaning residues. The reception of sea vessel-generated waste at the Port of Gdansk is implemented in compliance with the Act of 12 September 2002 on port vessel-generated waste and cargo residues reception facilities (Journal of Laws No. 166 of 2002, item 1361), as well as the general rules and regulations specified under "The port vessel-generated waste and cargo residues management plan" There will be both hazardous and non-hazardous wastes generated at DCT. Waste will be collected selectively and collected by external authorized companies holding permits for waste management/utilization, required by law.	Compliant Waste management will comply with national regulations and Port of Gdańsk guidelines.
Hazardous Materials and Oil Management	Port operators should prepare a spill prevention, control, and countermeasure plan. Oil and chemical-handling facilities should be located with consideration of natural drainage systems and environmentally-sensitive areas (e.g. mangroves, corals, aquaculture projects, and beaches, providing physical separation / distance whenever possible) Ports should include secondary containment	Measures aimed at emergency and pollution control at the Port of Gdansk are determined in the "Guidelines for emergency and pollution control in the port water regions under the management of Port of Gdansk Authority SA". Ship's commander is obliged to submit at the entrance to Port Gdańsk an information on dangerous/polluting goods. Dangerous goods will be stored in dedicated areas	Compliant

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Environmental Aspect / Issues	Indicative Requirement	Summary of Control Measures	BAT Compliance
	for above ground liquid storage tanks and tanker truck loading and unloading areas Hazardous materials storage and handling facilities should be constructed away from active traffic and protect storage areas from vehicle accidents.	properly secured in case of emergency situation. It is assumed that there will be very few containers with hazardous materials reloaded at the terminal. The terminal will be equipped with secondary containments to prevent spill of hazardous materials. Hazardous materials, including oils will be maintained in accordance with CEMP and OEMP.	
Noise	Noise sources in ports including cargo handling, vehicular traffic, and loading / unloading containers and ships should be identified, controlled and monitored.	Port of Gdańsk Authorities monitor noise levels generated by facilities and equipment, including vessels traffic in the area of Port. Noise modeling presented in the EIA report dated 2013 shows meeting the noise limits for protected areas. The actual impact will be verified after start of DCT operation. Noise measurements will be performed. Appropriate measures to prevent excessive noise will be implemented into the CEMP and OEMP.	Compliant
Biodiversity	Potential impacts to shoreline vegetation, wetlands, fisheries, bird life, and other sensitive aquatic and near-shore habitat habitats during port construction and operation should be fully assessed with special consideration for areas of high biodiversity value or those required for the survival of critically endangered or endangered flora and fauna. Port facilities that conduct cleaning or repair of ballast tanks should be equipped with adequate reception facilities able to prevent the introduction of invasive species. Treatment technologies may include those applied to other effluents accepted in port reception facilities or more specific methods such as	Environmental inventory have been performed to assess potential impacts and habitats damage. Effluent management methods are addressed in the "Guidelines for emergency and pollution control in the port water regions under the management of Port of Gdansk Authority SA". Appropriate compensation measures have been proposed. Ships arriving to DCT2 will be obliged to comply with the national and port regulations.	Compliant

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Environmental Aspect / Issues	Indicative Requirement	Summary of Control Measures	BAT Compliance
	filtration, sterilization (e.g. using ozone or ultraviolet light), or chemical treatment (e.g. biocides).		
Visual Impacts	Visual impacts, including excessive background illumination, should be prevented during the port planning process or managed during operations through the installation of natural visual barriers such as vegetation or light shades, as applicable. The location and color of bulk storage facilities also should be selected with consideration of visual impacts.	No bulk storage facilities are planned at the terminal. The terminal will be located within an industrial area between existing stores.	Compliant
Monitoring	Environmental monitoring activities should be based on direct or indirect indicators of emissions, effluents, and resource use applicable to the particular project. Monitoring frequency should be sufficient to provide representative data for the parameter being monitored.	The Port of Gdansk Authority SA conducts regular examination of the contents of pollutants in the port water regions. The reference methodology for performing measurement of the contents of pollutants in port water basins and the scope of examination is determined in the regulation of Ministry of Environment pertaining to the requirements for performing measurements of substances and energy contents in the environment by the managing entity of the road, railway line, tramway line, airport and port (Dz. U. of 2011, no. 140, pos. 824). Monitoring activities will be included in the CEMP and OEMP. The scope of the monitoring will comply with relevant regulations.	Compliant

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D3.4 Conclusions

The new DCT2 project will be fully compliant with BAT in relation to new sea terminals. Operations within the terminal will comply with national and Port of Gdansk regulations.

D4 Construction

The following sections provide an assessment of the potential impacts of the project activities during the construction phase. A summary of the impacts, management and mitigation measures and residual impacts is presented in Section E. The Monitoring Programme is presented in Section F.

The construction process will consist of typical activities including:

- Preliminaries:
  - land surveying,
  - port basin water drawing works,
  - removal of vegetation, including trees and shrubs,
  - stripping of topsoil at its native location and its storage for subsequent landscaping,
  - site camp development and organisation,
  - removal of military relics and other facilities scheduled for demolition;
- beach regeneration and grading,
- underground infrastructure works, e.g. drainage facilities, foundation works,
- site preparation for concreting (including piling),
- concreting works,
- installation of auxiliary facilities, such as lighting, telecommunications, I&C, safety equipment,
- installation of Terminal equipment, e.g. overhead cranes,
- landscaping.

Impacts may also be generated by the following associated projects:

- redevelopment of the existing access road (Kontenerowa St.) over a section of about 600 m,
- railway siding extension.

D4.1 Level I Assessment

D4.1.1 Ecology and Nature Conservation

The new DCT2 plant is located in the fenced industrial area of Port Gdansk. The site is largely anthropogenic and shows average natural assets. The DCT 2 area borders on the sea (as does the entire Port of Gdańsk) with the southern part with the special protection area for birds “Zatoka Pucka” PLB220005, belonging to the Natura 2000 network. “Zatoka Pucka” Natura 2000 Site is an E12 bird refuge. The area is the most important place for overwintering and stay during seasonal migrations of aquatic birds within Polish coastal waters.

The primary impact on the natural environment at the development stage, including its effects, is determined on the basis of the Owner’s field studies and research. The following impacts are of relevance:

- destruction of breeding sites of the Little Tern, Common Ringed Plover, Common Merganser and Common Shelduck (birds protected within the limits of SPA PLB220005 “Zatoka Pucka”) - its significant adverse impact on the “Zatoka Pucka” Natura 2000 site identified in the EIA report

- destruction of bunkers used as overwintering sites for three bat species: Natterer's bat, Daubenton's bat, brown long-eared bat, which was identified in the EIA report as significant impact on the overwintering population of those species.
- impacts on birds: destruction of breeding sites, limited availability of feeding sites, scaring off of birds around the project site. The loss of about 115 breeding sites is envisaged - in most cases these are common birds. This is not envisaged to produce a significant adverse impact on their populations.
- Irrecoverable destruction of vegetation over an area of about 40 hectares, in most cases disfigured formations with moderate natural value.
- permanent elimination of valuable natural habitats referred to in Annex I to Directive of the Council 92/43/EEC (the Habitats Directive) at the project site - this concerns small habitats of minor importance and not requiring protection.
- destruction of protected plant formations at the project site,
- lasting change of the relief, soil, ground and water conditions, which will translate into changes to habitat conditions, preventing or distorting re-vegetation.
- permanent scaring off of common species and game species, whose small numbers are present at the project site. This impact will be local and represents no genuine threat for the population of the surveyed species.
- scaring off of animals in the course of construction works (transport, noise, night-time lighting, etc.)
- elimination of reproduction sites and places where amphibians are present (common frog and edible frog), which are however unimportant for the population of those species.
- threat for animals unable to get out of excavations and other structures
- tree damage by heavy construction and transport equipment.

The key issue is the destruction of breding sites for protected species such as the Little Tern, Common Ringed Plover, Common Merganser and Common Shelduck. The project meets the derogation criteria set forth in the Habitats Directive, including the overriding social and economic interest, no alternative solutions, capacity to ensure compensation - hence the EIA report proposes compensatory measures.

The environmental permit decision requires the project owner to perform certain natural compensation activities for the affected species, including:

- Compensation for the Little Tern (Sternula albifrons) and Common Ringed Plover (Charadrius hiaticula), involving the establishment of a strip which cannot be penetrated by humans and land predators (such as foxes, minks, martens, raccoon dogs) of the coastal area, 350 m in length as a minimum, with an area appropriate for the breeding site of the species (beach, white dune), not smaller however than 2 hectares.
- Actions to mitigate the impact of the project on the Common Merganser (Memus meraanser), involving the installation of nest boxes for the Common merganser (30 units)
- Actions to mitigate the impact of the project on the Common Shelduck (Jadorna tadorna), involving making of 10 artificial holes or installation of a structure with recesses and shallow pits made of concrete slabs and rubble (possible use of concrete rings or adaptation of concrete items in the site camp - former military shelters and fortifications)
- Mitigation or compensation actions regarding impact on other bird species, including e.g.:
  - conduct of specific works outside the breeding season - i.e. outside 1 March - 31 August time window,
  - preventing the establishment of breeding sites by birds during the construction works at the site in the 1 March - 31 July time window.
  - keeping the appropriate distance between the works and bird colonies, where work may not proceed in the breeding season, and their marking,
  - oversight by an expert ornithologist,

- compensation of the expected loss of bird breeding sites by the installation of nest boxes for smaller species as well as tree and shrub planting.

Mitigation and compensation actions are also envisaged for bat habitats present in the bunkers scheduled for demolition. The proposed actions include e.g.:

- demolition of former shelters which are bat hibernation sites between 1 April and 31 October, that is outside the hibernation period (November - end of March),
- establishment of alternative overwintering sites through adaptation of military shelters in the area for bat needs,
- If the adaptation of existing facilities in not feasible, a new facility may be erected to provide an alternative overwintering shelter for bats,
- oversight by an expert chiropterologist.

In respect of protected plant species, meta-planting of all protected species is envisaged prior to the launch of construction works. The species concerned include: sea holly (Eryngium maritimum), dwarf everlast (Helichrysum arenarium), Royal Helleborine (Epipactis atrorubens), sand sedge (Carex arenaria), common restharrow (Ononis repens), Sea Aster (Aster tripolium). The species will be transplanted from the project site to locations indicated in the environmental requirements decision.

Anthropogenic landscaping is envisaged for a small area (up to about 3-4 hectares). Ruderal planting is also expected.

In respect of isolated breeding and daily stay sites for small amphibian populations (common frog and edible frog), the EIA report and the environmental requirements decision formulate recommendations to limit the duration of construction works and transfer the amphibians to alternative sites.

Proper measures need to be applied to prevent adverse environmental effects. The Construction Environmental Management Plan will provide for a number of regulations to prevent and mitigate environmental impacts, including:

- Heavy transport routing should be planned to avoid vehicles passing through valuable nature sites as well as populated areas.
- Drainage water should be cleaned up to avoid excessive discharged of suspended solids. Sanitary waste water from workers camp needs to be discharged to existing sanitary waste water system for proper treatment.
- Storage of hazardous materials need to be managed and controlled to avoid spillage.
- Excavations, if kept open for a long time, should be properly fenced off (with netting) to prevent small animals falling in.
- Fencing and protection measures should be ensured against penetration of animals to the construction site. The protection measures should primarily apply to deep excavations which may become traps for animals.
- Earthworks should be carried out manually in close vicinity to trees not scheduled for cutting (up to 10 metres from such trees).
- Trees close to the construction work locations which are not scheduled for cutting should be protected against mechanical damage by using wooden covers
- If animals trapped at the project site are identified (e.g. amphibians or small mammals in excavations), they should be captured and taken to a safe place, to their habitats, upon being granted the relevant permits specified under separate regulations, if apply.
- Empty beverage bottles left behind by personnel should be removed as they constitute potential traps for insects.

The planned project will not produce an adverse impact on natural habitats and habitats of protected species in areas of importance for the Community, located in the vicinity of - PLH220030 “Twierdza Wisłoujście” and PLH220044 “Ostoja w Ujściu Wisły”.

The impact on animate natural assets at the development stage should be identified as **significant adverse** only in respect of bats and valuable plant sites. The corresponding compensation actions have been envisaged in this respect.

D4.1.2 Marine and Coastal Ecology

Key impacts on the marine environment and resulting from the construction works include interference with the environment in the course of handling wharf development (650 m in length) and in the course of approach lane dredging of the target depth of 17.5 m.

Importantly, however, the marine and coastal environment is not natural in this area and constitutes part of the existing port. The bay area where work is envisaged is already used by DCT 1 terminal.

The impacts involved in the work in DCT 2 sea section involve:

- A part of the bay will be transformed into a wharf - an irrecoverable ecological effect,
- Interference with bottom deposits in the course of dredging,
- Permanent bay bottom morphology change in the DCT2 area,
- Contamination by floating matter in the course of the construction works,
- Hazard of contamination by POL materials, including from ships carrying out dredging works,
- Scaring off fish and marine organisms (noise, pollution, bottom deposit floating and bottom structure disturbance)
- Onshore storage of dredging material.

Birds

The dredging and deposition of the dredging material at sea will not significantly disturb the operation of important feeding and resting sites for birds. The distribution of birds in the Bay of Gdańsk is varied and depends on the availability of food, owing to birds' ability to move quickly to neighbouring, richer sites. The density of birds at the project site is markedly lower than in areas of the Bay of Puck and the Vistula river mouth. Traffic of vessels and port works constitute natural neighbourhood for birds which remain in the port area, and such birds are not scared off, or otherwise disturbed. This is confirmed by bird nests in the wharf and jetty area. The traffic of vessels relating to the construction works (dredgers, etc.) will affect birds to the same extent that the traffic of vessels has done thus far in the Northern Port.

A periodically unfavourable factor may be the loss of the local food base for birds feeding on bottom animals, namely such species as the Common Goldeneye, the long-tailed duck and the Tufted Duck. The problem is however marginal for the Bay of Gdańsk, because those birds may use richer feeding sites nearby, i.e. the eastern part of the Bay of Gdańsk, the Ptasi Raj reserve, the Vistula river mouth.

Periodic unavailability of food caused by disturbance of bottom deposits and the troubling of water in the construction site area, and in the dump-site area, will not be a factor that threatens local bird populations.

Potential significant impacts at the stage of construction and operation of the ship lane and port basin include pollution of water with chemicals (including POL). Such threats may lead to contamination of birds and their increased mortality. However, the experience of the Northern Port thus far indicates that the risk is marginal, i.e. owing to strict observance of ship bunkering procedures and spill protection measures.

Aquatic mammals

No history of visits of aquatic mammals to the Northern Port renders this aspect irrelevant for the project in question. Potential disturbance of natural habits may be caused by the emitted noise. Noise generated by vessels involved in the construction works will be similar to the noise generated by regular port traffic. Therefore, no in-depth analysis was undertaken for the construction noise impact on the behaviour of aquatic mammals.

Zooplankton

Physical disturbance in deep water will occur, caused by its troubling from the disturbance of bottom deposits. The disturbance will be confined to the area and duration of the works, and will have a minor, indirect impact on zooplankton in the area (depending on phytoplankton changes). Local environment disturbances caused by dredging works and deposition of the excavated material should not have a major effect on zooplankton, since this formation typically moves to more favourable areas and is not linked to a specific site. Importantly, however, the Northern Port area is not too varied in terms of zooplankton.

Bottom fauna

Bottom fauna are subject to impacts both from dredging and deposition of excavated material (offshore dump-site).

In the case of dredging works, the current species and population mix of mussels and crustaceans on the sea bottom will be temporarily eliminated. It should be assumed that bottom fauna formations recover after a few years, as evidenced by the experience thus far. It should therefore be argued on the basis of the available data that bottom fauna of DCT2 terminal site is poor. Considering the species mix of macrozoobenthos, dominated by opportunistic species, highly resistant to environmental stress, as well as considering the limited temporal and spatial range of the construction stage, restoration of the original condition, that is re-colonisation by bottom fauna formations, will take placed after a full life cycle of benthos organisms at the latest, i.e. within 3-4 years. This period corresponds to full recovery of bottom fauna formations in the dredging area. The recovery may however be disturbed. Its rate and direction will depend on multiple factors, such as the operation of the ship lane, maintaining its parameters, frequency of dredging works, vessels in traffic on the lane, failures and disasters.

According to Dubrawski, Cylkowska (2005), the bottom of the Bay of Gdańsk designated as the offshore dumping site should be considered azoic or poorly populated by animals, although detailed test results in this respect are not available. The available data indicates that benthos formations at the bottom of the Bay of Gdańsk (50-60 m deep) includes primarily mussels *Macoma balthica,* polychaetes: *Nereis diversicolor* and *Bylgides sarsi* and crustaceans: *Pontoporeia femorata* and *Saduria entomon. Macoma balthica* mussels account for over 90% of the density and weight of the entire macrozoobenthos.

Since the planned dumping site was already used for deposition and is designed for that purpose, it is currently marked by modified benthos formation parameters as compared with the reference areas having similar depth and physical and chemical parameters (salinity, temperature, oxygen content) (Environmental impact assessment report, 2010).

It is envisaged that the deposition will adversely effect recovering benthos formations in the dumping site area. However, the process of recolonisation taking place between periods of dumping will occur and may be successful if the frequency of distortions (dumping) is minimised. The most significant impact of dumped material on benthos formations takes place in the central sections of the dumping sites and is smaller further away from the centre. The presence of organic matter in deep water at dumping sites where mud is mostly deposited is markedly higher in the water column and over the bottom also in the adjacent areas. Importantly, the dump-site will also be supplied with organisms extracted from the dredging area, which will help to accelerate the bottom fauna species mix recovery.

The macrozoobenthos studies have demonstrated that the average biomass weight, as well as the number and composition recorded for this dump-site and in the area around the dump-site are typical of the outer part of the Bay of Puck with similar depths (Kruk-Dowgiałło and Szaniawska 2008). Small differences within the studied area are not related to the dump-site operation, but result from the macrozoobenthos groups and natural environment variability. Based on the conducted studies and studies conducted in 2009 it can be established that the dumping of sediments from ZMPG S.A. (from the implemented project) at the Gdynia dump-site has not negatively impacted the bottom habitat in the dump-site area and on Natura 2000 areas — the Bay of Gdańsk and Hel Peninsula — PLH 220032. Similar outcomes are expected for the DCT dump-site.

Fish

Disruptions to the water environment during dredging works, as well as the consequences of the activity, will have a limited effect on ichtiofauna and fishing. The scale of the disruption will depend on the fish type, strength and susceptibility as well as on the time it takes for the environment to reach its initial state again.

The Northern Port area was not a site of further ichtiofauna testing, however it may be assumed that it does not exhibit any significant fish spawning and habitat values. Thus it was assumed that fish types typical to port and near port waters will prevail. This area does not lie on a spawning ground migration route for diadromous fish.

Direct mechanical activity will cause a disruption of about 0.6 km^2 of the bottom near the sediment dredging site, water will become disrupted, disruptions to the optical properties, noise and vibrations. As a result of the actions associated with dredged material, disrupting water, disrupting the optical properties, noise and vibration emissions it can be expected that

fish will abandon the site during the works performance period, local and periodic disruptions (8-10h per day) on feeding grounds migration routes of fish migrating through this area whilst works are underway.

Dredging works and the operating noise of hydro technical equipment will cause fish which feed there to temporarily abandon the area, and those which migrate to feeding or spawning grounds to avoid the area. Sediments will disrupt the water and separating water from the dredged material shall create clouds and streams of fine-grained clastic sediments (including clayey and colloidal). The dispersion range for sediment clouds depends on the scale and direction of currents, basin depth, season and sediment grain size. Sediments which are subject to dispersion in the Bay of Gdańsk wind and wave conditions, during dumping will disperse to the north-east.

Phytoplankton

Impact on phytoplankton community should be expected as a result of nitrogen and phosphorus compounds released by the sediments into the waters. An increase in the concentrations of biogenic compounds in the waters will contribute to local and short term surge in phytoplankton biomass and an intensification of primary production.

Macrophytes

The region is devoid of underwater macrophyte populations. As a result no impact on this ecological formation is expected.

Prevention and minimizing impact during the course of construction works shall be ensured by appropriate planning of the construction process which takes into account technologies for the performance of construction works associated with land reclamation from a maritime area as well as deepening the port basin which will protect sea waters against solid and liquid waste pollution.

Construction Environmental Management Plan will define methods which will prevent pollution by:

- Ensuring that works are carried out by appropriately trained personnel, aware of the risks.
- The use of appropriate, quality equipment and machinery, correctly operated and maintained.
- Preventing oil-based substance leaks during water based works and in the event of emergencies ensuring their rapid and effective removal from the basin surface.
- Procedures to be applied in the event of hazardous substances leaking into the stormwater drains;
- Procedures to be applied in the event of an incidental leak of oil-based substances, including the provision of means and procedures required for the removal thereof from the water surface;
- Equipping water borne vessels with sorbents or other substances for the removal of incidental oil based substance leaks;

- Ensuring that all pollution from units performing construction works are discharged into designated port facilities.

The storage and management of dredge spoil remains a separate issue. There exists a risk that the said spoil will be contaminated in a manner preventing its further use. Thus spoil handling procedures shall include:

- testing spoil contamination
- storage at a sea dump-site indicated by the Gdynia Maritime Office Director,
- the use of spoil for resilting the shoreline within the planned quay,
- management of the remaining material in accordance with the provisions of law,
- upon completion of works removal of all pollution from the bottom which might have occurred during construction.

The construction of new harbor will result in irreversible adverse change in the sea beach covered by construction area. Taking into account that the land is designated as a port facility, this change is acceptable. Other impacts on marine ecology would only occur within a short time period and will have a limited effects. The overall impact on marine ecology is expected to be **minor adverse**.

D4.1.3 Dredged Material Management

In accordance with the EIA Report, the volume of dredging works within the scope of the planned undertaking was estimated at 2.0 million m^3.

According to the initial findings 70% of that volume (1,400,000 m^3) constitute silts requiring storage at a sea dump-site and 30% are sands (600,000 m^3) suitable for shore resilting within the scope of the planned quay and to balance civil works associated with land leveling to an elevation of +3.00 m a.s.l.

The dredged silts may be deposited at the Bay of Gdańsk sea dump-site, used previously as a dump-site for silts dredged during the construction of the Maritime Container Terminal in Gdańsk ("DCT" dump-site). Designated for the storage of spoil and in particular silts the so-called "DCT" dump-site is located in the Bay of Gdańsk at a depth of 55 - 60 m b.s.l. The WGS-84 coordinates of the planned dump-site are:

$54^0$30'N, $18^0$53'E

$54^0$30'N, $18^0$55'E

$54^0$29'N, $18^0$53'E

$54^0$29'N, $18^0$55'E.



Figure D4-1 Dump-site location (source: EIA 2013)

Another site for silt storage may be the "Gdańsk" sea landfill site constituting an area of 2.69 km^2 at a depth of 30 m b.s.l. Coordinated of "Gdańsk" dump-site central point: 54030'N, 18050'E. The Maritime Office Director's decision is final.

The dredged spoil dump-site is subject to the regulations of the Convention on Baltic Sea area environmental protection and the Resolution of 26 January 2006 by the Minister of Transport and Construction on the procedure for issuing permits for dumping to sea dredged spoil from and dumping to sea waste and other substances and as such requires an impact assessment and a permit by the Maritime Office Director.

The information provided in the EIA shows that the results of tests on sediment purity in the vicinity of the operating Terminal and tests on 121 core samples conducted within the scope of the planned modernization of the approach fairway to the North Port furthering an assumption that the spoil from the areas requiring dredging will be pollution free (results from an area adjacent to the investment site are included in the EIA). The concentrations of analyzed chemical substances in the sediments is significantly lower that the thresholds set by the Resolution of 16 April 2002 by the Minister of the Environment (currently revoked).

Within the scope of the Construction Environmental Management Plan procedures for tests to exclude the possibility of the presence of hazardous materials polluting the silts from bottom dredging which refer to HELCOM guidelines: „HELCOM Guidelines for the Disposal of Dredged Material at Sea (Adopted in June 2007). An assessment of thy physical, chemical and biological properties of the spoil and biological consequences which may result from its dumping shall be evaluated.

In the event of the dredged silts being free for pollutants, they will not be subject to a waste management impact on the environment assessment. Whereas if tests show the presence of pollutants and the plans for dumping sediments at the dump-site are upheld then an impact analysis may show a negative impact of this management method on the quality of water in the vicinity of the dump-site, bottom aquatic plants occurring in the vicinity of the dump site and organisms habitual to the bottom in that area. Temporary water clouding may also have a negative impact on the fish feeding in that area. Water clouding caused by dumping sediments will be short term and limited to the sedimentation period. Impact scale depends on the tolerance of particular species, volume and frequency of dumping and the degree of clouding prior and after the dump. This impact may also affect the habitats adjacent to the silting dumping site, thus it is recommended to monitor the scale and direction of clouding. As the site has been used for a number of years as bottom sediment dumping site originating from various investments (In 2005 2.5 million m^3 of silts were deposited at the spoil dump-site originating from degrading works associated with the construction of the Maritime Container Terminal DCT 1 in Gdańsk – so-called "DCT" dump site) it may be considered that the impact shall not be significant due to the fact that the environment in this area has already been transformed by the previous dumps, it may be assumed that at the current stage it exhibits changed environmental characteristics as compared with reference sites of similar depth and physical and chemical parameters (salinity, temperature, oxygen content)

Assuming that the basic conditions within the scope of silt testing prior to their final dumping are met, the impact of the works on the environment may be described as **minor adverse**. If it turns out that the spoil is polluted the impact shall increase to **moderate adverse**.

D4.1.4 Noise

Noise nuisance results from typical construction activities carried on site (steel construction assembly, construction machines operation like cranes, bulldozers, trucks etc.) and traffic on access roads to the site. These impacts have temporary character; however, the maximum noise level for some construction activities can be high. In addition, vibration impacts of construction works may be a nuisance, in particular from certain ground works (like pilling / compacting) and from heavy traffic of trucks and construction machines. For the location being considered there are no objects particularly prone to vibrations in the direct vicinity.

Construction of the container terminal dopes not require the transport of large quantities of material, it is foreseen, that the material dredged as part of port basin deepening shall be partially used.

Port of Gdańsk is well connected with the nearby Sucharski route and an extensive railway network, thus transport induced noise impact shall be, to a large extent, masked by the local and transit traffic.

In the event that appropriate management measures are implemented we classify the residual impact as **minor adverse.**

D4.1.5 Surface Water and Effluent

During the construction activities, several potential impacts on local surface water and coastal water can be identified. These include in particular:

- potential contaminated water from de-watering of excavations;
- contaminated water from rain water runoff from exposed ground, and muddy roads;
- silting on account of erosion during quay construction (waste most often occurs near the dredging site and in the vicinity),
- leakage or accidental spillage of fuels, oils, chemicals etc,
- sanitary wastewater from the workers domestic facilities.
- silty water from vehicle washing areas;

One of the impacts associated with the construction of the container port will be deepening works. An analysis of the impact on coastal waters was discussed in chapter D4.1.3.

Planned project is located within the Bay of Gdańsk area of uniform part of transitional waters — PLTWIVWB4 — the Internal Bay of Gdańsk. In accordance with the effective water management plan (plan gospodarowania wodami – PGW) the Vistula river basin (2011) JCW status is neutral.

According to PGW the water condition was evaluated as bad and it was assessed that there is a risk of failure to satisfy the environmental targets.

These waters are subject to derogation pursuant to article 4(4)(iii) of the Framework Water Directive, and the justification cites that due to the natural conditions six years is an insufficient period to enable the improvement of water condition, even assuming complete elimination of pressure. The uniform PLTWIVWB4 waters receive pollution from a significant land area and their condition depends directly on the condition of some inland waters and on reduction of inland pressure. The use of derogation boils down to putting back the deadline for achieving targets.

According to 2012 monitoring data the ecological state of the Bay of Gdańsk was determined to be bad.

Section below presents analysis of potential impact on the water body PLTWIVWB4 in the aspects of water frame directive (WFD) quality elements.

Table D.2 BAT Assessment Table

WFD quality elements	Current status	Potential impact and actions	Mitigation
Ecological state	Poor		
Biological elements	Poor	The scale of the works is unlikely to result in any impact to biological elements within the waterbody. The proposed DCT construction is considered to have minor impact impacts on biological elements within the waterbody, either during construction or operation. The status of waterbody will not changed	Trap and oil based substance separator installations on the storm water drainage network.
Biological elements	Very good	The proposed works are not anticipated to have any impact on morphological aspects of the waterbody, either during construction or operation. The status of waterbody will not changed	
Physico Chemical Elements	poor	The effect of any spillages and leaks during construction is considered to be of minor adverse significance due to the limited volumes expected to be present. minor adverse significance; as the effect will only occur over the short term. The status of waterbody will not changed No further assessment is required.	Construction practices in place to prevent and minimize the effect of such occurrences. Trap and oil based substance separator installations on the storm water drainage network.
Chemical state	N/A	The effect of any spillages and leaks during construction is considered to be of minor adverse significance due to the	Construction practices in place to prevent and minimize the effect of

		limited volumes expected to be present. minor adverse significance; as the effect will only occur over the short term. The status of waterbody will not changed	such occurrences. Trap and oil based substance separator installations on the storm water drainage network.

Potential Impact on Sensitive Areas

There are two sensitive areas within JCW (in the understanding of Article 113 par. 4 of the Water Law): Natura SPA "Zatoka Pucka" PLB220005 and JCW area designated for recreation (including bathing).

Impact on the Natura area was presented in chapter D 3.1, D 3.2, D 4.5 and D 4.6.

According to 2012 WIOS assessment JCW does not fulfill the requirements of a protected area such as bathing sites. The investment in question shall not be detrimental to the quality of surface waters and as such shall not affect the fulfillment of environmental targets for JCW.

Areas of ground become exposed and disturbed during construction. This increases the potential for soil erosion and could potentially result in an increase in the sediment load of waters leaving the construction site. The site is relatively level and therefore the potential for water flowing across the site to cause significant soil erosion is low.

The mitigation action to prevent impact on surface water were identified and presented in environmental decision. The following measures are foreseen:

1. Equip the construction site with sorbents of other substances for the removal of potential oil based substance leaks
2. Hazardous materials such as oils, fuels and chemicals will be stored in dedicated storage areas, complete with spillage protection and working procedures, which will ensure that these materials are handled correctly.
3. Use of appropriate, quality equipment and machinery, correctly operated and maintained.
4. The construction site facilities and the works site are to be equipped with required sanitary facilities and staff social space. Ensure regular collection of wastes by authorized entities.
5. Temporary access roads are to include drainage, be made of removable elements which do not pollute the environment.
6. Clean vehicles leaving the construction site to protect against polluting public roads. Designate an appropriate position equipped with cleaning equipment or construct a temporary vehicle wash station.
7. Secure construction ditches against pollutant incursion associated with the construction works.
8. To prevent impacts from rain water runoff during land preparation and construction, the following measures are foreseen:
9. (a) the face of excavations' will be kept to a minimum to avoid the exposure of open surfaces to natural conditions.
10. (b) surface water runoff collection will be implemented through temporary drainage grooves and sedimentation ponds to avoid direct discharge to the reservoir, this is particularly important during wet seasons.
11. (c) hazardous materials such as oils, fuels and chemicals will be stored in dedicated storage areas, complete with spillage protection and working procedures, which will ensure that these materials are handled correctly. Furthermore, any hazardous materials will be stored in areas with secondary containment.
12. (d) domestic type wastewater will be discharged to plant's sanitary waste water system or collected at site and for removal from site for treatment at an appropriate treatment facility.

With application of proposed measures the overall risk associated with the impact on surface water can be classifies as **minor adverse**.

DCT terminal construction shall not affect the achievement of RDW targets.

D4.2 Level II Assessment

D4.2.1 Landscape and Visual

Landscape effects include direct and indirect effects on the landscape as well as effects on the general landscape character. Potential visual receptors and their sensitivity to the type of changes proposed have been identified and impacts have been assessed, along with the identification of possible mitigation measures to avoid, reduce and compensate for these impacts.

The investment site is located within the port, or an industrial site, with characteristic structures such as quay, port cranes, breakwaters, storage yards present.

The main receptor for all visual impacts are:

- residents of Stogi settlement located about 2 km to the south,
- users of recreational gardens at Stogi area;
- travellers on the ships (view from the sea).

Construction works are usually connected with a number of operations that influence the visual impression of the site, these include:

- heavy transportation on local roads and within the plant;
- tall equipment like cranes;
- storage of construction materials, often connected with fugitive dust emissions;
- construction of worker camps etc.

During construction landscape, the impact will be temporary and local. Furthermore these impacts shall not be very significant as they shall occur on an area the vicinity of which has already been anthropogenicaly transformed.

Disrupting landscape properties during the construction stage will be associated with the performance of civil works, traffic and the presence of construction machinery (including cranes), storage of construction materials, tree felling and plant removal over an area of approx. 40 ha and a degradation of the natural dune section of the coast. These impacts shall be most visible from the sea. The works of dredgers in the maritime basin, transport and dumping spoil shall also be significant.

It is expected that visual aspects will be monitored and mitigated by proper supervision of materials storage and dust emission prevention, fencing of the construction area, periodical cleaning of the area, etc.

Standard organisational measures will be applied to all participants of the construction process to avoid unnecessary visual impacts.

Upon completion of works the area shall be ordered nonetheless impacts associated with the existence of the undertaking and its operation shall appear.

The above impacts would be both temporary and transient and will have a limited degree of exposure on the wider area and as such, the effects on the landscape resources throughout the construction phases are expected to be **negligible adverse**.

D4.2.2 Traffic and Transport

The environmental impacts resulting from development generated traffic will occur during the construction phase due to the need to bring construction staff, civil works traffic, mechanical

works traffic and heavy and abnormal loads to the site. However, the potential for traffic and transport impacts during the construction phase is likely to be limited. The construction phase will not involve a significant increase road and railway movement taking into account current operation of DCT1 and high level of traffic generated by transportation of containers.

Construction materials shall be delivered along Kontenerowa St. and Trasa Sucharskiego route.

These activities will be connected with a number of nuisances for local community including:

- increased traffic on local roads and related traffic jams and extended travelling time;
- heavy loads on roads surface resulting in possible damage;
- noise nuisance along main transportation roads and railways;
- dust and exhaust gases emissions from car engines (NOx, CO).

Difficulties associated with noise emissions and emissions of pollutants into the atmosphere during construction works have been discussed in detail in points D 3.5 and D 3.11.

A Transport Management Plan will be developed for the construction phase and associated with Construction Environmental Management Plan. The plan will govern vehicle movements in and out of the site and will be agreed with all institutional stakeholders prior to the commencement of the development.

If required, abnormal loads would travel to site at night to limit the effects on local traffic flows. The contractor will make arrangements for these activities with the relevant road agency.

Roads and transport works shall include:

- new parking places,
- a reconstruction of the existing access road to Kontenerowa St. along a 600 m section (this element if functionally associated with the undertaking),
- a development of the existing rail siding in order to adapt to enable servicing of the DCT 2 Terminal (a separate undertaking).

A truck washing point should be organised near the gate for cleaning trucks before they enter the public road (if needed). The exact location of the necessary car parking and laydown areas has not as yet been determined. Delivered and transported soils and building materials are to be protected against occurrence of dust by ensuring appropriate humidity or tarpaulin cover.

Traffic safety issues with regard to Project area will be included in the Transport Management Plan associated with Construction and Operational Environmental, Health and Safety Management Plans. Vehicles and trucks outside DCT 2 will be using public roads and therefore will be obliged to comply with traffic and transport regulations. Connection of DCT with Sucharskiego Street allows minimising impacts of transit traffic within dense residential areas of Gdańsk. Construction of Sucharskiego Street was subject of EIA procedures and future development of Port of Gdańsk was considered in the EIA report developed in 2009.

Potential investment impacts at the construction and operation stage may result in: traffic jams, road accidents, potential damage to roads from heavy loads, noise nuisance and air emissions.

Operation of DCT2 will cause traffic increase at the Kontenerowa Street and Sucharskiego Road. Kontenerowa street is located entirely in the industrial areas whereas Sucharskiego Road runs also through the Gdansk city, however outside dense residential areas. According to the EIA report Project realisation may cause increase of number of trucks of 30% during the day and almost 100% at night, however cumulative impact from the terminals and the road will not exceed admissible noise and emission levels.

Traffic at DCT2 will be organized in the same/similar way as at DCT 1. Movement of people and vehicles at the terminal is strictly controlled. External drivers either undergo training or move only with assistance. Transportation/movement roads and traffic rules are additionally provided to the drivers on leaflets and brochures.

Transport Management Plan will have specific provisions to control and enhance construction traffic safety. Transport Management Plan will be consulted with institutional stakeholders as well as all relevant stakeholders, such as other Port roads users: haulage companies cooperating with other Port companies, and where relevant with local communities. Transport Management Plan will take into consideration peak operational traffic at DCT1 and ensure that vehicles movement to and from construction site at such peaks is minimised.

DCT will adapt traffic safety procedures already implemented at DCT1 and haulage companies will be obliged to comply with DCT procedures. Additional checks on the load of the vehicles leaving their site will be carried out to prevent accidents and damage to roads outside the terminal.

Sucharskiego Street will connect Port of Gdansk with other main routes important in global scale. Sucharskiego Street will be directly connected with Tricity south ring (S-7), which is a new road designed and constructed for future higher capacity traffic. Through this road there is an easy access to A1 highway (north – south) and S-6 goes to the west.The street layout around the Port of Gdansk is presented on a map below.

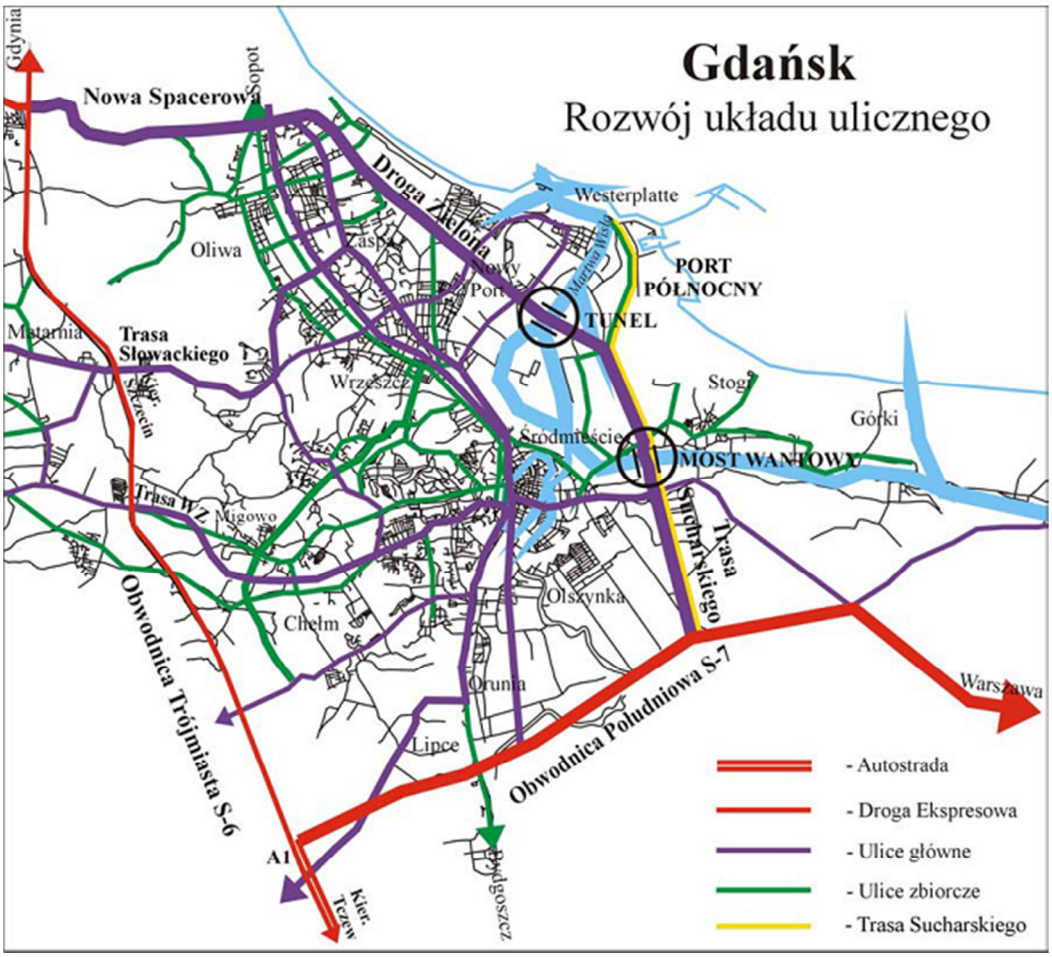


Figure D4-2 Road network in the Port of Gdansk vicinity

source: *EIA Report „Connection of national roads – Sucharskiego Street), May 2010*

In the event that appropriate management measures are implemented we classify the residual impact related to traffic and transportation in contruction phase of the project as **minor adverse**, this may rise if appropriate plans are not implemented leading to disruption and nuisance.

D4.2.3 Waste Management

Performance of construction works associated with preparing the area and execution of the planned undertaking entailing the construction of the DCT 2 Container Terminal shall generate a significant amount of waste.

During the process waste shall be generated predominantly from the construction site, refurbishing and dismantling buildings and road infrastructure including soil and earth from contaminated areas, packaging wastes, wastes associated with the use of decorating materials paints and varnishes.

Sources of wastes:

- Preparing and leveling the site,
- Removal of existing underground infrastructure,
- Bunker demolition
- Works associated with bottom dredging and resilting works
- Functioning of the construction site social facilities

Managing wastes generated during activity associated with the construction works shall be conducted in a manner compliant with the regulations as in force at present and those defined by the Construction Environmental Management Plan.

It should be highlighted that the provisions of the Act are not applicable to, inter alia,

- soil in its original location, including that undisturbed, polluted soil to unpolluted soil
- unpolluted soil; and other naturally occurring materials, excavated during construction works, conditional upon those materials being used for construction purposes in its natural state in the area where it was excavated
- sediments transported within the scope of surface waters associated with the management of waters or waterways, management of waters or water equipment or flood protection, flood and draught mitigation as long as the sediments are not hazardous

The waste listed above is waste typical with a developed market of waste recipients and technologies of its proper processing.

Waste management from the area preparation process and construction process shall be conducted by companies providing construction services in accordance with the principles described in CEMP.

Producers of waste generated during the works will be, in the first instance, obligated to prevent the generation of wastes or limit the quantity of waste and their negative environmental impact.

Correct organization of construction works, preparation of appropriate construction site auxiliary facilities and rational material management shall contribute to minimizing the quantity of wastes in the form of rubble, ceramic materials, wood, plastics, steel, cables etc. used at the construction site.

In accordance with the waste act, the principle for correct waste management entails the prevention of their occurrence or their minimization removal from sites where they occurred and the use of utilization of wastes in a manner ensuring protection of human lives and health as well as environmental protection.

All wastes the generation of which can not be prevented shall in the first place be subject to recycling and in particular all recyclable wastes shall be segregated The remaining wastes shall be utilized in accordance with the law and using available technical and technological solutions based on state of the art techniques. The document confirming performance of this obligation shall constitute waste management documentation and in particular waste log books and waste transfer sheets.

The generated wastes shall be temporarily stored at the construction site in a selective manner at designated storage sites, in bins or containers. The way of storage will not affect adversely further processes of recovery or disposal. Hazardous waste will be collected in locked bins or containers at especially designed for this purpose hardened and roofed places in order to protect against penetration of harmful substances to the soil and waters

Waste will be transferred for transportation and further processing only to companies that ensure ecological safety. Transport of hazardous waste will be consistent with the European Agreement concerning the International Carriage of Dangerous Goods by Road (ADR).

The application of the above principles will enable limiting the impact of the waste management on the environment and people.

Types and quantities of wastes which will be generated during construction and assembly works associated with the planned undertaking as well as the quantity and manner of management of soil masses shall be defined in the building design in accordance with the provisions.

It is foreseen that the impact of waste management during the construction stage will be predominantly local and restricted to sites where waste management takes place at the construction site as waste processing sites. Due to the application of waste management principles and hierarchy principles for handling wastes the negative impact on the surface of land, surface and underground waters as well as the state of the atmosphere shall be limited. Transport impact of wastes to processing sites shall be temporary and insignificant for the state of the atmosphere and acoustic climate.

As long as the principles referred to above shall be adhered to, impact of waste management during construction shall be **minor negligible** on the environment and human health.

D4.2.4 Socio-Economic Impacts

The following section describes the socio-economic impacts associated with the project construction activities. The significance of socio-economic impacts was determined based on the consideration of their direction, magnitude, geographic extent and duration. DCT investment is located in the industrial area of Port Gdansk and the closest residential area is at the distance of appr. 1.5-2 km from the construction area (Stogi).

The workforce needed during the construction phase of the Project will be sourced through the third party, specialised construction firms. Due to the technical nature of the Project it is likely that skilled and semi-skilled labour will be sourced at national level (within Poland) or international. Direct employment of local companies is possible but not determined.

The creation of indirect employment opportunities is associated with:

- the project's supply chain (goods and services);
- spending of project employees in local communities.

Direct or indirect employment of locals will have a significant effect on those who are employed; however, this will be a small portion of the total population.

Social impacts may occur particularly during a 2-years-construction period, which is associated with influx of new employees to Gdansk city.

Organization of construction camp, accommodation and labour force management will be responsibility of a General Contractor (GC), selected in the tender. Provisions mitigating potential impacts will be introduced by GC.

DCT expects that construction activities will be performed in 12-hour-shifts system. Estimated number of employees at the construction site will be approximately 200 people, however in the "peaks" even 300 workers should be expected.

It may be assumed, that most of workers will come from Pomerania region (as at DCT1 construction), however it is likely that some part of workforce will be from other areas of the

country. Depending on the selection of General Contractor, some of specialist works (piling, dredging) will be conducted by workers from abroad.

Most of employees will be accommodated in Gdansk, probably in the hotels, B&Bs or guesthouses located in districts close to construction site (Stogi and Nowy Port districts). It is probable that some workers will be transported by organized buses to the construction site.

As Gdansk is a large city, it is assessed that an influx of even 200 people will be practically imperceptible. Typically for construction sites temporary workers may cause some nuisance to local neighbourhood.. Hoewver based on experience during DCT 1 construction, due to the work time and character of work (physically demanding) occurrence of such incidents has not been reported. Employees after work, usually went back directly to the place of accommodation, and left home for weekends. General Contractor will be obliged to develop and implement measures to prevent from such incidents (e.g. regulations, code of conduct, cooperation with police, engagement of local communities).

The impact of new employees to the local society will not differ much from the one, caused by tourists arriving to the city.

Temporary social impacts may be considered also with relation to new employees. It may concern: overtime work, labour conditions, Health and Safety issues, timely salary payments, accommodation standards, etc. These risks will be mitigated through independent DCT audits as well as Labour Inspectorate. DCT has currently very advanced provisions/procedures in relation to health and safety requirements for their Contractors, and this will refer also to the General Contractor selected for DCT2 construction. Apart from this, DCT will ensure that the Grievance Mechanism will be available for all contractors and contractor's employees, to ensure that any remarks, claims and concerns may be submitted directly to DCT.

Project execution will not have impact on fishermen in the bay due to location within existing Northern Port area where fishing is prohibited. Also the project will not cause economic displacement. Sea fishing requires obtaining a permit from Marine Authority in Gdynia and is forbidden in the area of navigational waters. Dredged material from the Project area will be disposed within existing and operated disposal site therefore it will not have negative impact on fishing activities.

There is no reference in the EIA report by EKO-KONSULT and in the procedures related to the EIA decision to the social vulnerable groups as well as specific concerns and expectations of the local communities. However based on available information in may be stated that such vulnerable groups will not be impacted by the project and that specific concerns and expectations of the local communities lie outside ESHS issues.

The sources of information are predominantly:

- Pomeranian Voivodeship Development Strategy 2020 (Strategia rozwoju województwa pomorskiego 2020), which was adopted on 24.09.2012 by the Pomeranian Voivodeship Parliament after almost 1,5 year process of developing it, including the process of public consultation and Strategic EIA. Public consultations were carried out for 12 weeks (02.04.-22.06.2012), and they included 30 conferences and meetings in which more than 1400 persons took part. In this period 179 persons and institutions expressed their views by submitting 1160 comments to the draft of the STRATEGY. The whole process was documented and reports presenting the comments and how they were taken into account are available online (http://strategia2020.pomorskie.eu). The strategic EIA report is also available there.

The STRATEGY already in the first chapter, on page 6, refers specifically to the DCT terminal, which was constructed in 2007, as to one of the major contributors to fulfilling the so far strategic plans of the voivodeship. Analysis of the reports leads to the conclusion that DCT project is in line with the strategy of the Voivodeship, which is expressed by the Strategic Objective no. 1 called Modern economy (Nowoczesna gospodarka) and Strategic Objective no. 3 called Attractive space (Atrakcyjna przestrzeń). In addition, after analysis of the 261 pages documents gathering all the submitted comments, it can be concluded, that no comments of any vulnerable groups

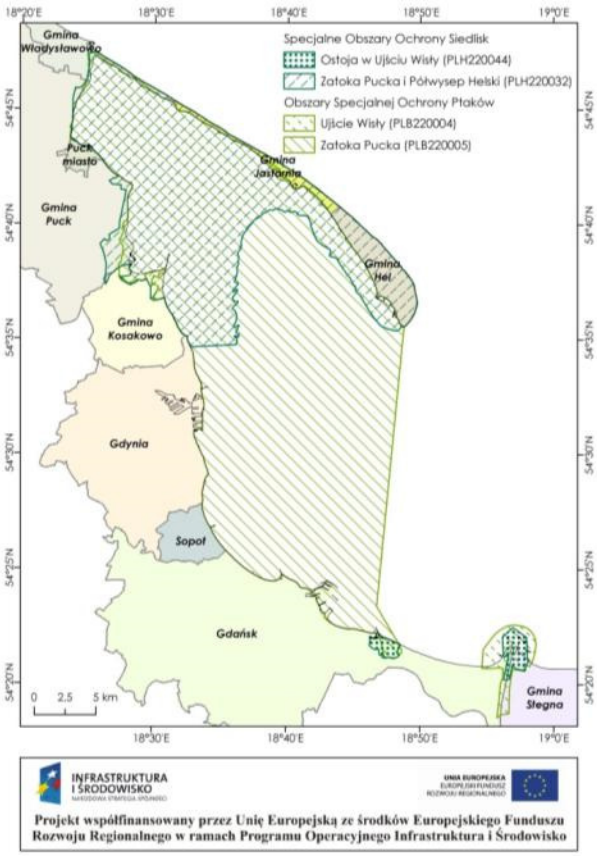
could be identified, as well as no specific concerns and expectations of the local communities were submitted, which could be addressed to the DCT directly or DCT-like project in the negative sense. There are expectations related to the increased role of the Port of Gdańsk, to the employment opportunities etc. However no concerns are related to the any negative impact of the DCT like projects. The fishery issue is present in some comments, however no concerns were raised as to the limitations, which may be an effect of the development of the Port of Gdansk. It should be noted, that local fishery groups (Lokalne grupy rybackie) were mentioned as one of the key-partners of the regional authorities to achieve the Strategic Objective no. 2, which is called Active residents (Aktywni mieszkańcy), and the groups were specifically placed within the Operational Target no. 2.2 called High level of social capital (Wysoki poziom kapitału społecznego).

A lack of expression of any concerns from fishing entities in relation do DCT-like projects and inclusion of local fishery groups into the Strategy scheme could be regarded as the good reason for concluding that no specific, problematic issues should arise from the DCT-project and if any issue grows in the future, it should be quickly detected thanks to the local fishery groups participation and thanks to the grievance mechanism, which has been implemented according to the EBRD requirements.

A very broad public participation process, which was implemented and carried out for the Strategy was a possibility for potential social vulnerable groups to be identified and for local communities to express their specific concerns and expectations. Such identifications, concerns and expectations were identified, however none of them is relevant to the DCT-like project in the sense, that it should induce any kind of preventive or corrective or at least mitigation action.

- Draft version of the management plans for Natura 2000 areas within Puck Bay: Zatoka Pucka i Półwysep Helski (PLH 220032) and Zatoka Pucka (PLB220005) prepared under the task titled: Development of Natura 2000 protecion plans within Zatoka Gdańska and Zalew Wiślany (dated February 28, 2014), currently under review of the Director of Maritime Office in Gdynia, which is the Administrator of the marine areas in question and which is the principal to the job of drafting the Programmes and Plans in question.

An element of the work was to carry out a questionnaire among the fishermen active in the region. The results of the questionnaire are publicly available and published online (http://im.gda.pl/zaklad-ekologii-wod/projekty/446-opracowanie-projektow-planow-ochrony-obszarow-natura-2000-w-rejonie-zatoki-gdaskiej-i-zalewu-wilanego). An area of consideration is much greater, than the location of DCT or DCT-related dredged material disposal site – it is the Puck Bay as presented below.



(Source: http://im.gda.pl/images/Projekty/natura_2000/mapka_pogladowa_2.jpg)

In the analysed area 17 fishing harbors were identified: Kuźnica, Chałupy, Mechelinki, Orłowo, Oksywie, Obłuże, Jastarnia, Gdańsk, Górki Wschodnie, Górki Zachodnie, Hel, Mikoszewo, Świbno, Gdynia, Sopot, Rewa, Puck. Out of them only Gdańsk and potentially Górki Wschodnie, Górki Zachodnie, Orłowo, Sopot could be regarded as close to the DCT-project. In all 17 fishing harbours 174 fishing vessels are registered in total (average 10 per harbour), out of which 108 are up to 10 m long, and 66 are more than 10 m long. From the above data, and from the questionnaire analysis (which was devoted to nature protection issues but some more general conclusions can also be drawn) it can be concluded, that fishing activities are rather extensive and fishermen are very flexible, so the activities related to the DCT-project will not influence their work.

Again – the ongoing work related to the Program and to the Plan has been another possibility for potential social vulnerable groups to speak-up and for local communities to express their specific concerns and expectations. None of them could be directly related to the DCT-like project. One of the results of the Programme, which was drafted was the conclusion of no recommendations to be necessary to develop in relation to spatial management plan for marine areas, which is indirect confirmation, that location of the dredged material disposal site is considered by all parties to be adequate and no action in this direction is seemed to be necessary.

- The DCT EIA decision public participation procedure (which was open in February 2014) resulted in no comments from any entity, and information about DCT applying for EIA decision was widely known due to the presence of this information in local media, especially www.trojmiasto.pl. This information was additionally highlighted by the fact of world's largest ship Mærsk Mc-Kinney Møller calling DCT terminal in August 2013, when EIA report was still not submitted to the authorities. This event was covered by local, regional and national media, including main news programmes. No feed-back from any groups seems to be the confirmation, that DCT project is not perceived as any kind of constraint for local communities and groups.

Stakeholder Engagement Plan and Grievance Mechanism have been developed to inform local community about potential impacts, risk and opportunities. Any complaints and/or claims will be considered and adequate actions will be undertaken.

The overall socio-economic impact associated with construction activities is difficult to predict, as various elements may become dominating. At this stage in the Project it has been classified as **negligible adverse**.

D4.2.5 Archaeology and Cultural Heritage

At the site of the investment and in its vicinity there are no facilities listed on the heritage register. Whereas, during construction works bunkers and shelters shall be demolished - structures with cultural values, subject to protection on the basis of the "North Port I in Gdańsk local plan" adopted by virtue of the City of Gdańsk Council Resolution of 27 August 2009 No XXXIX/1104/09.

According to the plan these structures are only subject to protection until the start of investments stemming from the plan.

Construction works may have severe impact on potential archaeological sites, if these are not identified in time. . The probability of archeological discoveries at the planned dredging sites is marginal. Nevertheless to preserve potential archeological sites, these works should be conducted subject to archeological supervision. Such a requirement was included in the environmental decision for the investment.At the further stages of investment implementation (before obtaining construction permit), approval of the project by the Pomeranian Monuments Conservator is necessary. Consultation with this authority will refer mainly to the issue of dredging activities in the marine area. As confirmed by DCT, these activities will be preceded by magnetic prospecting with a purpose of identification and protection of archaeological monuments (wrecks). Such approach will be in line with previous (current) practices, when dredging in the North Port. Apart from this, the environmental permit contains requirement of archaeological supervision during construction works.

The required infrastructure reconstruction period and the reconstruction of a section of Kontenerowa St. shall not cause significant negative impacts on the environment, subject to the assumption that the works shall be carried out in accordance with trade and best practices.

DCT obtained a permit to carry out search-and-rescue archaeological research within the on-shore Project area. According to the permit, works must be documented and any found artifacts will be forwarded to the Central Maritime Museum in Gdansk.

It is necessery to obtain a permit to search for hidden or abandoned archaeological sites, wrecks and artifacts in the Project area. According to the received information DCT plans to perform archaeological survey of the Baltic bottom with the use of seismoacoustic probe to the depth of 10 m below the bottom surface.

With the application of proper archaeological supervision of ground works, the risk of loosing or damaging any valuable archaeological / heritage features will be minimized.

The overall impact can be classified as **minor beneficial** as valuable resources will be protected and revealed for scientific studies.

D4.2.6 Air Emissions

The air quality assessment considers the potential effects the proposed scheme may have on air quality in the area surrounding the site.

Construction activities have the potential to affect air quality mainly due to dust created by ground works, storage of pilled materials and heavy traffic. These activities can significantly affect the health of workers and local inhabitants (including those living along access roads), the quality of water in the reservoirs and local wildlife etc.

There are a wide range of dust control measures that are commonly used on construction sites. The measures will be incorporated into a Construction Environmental Management Plan (CEMP) and will include:

- Particular attention should be paid to minimize fugitive emissions of dusts and gasses associated with transport and operations of machinery at the construction site. To that end the construction site schedule should be adhered to and appropriate work organization should be ensured.
- Delivered and transported bulk materials are to be protected against occurrence of dust by ensuring appropriate humidity or tarpaulin cover.
- In order to ensure that emissions from all vehicles are as low as possible, all vehicles and machinery shall be in a good state of repair.
- water-spraying of roads / surfaces prior to being worked, and of material stockpiles to minimise dust raising, as required;
- sheeting vehicles carrying dusty materials to prevent materials being blown from the vehicles whilst travelling;
- enforcing speed limits for vehicles on unmade surfaces to minimise dust entrainment and dispersion;
- employing suitable measures to ensure that vehicles leaving the site do not entrain dust onto public roads.

This recommendation was accounted for in the environmental decision.

With the above measures employed, any emissions will be of a temporary nature and at some distance from residential properties, thus minimizing any potential for a nuisance to occur.

Air emissions will also be released from the exhausts of construction machinery and vehicles. These may lead to a negative impact particularly where the trucks pass or operate in the vicinity of occupational residences and if the number of vehicles is significant. However, since the main construction site is distant from residential areas and vehicle routings pass through residential areas on main roads, significant air emissions from these sources are not expected.

The main air emission from the machinery will be connected with the following process:

- welding process pollutants emission
- machine and construction vehicle movements
- exhaust gas emissions from the dredger tug boat, cranes and tophammers.

All combustion engine driven machinery will emit products of combustion, i.e.:

- sulphur dioxide,
- nitrogen oxides,
- PM10 dust,
- carbon monoxide,
- aliphatic hydrocarbons,
- aromatic hydrocarbons,

Assuming dredged spoil volume of 2,000,000 m^3 and estimated production at 50,000 m^3/day, the planned volume of spoil shall be dredged in 44 days (1056 h). Additionally the operation of a 1000-1500 kW dredger, tophammers with total power of 250 kW, a 600 kW tug and a crane (max 250kW) was assumed.

Based on the above assumptions the emission from dredgers tugs and tophammers has been estimated and calculations of maximum concentrations at four sites have been performed in order to compare with permitted quantities.

Calculation results are shown in the table below.

Table D.3 Calculated maximum concentration levels - construction phase emissions

No	Substance name	Acceptable quantity [µg/m3]	Hourly concentrations [µg/m^3]			
			P1	P2	P3.1	P3.2
1	Sulphur dioxide	350	23.322	13.123	88.816	18.828
2	Nitrogen dioxide	200	77.74	43.80	343.46	62.76
3	Carbon oxide	10,000	26.811	43.80	343.46	62.76
4	PM_{10} dust.	50	6.703	8.777	29.606	6.276
5	Aliphatic hydrocarbons	3,000	18.432	12.045	81.415	17.259
6	Aromatic hydrocarbons	1,000	8.378	5.475	37.007	7.845

Maximum concentration levels calculations show that emission resulting from works associated with spoil dredging may cause momentary excessions of the permissible hourly nitrogen dioxide values.

In general, it may be said that the impact is limited to the site of the planned investment.

In order to ensure that emissions from all machinery are as low as possible, all vehicles and machinery shall be in a good state of repair, adhere to emission limits and will be free from dark smoke with the exception of during start up and shut down.

It is considered unlikely that construction traffic will have a significant effect on ambient air quality given the substantial emission sources currently active on site and the volumes of traffic that already enter and leave the existing port facilites.

There will be no on site burning of any materials; therefore there will be no atmospheric emissions as a result of these types of activities.

The impact of emissions of vehicle / machinery exhaust gases on air quality is considered to be **negligible adverse**.

D4.2.7 Soil and minerals

In light of the above premises it can be expected that within the scope of the earth works underway, both in the land as well as the sea part, the occurrence of a quantity of amber warranting its excavation may be expected. According to verbal information by “Przedsiębiorstwo Robót Czerpalnych i Podwodnych” representatives, performing geological probing for the needs of North Port construction during drilling larger quantities of amber, warranting their industrial processing, were not encountered,.

In the event of larger quantities of amber being reported during construction works a concession for their excavation will have to be sought. Obtaining a concession is preceded in this case by a necessary approval of the exploratory works project, by confirming possible mineral resources by the performance of a procedure to assess the environmental impact prior to submitting the permit application.

D4.3 Level III Assessment

D4.3.1 Health, Safety and Public Nuisance

There are several aspects of construction activities that need to be carefully planned in cooperation with local community. These include:

- noise emission associated with the operation of equipment and construction machinery as well as vehicles,
- construction site vibration,
- air pollution caused by increased heavy construction machinery and transport traffic,
- increased dust caused by leveling works as well as the transport and temporary storage of spoil,
- potential presence of unexploided ordnance

The above impacts will be temporary, short term and of a limiter reach, shall occur at the construction site and will mainly apply to a group of contractors and nuisances to the staff shall be eliminated by PPE in accordance with H&S regulations and appropriate work organization.

The construction site facilities and the works site shall be equipped with required sanitary facilities and staff social space. Sewage shall be collected by entities authorized in accordance with CEMP.

Due to the location of the construction site and a considerable distance from residential areas, impact shall only be significant in terms of transporting materials. Rules for minimizing fugitive emissions of dusts and gases generated during transport (vehicle movement) shall be drawn up and those to limit fugitive emissions associated with the operation of machinery at the construction site. Delivered and transported soils and building materials are to be protected against occurrence of dust by ensuring appropriate humidity or tarpaulin cover; use the existing network of public roads for transport purposes. Temporary access roads are to include drainage, be made of removable elements which do not pollute the environment. Vehicles leaving the construction site shall be cleaned at a station equipped with appropriate cleaning equipment.

Upon completion of works the area shall be cleared.

The Stogi Beach and the sea bathing site shall remain undisturbed.

Social and environmental impacts may also result from unexploded ordnance that potentially may be found at the sea bottom or on land. Historical materials, sapper activities conducted on the premises of DCT and adjacent areas, and report on the risk of presence of explosives within terminal area indicate that there may be potential risk of coming across explosive objects from WWI and WWII, both on land and sea area.

DCT developed the procedure which is aimed to ensure safety of performance of construction works and to prevent from explosion on land and water areas. Such a procedure will be implemented at DCT2. According to the procedure DCT employee responsible for the project within which it is necessary to perform potentially hazardous works will be obliged to inform all subcontractors of hazards related to the potential presence of explosives and of the necessity to scan the area and provide the as-built report and clearance certificate. Hazardous works include construction, installation works and works related to intervening with the soil, on land and water areas, both on parent material and on made grounds. Activities related to the detection of explosives, excavation, protection, destruction or neutralisation may be conducted only by the Military Sapper Patrol (MSP) or the Specialist Civil Sapper Company (SCSC). All detected explosives and hazardous objects will be properly secured by the Police or the SCSC until they are handed-out to/taken over by the MSP.

General Contractor will be obliged by contractual agreement to ensure safety during construction works, in particular with regard to unexploded ordnance. GC will be responsible for performing appropriate survey prior to start of construction works and cooperation with specialised military unit during the construction period. Each case of finding unexploded ordnance will be reported to DCT and competent authority and subject of individual procedure depending on kind of explosive material.

Among the positive impacts within the social and economic scope employment for companies and staff for the execution of the investment and associated works should be mentioned.

It is assumed that the appointed construction contractors will abide by the Polish Law on Labour and other relevant legislation, which is in agreement with EBRD's labour related requirements. Similarly, it is assumed that all suppliers will have to comply with the same legislation.

With careful planning and organisation of necessary infrastructure, the health, safety and public nuisance impacts of construction works on local community will be **negligible adverse**.

D4.3.2 Land and Groundwater Quality

The performance of the planned undertaking shall cause changes to an area of about 48.3 ha. It is associated with changes to the land and sea bed formations and in particular:

- elimination of a beach section approximately 400 m to the west of the existing DCT 1 Terminal
- leveling the land surface in the beach and dune area to a level of +3.0 m a.s.l. which shall entail moving approximately 400,000 m^3 of soil, mainly in the southern part of the construction site.
- resilting of an area of 0.08 km^2 of sea waters (in the vicinity of the planned reloading quay), the use of 100,000 m^3 of sand from the dredging works is foreseen.
- The use of approximately 100,000 m^3 of sand obtained by the dredging works for the performance of construction layers for the designed Terminal yard surfaces.
- deepening the port basin in the vicinity of the quay to 17.5 m.
- storage at the Bay of Gdańsk sea dump-site (so-called "DCT" or Gdańsk dump-site) the dredging spoil causing changes to the sea bed.

The main hazard for civic works is polluted spoil which results in the need to act in order to manage this material in accordance with the law. If presence of pollutants shall be determined during performance of earth works, soils samples shall be tested in accordance with the methodology as prescribed by the law on soil quality and if those standards are exceeded, shall be treated as waste and subject to utilization as prescribed by regulation on waste, outside of the investment site.

Geological supervision shall be provided for the duration of earth works in order to ensure a correct assessment of the situation.

The investment shall not carry a risk of mass wasting in the ground or surroundings. The investment site and the surrounding areas are not prone to landslides.

During the construction activities there will be no pre-planned direct discharges to ground. However, construction activities have the potential to release pollutants to the ground (topsoil, subsoil and natural strata) and groundwater as a result of accidental releases. Potential sources of pollution include:

- accidental release of fuels, oils, chemicals, hazardous materials, etc, to the ground - especially in the construction lay-down area, during delivery, material storage, handling and use (for example, re-fuelling, maintenance activities, etc.) with subsequent leaching to groundwater;
- accidental release of liquid wastes during waste storage, handling and removal, with subsequent leaching to groundwater;
- accidental discharge of sanitary wastewater to ground and groundwater from the workers domestic facilities; and
- accidental discharge of the water used for plant, equipment and vehicle washing (if contaminated) to ground and subsequent leaching to the groundwater.

Measures will be employed to reduce the risk posed by the potential sources of pollutants discussed above. These will be included into CEMP.

- All possible steps will be taken to prevent materials being imported onto the site which are already polluted.
- Procedure for leakage prevention and removal will be developed
- Potentially polluting materials, such as fuels, oils, chemicals and associated liquid waste materials, etc. will be stored in dedicated, segregated storage areas, with spillage protection and appropriate environmental security measures to prevent accidental release to ground during storage.
- Appropriate working procedures will be adopted to minimise the risk of accidental release during transport of materials to or from the storage areas.
- Working procedures will ensure that all materials (raw and waste) are handled correctly. Working procedures will seek to prevent accidental release during the use of these materials, for example, vehicle refuelling and plant maintenance, especially with regard to waste oil.
- Procedures will be adopted to minimise the potential for accidental discharge of pollutants during the washing down of plant, equipment and vehicles. Sanitary wastewater will not be discharged to either ground or groundwater.
- Washing of the construction equipment will be performed in designated (paved) areas and will be undertaken with the minimum usage of detergents and chemicals.
- Only approved substances will be added to the washing water and daily limits on the usage of substances (less than 40 kg per day) will be strictly implemented for protection of both groundwater quality and river quality.
- Good technical solutions will be implemented to ensure the full protection of both land and groundwater against any spillage or accidental contamination.
- Equip the construction site with sorbents of other substances for the removal of incidental oil based substance leaks
- Repairs to construction machinery at the constriction site have been forbidden:

Fertile soil layers shall be removed from the surface of digs, foundations and other earth works shall be separated and stored and then used in the first place for recreating a biologically active surface within the planned Terminal and the remains within the area of the facility or other port areas:

With reference to groundwaters it is assumed that during the construction site, drainage may cause a local disruption to the water balance. Groundwaters present at the site of the investment are changeable and depend on the Bay of Gdańsk waters. The investment site is located within the boundaries of uniform part of groundwaters designated JCWPd 15a.

Table D.4 BAT Assessment Table

JCWPd 15a elements	State	Potential impact and consequences
Quantitative state	Good	The investment shall not affect the quantity of groundwaters as they are, to a large extent, dependent of the waters in the Bay of Gdańsk. Possible drainage affecting the water balance shall be limited to the construction phase.
Chemical state	Good	The enterprise is located within GZWP No 111 Gdańsk Subbasin. Due to the deep deposition of water-bearing layer and good insulation from the terrain surface the reservoir does not have a protective area. GZWP area partly overlaps with an area of uniform part of groundwater JCWPd 15a which includes Martwa Wisła drainage basin within the boundary of Żuławy Gdańskie.

In the event that the aforementioned measures are implemented, the residual impact to land should be **negligible adverse** and there should be **no impact** to groundwater.

D5 Operational Impacts

D5.1 Introduction to Operational Impacts

The key topics assessed in detail for the operational phase of the project are:

- air emissions
- ecology and nature conservation;
- surface water and effluent.
- noise impact;

Other topics which do not represent significant potential issues and which are addressed in less detail are:

- landscape and visual;
- socio-economic impacts;
- health, safety and public nuisance;
- traffic and transport;
- land and groundwater quality;
- solid waste management;
- abnormal situations.

The following sections provide an assessment of the potential impacts of the project activities during the operational phase.

A summary of the impacts, management and mitigation measures and residual effects is presented in Section E. The Monitoring Programme is presented in Section F.

D5.2 Level I Assessment

D5.2.1 Noise Impact

Approach

Noise impacts from the DCT 2 project were assessed in detail in the Environmental Impact Assessment Report developed by EKO-KONSULT. Based on that analyses, conclusions were formulated with regard to the type of the expected impact of the project and possible additional requirements

Requirements on the Noise Level

The analysis covered provisions of spatial development plans in the surroundings of the project. The closest residential buildings are approximately 2 km south of the DCT 2, within the local spatial development plan of Stogi Mieszkaniowe in the area of Wrzosy and Wosia Budzysza Streets in the city of Gdańsk RESOLUTION OF GDAŃSK MUNICIPAL COUNCIL No XXII/418/12. These are areas designed for both residential and service user, with the following acceptable values of noise level:

- 55 dB, during the most inconvenient 8 hours of a day, from 6:00 am to 10:00 pm;
- 45 dB, during 1 most inconvenient hour at night, from 10:00 pm to 6:00 am.

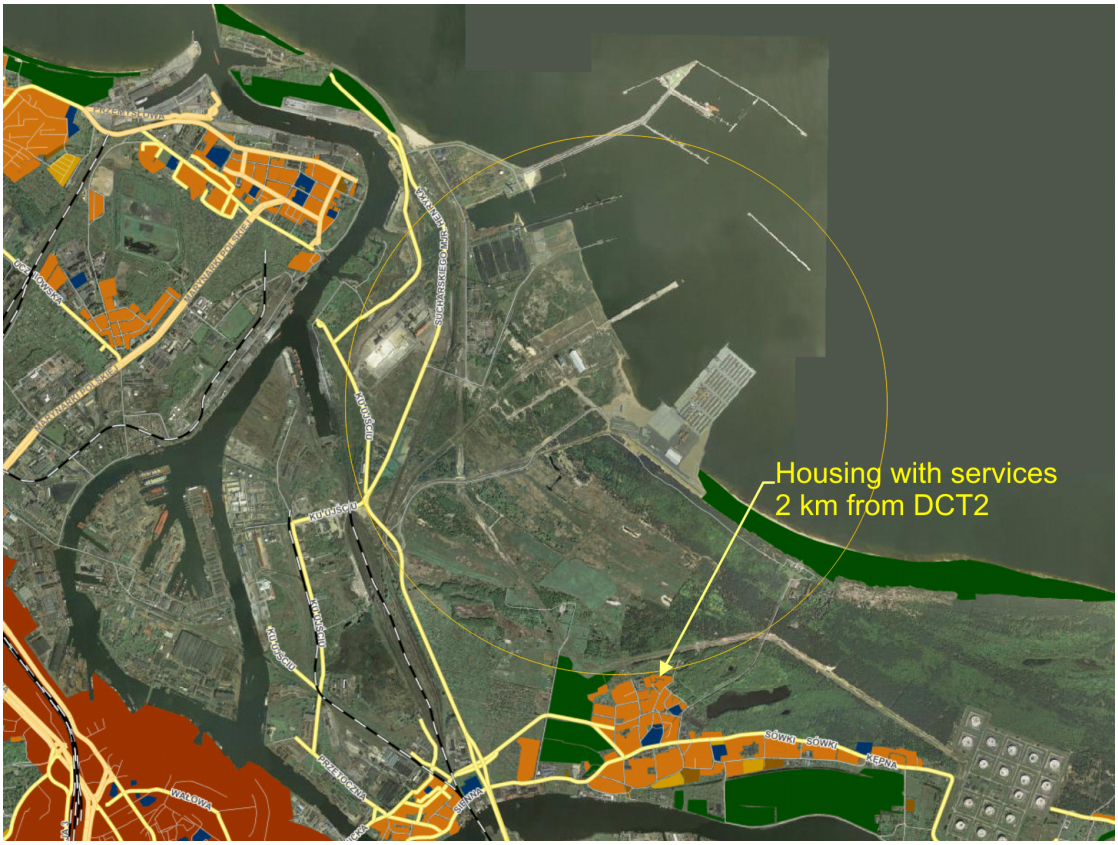


Figure D5-1 Residential areas protected against noise

Noise Calculations

In EKO-KONSULT raport the noise levels have been calculated using LEQ 6 software, which implements the method of calculation given in the standard PN-ISO 9613-2 “Attenuation of sound during propagation outdoors - General method of calculation.”

ISO 9613 provides an engineering method for calculating the attenuation of sound during propagation outdoors and for predicting the levels of environmental noise at a distance from a number of sources.

All noise-generating equipment and objects are represented in the model as point sound sources of appropriate directional characteristics. Objects of large dimensions are divided during data processing or during programmed calculations into sections represented by point sources. The division is done in such manner that the dimension of the section is at least twice smaller than the distance from the point at which noise level is calculated. In addition to these sources, appropriately localized image sources are defined to take account of sound reflected from walls of buildings.

The level of acoustic power of the sources is calculated as an equivalent value within a standardized period of time (8 most unfavourable hours during daytime, or one most unfavourable hour during night time) by averaging the energy emitted in the form of sound and referring its value to 1 pW.

The calculations take into account advantageous conditions of sound propagation - downwind and under moderate ground-based temperature inversion, such as commonly occurs at night during fine weather.

Calculations are made taking into account the frequency of the emitted sound or, in the case of a uniform frequency characteristics, A sound levels.

According to the standard, the equivalent sound pressure level at a receiver location, for the eight octave bands is calculated from equation:

$$L_{fT}(DW) = L_W + D_C - A$$

where:

L_W - is the sound power level of the sound source;

D_C - is the directivity correction;

A - is the sound attenuation that occurs between the source and the receiver.

Attenuation A is given by equation:

$$A = A_{div} + A_{atm} + A_{gr} + A_{bar} + A_{misc}$$

A_{div} - is the attenuation due to geometrical divergence (6 dB to double the distance);

A_{atm} - is the attenuation due to atmospheric absorption;

A_{gr} - is the attenuation due to the interference of the direct sound wave with that reflected from the ground; this attenuation increases with increasing porosity of ground near the source and near the receiver, and with decreasing altitude of wave path over the ground;

A_{bar} - is the attenuation due to a barrier (screening);

A_{misc} - is the attenuation due to diffuse obstacles along the propagation path, such as vegetation or industrial installations.

The equivalent A-weighted sound level is determined by summing the contributing time-mean-square sound pressures calculated according to the above equations for each receiver, calculation noise source and all corresponding image sources, for each octave band, as specified by formula:

$$L_{AT}(DW) = \left\{ \sum_{i=1}^{n} \left[\sum_{j=1}^{8} 10^{0,1\left[L_{fT}(ij) + A_f(j)\right]} \right] \right\}$$

where:

n - is the number of sources and paths;

j - is an index indicating the octave frequency bands;

A_f - denotes the standard A-weighting.

Absorption of sound by ground between the source and the receivers and ground reflecting sound at the power plant site have been taken into account.

Output Noise Levels

Sources of noise related to the operation of the DCT 2 terminal cover new buildings, ventilation devices, air-conditioning devices and mobile sources of noise associated with cargo handling works. Below are presented lists of these sources from the report.

Table D.5 Noise levels, type: building

Item	Noise source description	Equivalent noise level A in dB1)		Time of source activity		Acoustic insulating power ratio of external division walls (walls/roof)
		L_{AeqD}	L_{AeqN}	day	night	
1	workshop	85	85	16	8	30/30
2	fire water pumping station with power generation unit	85	85	16	8	30/30
3	gas boiler room	85	85	16	8	30/30
4	transformer station	80	80	16	8	25/25
5	workshop	85	85	16	8	30/30
6	fire water pumping station with power generation unit	85	85	16	8	30/30
7	transformer station (2 locations)	80	80	16	8	25/25

1) L_{AeqD}, L_{AeqN} Equivalent noise level A inside a room at the distance of 1 m from the external wall, time of assessment equal to 8 h for the day and 1 h for night.

Table D.6 Level of acoustic power of noise levels – existing DCT 1 and designed DCT 2

Item	Noise source	Type of source	Source operating time [h]	Equivalent level A of acoustic power for single source $L_{WA,T}$ [dB]	
				day	night
1	quayside crane type STS (6 pcs.)	point	24	87	87
2	combustion gantry crane type RTG (16 pcs)	point	24	87	87
3	truck tractor (42 pcs)	point	24	90	90
4	lift truck to full containers (5 pcs)	point	24	90	90
5	lift truck to empty containers (4 pcs)	point	24	90	90
6	combustion forklift (7 pcs)	point	24	95	95
7	hydraulic crane (1 pc)	point	24	90	90
8	maritime transport	linear	24	110	110
9	railway transport	linear	24	89	89
10	heavy vehicle transport	point	24	105	105
11	car park for passenger cars	area	24	94	94
12	car park for trucks	area	24	102	102
13	air-conditioning and ventilation system on the roof of the administrative building	point	24	98	92
14	roof fans – boiler room, pumping station and workshop building	point	24	90	90
15	quayside crane type STS (7 pcs)	point	24	87	87
16	electric gantry crane type RTG (21)	point	24	85	85
17	truck tractor (49 pcs.)	point	24	90	90

Item	Noise source	Type of source	Source operating time [h]	Equivalent level A of acoustic power for single source $L_{WA,T}$ [dB]	
				day	night
18	lift truck to full containers (5 pcs)	point	24	90	90
19	lift truck to empty containers (4 pcs)	point	24	90	90
20	combustion forklift (7 pcs)	point	24	95	95
21	hydraulic crane (1 pc)	point	24	90	90
22	maritime transport	linear	24	110	110
23	railway transport	linear	24	98	98
24	heavy vehicle transport	point	24	111	111
25	car park for passenger cars	area	24	81	81
26	car park of trucks and passenger cars	area	24	105	105
27	air-conditioning and ventilation system on the roof of the new administrative building and on the Pre-Gate building	point	24	98	92
28	roof fans – workshop building , pumping station	point	24	90	90

The report includes also the emissions of noise from heavy vehicle and railway transport in the area of the project.

Currently, during a day ca. 500 cars enter and exit the DCT 1; after opening the DCT 2 the quantity of heavy transport, forecasted for 2020 and servicing both terminals, will reach approximately 1690 a day. The assumed speed of trucks within the terminals does not exceed 20 km/h. The level of acoustic power of noise emitted by cars was adopted on the basis of literature data.

Increased traffic of trains from 5 to 48 train sets 33 wagons a day was included. EKO- KONSULT included in the calculations emissions of noise in accordance with its own measurements.

It has been assumed that noise emission from mobile sources during the day and night is the same.

Noise Impact Assessment

The results of the noise calculations (i.e. the equivalent A-weighted sound levels) are given in Figure D4-6.

The noise contours representing the equal sound levels at the height 4 m above ground were plotted on the map, starting from 45 dB towards the source of sound, with a 5 dB step.

The figure shows the equivalent A-weighted sound level calculated for point near the protected area in Stogi,

These assessments show that noise levels during the night and day would remain below the 40 dB(A) level at the nearest residential areas. Such a low value of noise from the DCT terminals justifies fully a statement that its impact will not affect significantly the total level of noise from the whole port of Gdańsk in the nearest residential area.

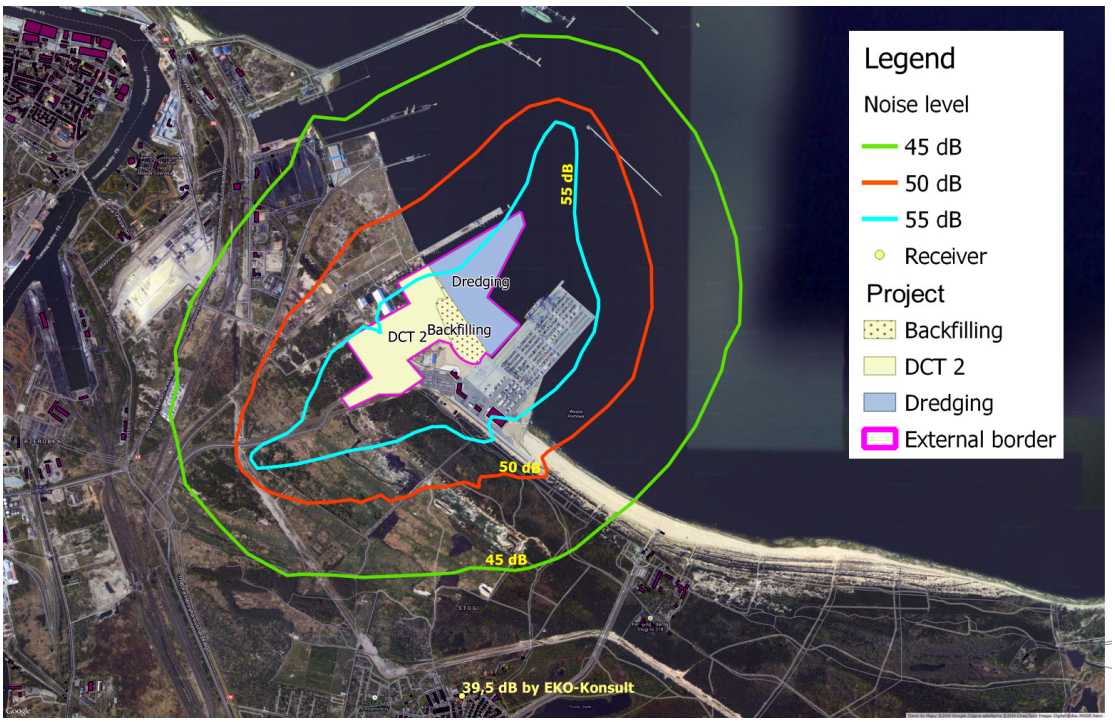


Figure D5-2 Map of izophones

The design of the DCT2 unit will take into account noise modeling results. The sound power levels of the equipment as well as insulation of walls will be approved only if expected noise levels will be acceptable and compliant will legal requirements.

On the basis of the calculations by EKO- KONSULT, the overall noise impact can be defined as **negligible adverse**.

Water Noise Impact Assessment

Currently, approximately 15 ships a day call at the port of Gdańsk; it is planned that at the DCT 2 terminal maximum 3 additional ships will be calling. It means growth by 20%, and average increase in emission of related noise is approximately 0.8 dB. Such a total increase in emission of noise is not noticeable by people and animals.

Locally, in the area of the port basin, servicing DCT terminals, the project implies increasing frequency of maneuvers. We may expect that it will scare away part of marine animals from this area, however, owing to the industrial character of the body of water, this effect can be considered as favourable, resulting in lowered probability of injuries as a consequence of collision. This conclusion applies also to noise generated in connection with dredging of the body of water.

The water noise impact has been considered as negligible adverse impact.

Noise from Communication Lines

EKO-KONSULT assessed the impact of noise from roads related with the project. The total range of noise from heavy vehicles at Sucharskiego and Kontenerowa Streets were calculated. Sucharskiego Route, after the end of construction, is to constitute basic road connection of the Port of Gdańsk with a system of national roads, including S7 High Speed Road and A1 Highway, and Kontenerowa Street connects it with the area of the DCT2 terminal.

The forecasted quantity of trucks servicing the container terminal was assessed at 1700 vehicles a day, and the quantity of heavy vehicles on Sucharskiego Route, anticipated in 2035, at approximately 37,800 vehicles a day. Assuming that the forecast of traffic intensity for Sucharskiego route did not include the service of the container terminal, the estimated growth in traffic intensity of heavy vehicles is 30% in the day time and about 100% at night and, adequately, growth in the level of noise emitted by these roads was estimated at about 1.5 dB during the day and 3 dB at night.

Total road noise impact at night is presented by EKO-KONSULT in the figure. Below is presented its copy with marking of the significant content.

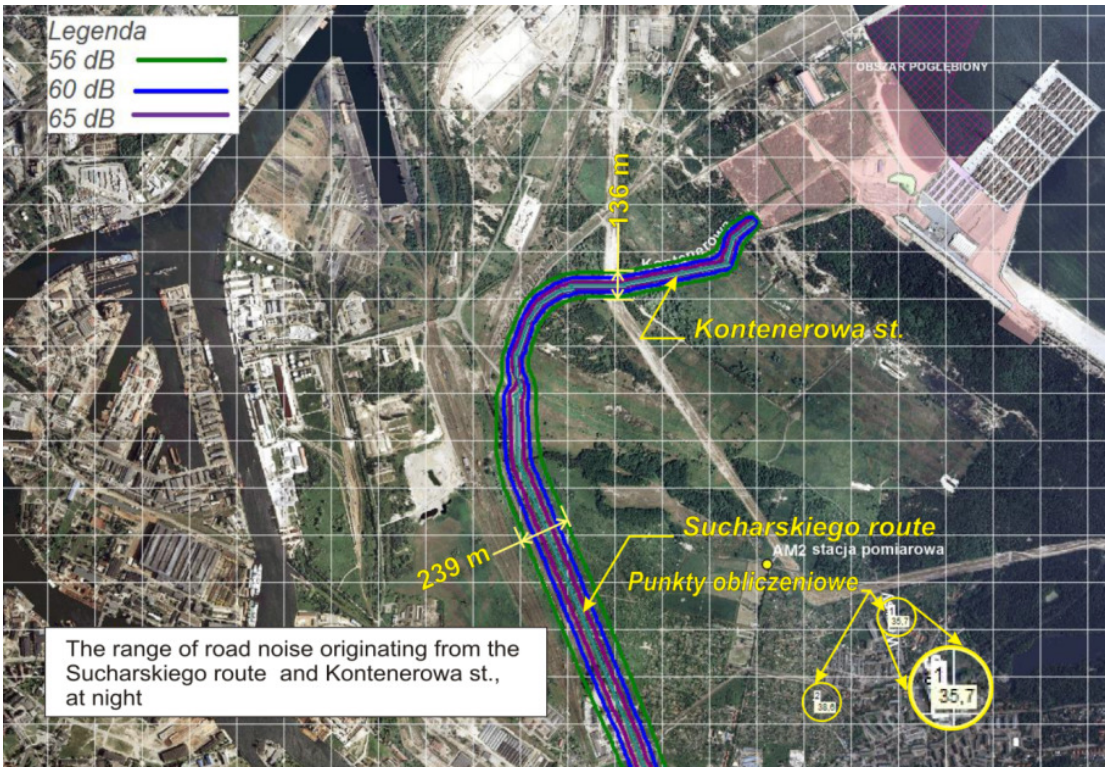


Figure D5-3 Noise from roads

The presented calculations show that the impact of noise from access roads to the container terminals will not exceed the acceptable values.

The road noise impact related to the project will be negligible.

D5.2.2 Surface Water and Effluent

Water supply

The operation of the DCT will require the use of water for domestic, technical and ships purposes. Water consumption requirements can be summarised as follows:

- social and household (71 m^3/d) (together with previous demand - approximately 110 m^3/d),
- technological: pavement washing, fire-fighting purposes (20 m^3/d) (together with previous demand - approximately 30 m^3/d),
- supplies for vessels (100 m^3/d) (together with previous demand - approximately 150 m^3/d).

The water management for a new DCT will be based on the existing water and waste water systems located in Port Północny. The source of water in case of fire will be fire water tank supplied from the port fire pipe line.

Table D.7 Estimated drinking water demand

Daily average	$Q_{dśr}$	191 m^3/d together with previous: 300 m^3/d
Average hourly	$Q_{hśr}$	8 m^3/h together with previous: 12 m^3/h
Maximum hourly	Q_{hmax}	66.6 m^3/h together with previous: 100 m^3/h

Waste Water

The new DCT will use the existing waste water systems in port. There are two main waste water streams and connected outlets:

- household waste water from buildings,
- variable volumes of technological waste water from the workshop building (battery charging room, condensate from gas boilers, condensate from compressor unit room) which will be initially treated locally to the extent required by the regulations and arrangements with the waste water system operator.

This waste water will be drained to the port sewer system - depending on the final concept: using pressure or gravitation pipeline, in the volumes no greater than 100 m^3/d, with maximum concentration of contaminants: general phosphorus 5.0 mg/dm^3, ammonia nitrogen 50 mg/dm^3, oil derivative hydrocarbons 15 mg/dm^3.

Sanitary waste water from vessels will be collected directly from units with floating or wheeled equipment and consequently it will be included in the waste water balance.

Table D.8 Volume of waste water produced in the area of the Terminal

Daily average	Q dśr	91.0 m^3/d together with previous: 150 m^3/d
Average hourly	Q hśr	3.8 m^3/h together with previous: 6 m^3/h
Maximum hourly	Q hmax	20.6 m^3/h together with previous: 32 m^3/h

Within the Terminal hazardous cargo handling may occur incidentally. In order to protect surface waters and the soil, it is planned to implement adequate technical solutions. In the case of damage to a container with hazardous cargo that could be released, it will be placed on special trailer. After examining the degree of damage and determining potential hazard, specialised services will make decision on the method of handling beyond the DCT 2 Terminal.

Rain Water

The rain water system includes drainage of tight pavements (yards and roads), drainage of subgrade of the railway system, and roof slopes of facilities being part of the Terminal. Generated rain water will be drained to the storm water drainage system and then to port waters by outlets of the storm water drainage system in the wall of the quay or breakwater and other onshore structures.

Rain waters from tight surfaces, before draining to the receiver, will undergo initial treatment with regard to mineral suspension and oil-derivative contaminants.

Additionally, at the stage of operation, it is assumed to develop procedures for handling damaged containers with hazardous substances (as a result of leakage, etc.) and potential possible penetration of hazardous substances to the storm water drainage system. The procedure should include actions at the source of the leakage as well as prevent substances that have already penetrated into the storm water drainage from spreading. The procedure should be fully implemented on day of opening of the Terminal.

Apart from rain waters, water directed to the storm water drainage system will be water from the fire-fighting water tank and chambers of the isolator of return flows in the volume of Qmax = 10 dm^3/s.

Rain water will be drained to port waters by 6 to 10 outlets situated in the quay, breakwater or other onshore structures. Outlets will be arranged accordingly in relation to the drainage area from which rain water will be drained.

When applying appropriate initially cleaning devices, no adverse impact on the water environment is anticipated.

The mitigation action to prevent impact on surface water at operational stage were identified and presented in environmental decision. The following measures are foreseen:

1. In the case of finding damage to a container with hazardous cargo, it should be placed on a special tank in order to collect leachate water. The collected leachate water is to be regarded as waste that should be received by an authorised entity.
2. It is required to implement a procedure in the event of penetration of hazardous substances (from the damaged container) to the storm water drainage system, before putting the Terminal into operation.
3. Waste water from ships will be drained to the port sewer system.
4. Rain and thaw waters will be collected in tight drainage systems and after initial treatment (in settling tanks and separators) drained to marine waters.
5. Devices used to treat initially rain water should be maintained in due technical condition by regular inspections and cleaning. Generated deposits and sludge should be transferred to authorised entities for neutralisation.
6. Provision of agents removing the effects of possible leaks.

D5.2.3 Ecology and Nature Conservation

This assessment of the potential impact of operation of the CCGT on ecological receptors is based on the results of field works undertaken by EKO-KONSULT and subsequent nature conservation evaluation.

At the operational stage, the planned terminal may exert very limited impact on vegetation in the areas in the surroundings of the facility. Within the investment itself vegetation will be removed or transformed entirely, thus it will not be a sensible receptor of impacts from operation of the terminal.

Impacts on the adjacent areas can be indirect and could result e.g.:

- from growing air pollution from road transport.
- from the introduction of foreign species, including invasive, transferred in the abovementioned containers.

The occurrence of such impacts is unlikely, due to the fact that significant increase in transport pollutants and significant impact on the quality of atmospheric air, and hence deterioration in the condition of soil and habitats, are not anticipated.

In the case of the introduction of foreign species, the risk of such events is minimal, which results from protections of transported cargo (it is closed in containers). Furthermore, the risk of such impacts is minimised by the existence of relevant unloading, transport and load storage procedures. A factor restricting the possibility of introduction and adoption of foreign species in the immediate surroundings of the planned investment are also poor habitat conditions in the surrounding of the terminal (that can be populated only by a narrow group of specialised species).

Dump of ballast waters populated by water organisms may cause risk of emergence in port waters of foreign species, including invasive or pathogenic species. The size of this risk depends to a large extent on compliance with regulations and the degree of enforcement by the port authorities. (Exchange of ballast waters should be conducted at a distance no less than 200 miles (or when it is impossible – at least 50 miles from the shore at the depth greater than 200m).

The operational phase of the planned terminal will not pose a significant hazard for the local fauna of mammals since most of the recorded species will leave the investment site permanently already at the stage of construction. Hazard associated with the operation of the access road to the terminal is also insignificant, due to a small number of mammals in this area and little vehicle speed.

In the phase of operations, the planned container terminal will not affect substantially bats. As it was observed in the pre-implementation research, this areas is practically of no importance as the feeding and reproductive area of bats.

The implementation of the planned DCT 2 Terminal will result in the following main impact on the avifauna:

- creation of new, anthropogenic habitats, populated by a narrow, different than the current ones, avifauna group connected with industrial areas;
- possibility to exclude a part of the port body of water from use for feeding (used, among others, by breeding birds);
- exclusion or reduction in the possibility of using the body of water of the planned terminal by migrating and wintering birds
- possibility of collision of fowl with cargo handling devices (cranes, ramps).

The planned investment in the phase of operation will not have the negative impact on natural habitats and habitats of species subject to protection in the areas important for the Community, located in the surroundings of - PLH220030 “Twierdza Wisłoujście" and PLH220044 "Refuge at the Estuary of the Vistula River". On the other hand, we may expect two factors that may cause negative impact on species protected in SBPA “Zatoka Pucka":

- scaring away migrating and wintering fowl that stops at the body of water of the planned terminal;
- disturbing and scaring away birds nesting on port quays – especially on pier .

The potential impact applies to tufted duck and greater scaup - two species that form large multispecies herds resting in port basins. Intensive traffic of ships may force the birds to leave this body of water to displace to areas of smaller anthropopressure.

The possibility of interference of breeding of the common tern colonies, at the tip of the pier, has not been observed. Nonetheless, the environmental decision contains recommendations that any vessels in the DCT 2 Terminal should be at a minimum distance of 100 m from the colony in the breeding period (April - August), which will permit full elimination of this hazard and ensure calm breeding.

In the plan of greenery management of the DCT 2 terminal, when planning new plantings, it is planned to use biotope-creating plants constituting food base for birds, in particular plantings of the following species: mountain-ash and common whitebeam, viburnum, hawthorn, cornel morel, black elder. No plantings of expansive foreign species are planned:

The planned investment will not have significant impact on amphibians and reptiles at the stage of its operation. All habitats of these vertebrates within the investment area will be practically excluded from use, therefore, vehicle traffic, cargo handling works or other forms of human activity in the transformed and already invested areas will not affect their population. There will be no impacts on reproductive habitats, migration routes (the inventory did not demonstrate the presence of routes for amphibians).

After starting operation of the terminal, with time, a particular, limited with regard to numbers of species and specimens, specialised group of fauna of invertebrates will develop, adapted to local conditions. At the stage of operation, we should expect that night lighting may attract night flying insects directly to the area of the planned terminal.

The impacts to the protected natural or semi-natural habitats are anticipated during the operational phase can be defined as **negligible beneficial** due to creation of additional food resources for birds.

D5.2.4 Marine and Coastal Ecology

At the stage of operation of the terminal, no impacts are anticipated other than currently found within the Port Północny, including, in the area of DCT 1. After completion of the construction works, the water biocenosis will regenerate in the form similar to the currently present species and sizes of population. Changes in the water environment will be occurring periodically in connection with dredging of the port body of water to depth parameters as assumed in the project. Natural consequences of these works will be similar to the ones presence at the construction stage, although with a smaller scale of impact

D5.3 Level II Assessment

D5.3.1 Traffic and Transport

The operational phase will typically be characterised by a significant number of containers to be transported to/from the site.

Means of transport used for transportation of handled products at the DCT 1 and DCT 2:

- large container vessels,
- feeder vessels,
- railway transport,
- road transport.

The quantity of containers handled within both terminals would be approximately 132,000 a week and the average daily would be 18,000.

The DCT 2 Container Terminal will be operating 24/7/365 in a 4-shift system.

The traffic of vessels within the boundaries of the Port of Gdańsk will comply with the port regulations and under supervision of the Port Authority.

Service from the shore will be provided by the existing Kontenerowa Street and Sucharskiego Route. In the least favourable variant the service of the Terminal will bring to approximately 30% increase in trucks during the day and almost 100% increase in these vehicles during the night.

In autumn 2013, works were carried out consisting in expansion of the railway siding to two additional tracks. Another expansion of the railway siding is planned in the future. The planned project will be related with growth in the number of trains, with which containers will be transported.

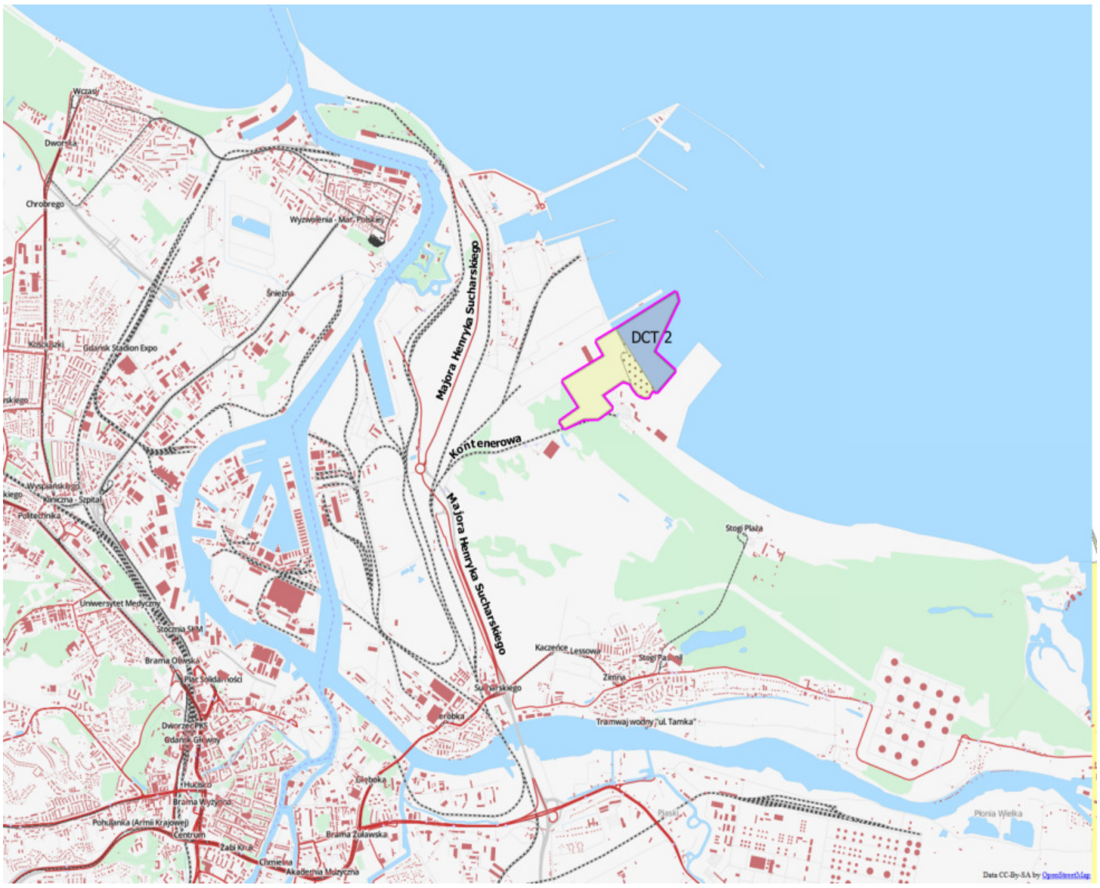


Figure D5-4 Location of the planned DCT 2 Container Terminal as compared to the road system

D5.3.2 Air emissions

An air dispersion modelling study has been undertaken for the operation of the proposed DCT2 project as a part of EIA report developed by EKO-KONSULT.

The emissions to the atmosphere have been modelled using the atmospheric dispersion model compliant with the requirement of Polish law.

The following sections describe:

- the emissions to air from the operation of the DCT2 facility;
- the air dispersion modelling results including concentrations at nearby sensitive sites; and
- a discussion of the modelling results in the context of air quality criteria.

Methodology

In the substance spread analysis carried out by EKO-KONSULT the CALMET/CALPUFF model was used, prepared by Sigma Research Corporation (SRC), being part of Earth Tech. Inc. (USA).

The CALPUFF model is an advanced Gauss cloud model. It is characterised by a great sensitivity to spatial characteristics of the environment and variability of the meteorological field. It has embedded modules permitting, among others, inclusion of transport of contaminants over water areas and impact of large water reservoirs (sea), washing of buildings, dry and wet deposition, simple chemical changes, spread of contaminants in a complex area and inclusion of shore conditions.

The CALPUFF model accepts the information about emission from the following sources:

- point,
- surface,

- volumetric,
- displacement, surface and linear (e.g. fires of forest).

For all types of sources, the user may use time emission variability coefficients.

The CALPUFF model enables us to conduct calculations separately for each type of emission, i.e. for linear, surface and point emission or for various sources and then to sum up the results of particular CALPUFF sessions. The CALPUFF model determines concentrations of the calculated substances on a regular net of calculated field or at receptors defined by the user. Meteorological fields and information about the area have been defined in the network with a mesh 250 m x 250 m in the radius of 15 km from the facility. For this netting also land form and use have been defined.

Meteorological Data

Winds prevailing in the area of Gdansk are the western, southwest and south winds. Winds from west, southwest and northwest are together 53% of all the observations. The rarest winds are from northern and eastern direction.

The wind rose is presented in the figure below.

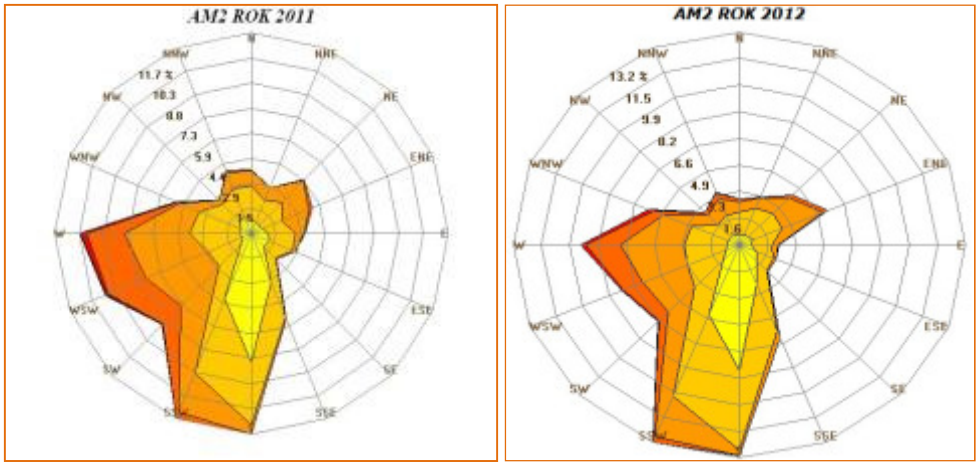


Figure D5-5 Wind rose 2011 and 2012 at the station AM2 [Source: EKO-KONSULT]

A factor affecting significantly the intensity of dispersing pollutants is wind speed. Winds with substantial speeds occur mainly in the autumn and winter period, especially from west and southwest direction, and the average annual wind speed is high and ranges from 4 to 5 m/s.

In the daily distribution, the greatest speed of winds (5 m/s) is present during afternoon hours, while in the morning and in the evening average wind speed is ca. 3.5 m/s. Phenomena that hinder dispersion of contaminants are stillness and winds with speed lower than 2 m/s. Days with stillness or wind with average daily speed not exceeding 2 m/s in Gdańsk are ca. 1/3 of the days a year.

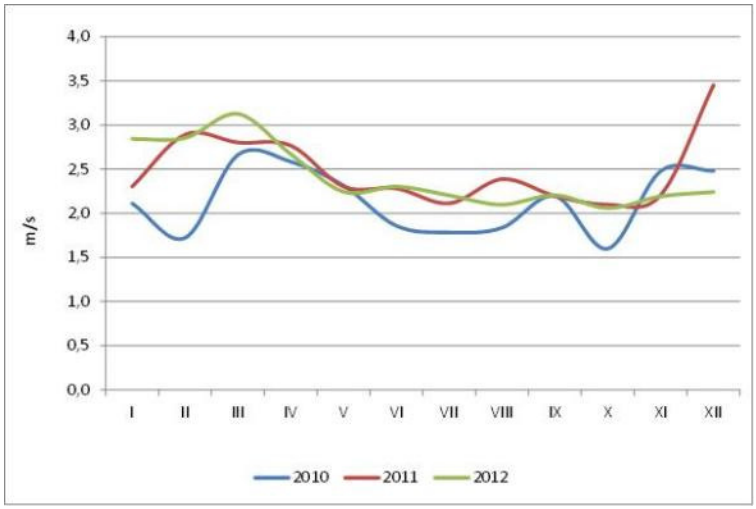


Figure D5-6 Average monthly wind speed in 2012 [Source EKO-KONSULT]

Receptors

The closest residential receptors are located about 1.5 km to the south (Stogi settlement). According to Polish regulations the emission from the site cannot couse exceeding of reference values for substances concentration in ambient air outside the fence of the site.

Emissions

Emission sources at the operational stage of the investment will be:

- combustion of gas in boiler rooms,
- combustion of fuel in devices and vehicles servicing the Terminal,
- combustion of fuel in vehicles of service staff and customers.

Within the designed DCT 1 + DCT 2 Terminal the following facilities heated with natural gas will be located.

Table D.9 Planned demand for energy

Item	DCT 1		DCT 2	
	Structure	Planned boiler room	Structure	Planned boiler room
1	Office building 5-storey	450 kW	Administration building 5-storey	300 kW
2	Workshop building	250 kW	PRE-GATE building 3-storey	100 kW
3	Entry gate	30 kW	Workshop building 3-storey	300 kW
4	Building with agencies' and shippers' offices	40 kW		

Fuel used in boilers and heaters will be natural gas with the following characteristics:

- calorific value - 34.4 MJ/m3
- sulphur content- 40 mg/m3

Emission from boiler room will proceed through the chimney.

Exhaust gases will be emitted during drives, trips and passages of cars and cargo handling devices within the Terminal. In vehicles and devices servicing the Terminal diesel oil will be used.

In total the operation of 209 devices is planned at the DCT 1 and DCT 2, the estimated monthly volume of waste oil is 220,000 l.

Table D.10 Number of cargo handling devices

Device name	Number of devices		
	DCT 1	DCT 2	DCT 1 + DCT 2
quayside crane STS	7	7	14
combustion gantry crane RTG	16		16
truck tractor	42	49	91
lifting truck to full containers	5	5	10
lifting truck to empty containers	4	4	8
forklift, stacker	7	15	22
yard cranes RTG	16	21	37
hydraulic crane	4	7	11
Total	**101**	**108**	**209**
monthly oil consumption (l),	**90,000**	**130,000**	**220,000**

Entering and exiting vessels will be the external source of emission wholly related to the operation of the Terminal. The sources of emission are engines of vessels on the approach track and power generating units on vessels while unloading and loading.

The study of EKO-KONSULT contains the following assumptions:

- vessels 18,000 TEU 1/week
- vessels 12,000 TEU 2/week
- vessels 5000,3000,1000 TEU 10 a week.
- Emission prevention

In order to limit emission of contaminants into the air at the design stage several assumptions have been adopted. They include, among others:

- The application o low-emission heat sources for purposes of heating and receiving hot water
- When planning devices for the needs of the DCT 2, including overhead cranes, it is preferred to supply electricity from the networks to a device, rather than electricity produced by generators placed directly on a device, which has a direct impact on reduction in the consumption of fuels and power and the related reduction in the volume of emissions (dusts, gases and noise);
- The project envisages application of new technology of energy supply to the moored ships, the so-called cold ironing (other designations: alternative maritime Power (AMP), or shore power) for vessels, which will be adapted to this type of power supply technology.
- When designing the transport system we took into consideration the need to minimise the distance to be covered by any kind of vehicles so that the displacement of containers took place on the shortest sections, which has a direct impact on reduction in the consumption of fuels and power and the related reduction in the volume of emissions (dusts, gases and noise).

Results

The emission of pollutants has been calculated for the following groups of emission sources:

- gas boiler rooms,
- vehicles and cargo handling devices,
- car parks,
- engines and vessel units

For each group a separate emission determination method was adopted, adapted to the specific nature of particular devices. The calculations have been carried together for the DCT 1 and DCT 2. The calculations have been made by means of CALMET/CALPUFF model. Calculations of concentrations of substance in the air have been performed in a network of receptors.

Results have been compared with the binding reference values.

Table D.11 Reference values, background and available values

Substance name	CAS symbol	Acceptable concentrations or reference values		Background R [µg/m^3]	D_a-R [µg/m^3]
		D_1 [µg/m^3]	D_a [µg/m^3]		
Sulphur dioxide	7446-09-5	350	20*		
Nitrogen dioxide	10102-44-0	200	40	12	28
Carbon oxide	630-08-0	30,000	-	500	
PM_{10} dust.	-	280	40	25	15
Benzene	71-43-2	30	5	-	
Aromatic hydrocarbons		1,000	43	-	
Aliphatic hydrocarbons		3,000	1,000	-	

** with regard to plant protection*

In order to determine the impact of emission during the operation of the DCT+ T2 Terminal on air quality the following calculations have been made:

- maximum concentrations of emitted substances,
- distributions of concentrations in the network of receptors.

Table D.12 Calculated values of maximum concentrations – emission in the operational phase

Substance name	Maximum one-hour concentrations[µg/m^3]		10% of the permitted concentration or reference value [µg/m^3]
	Gas boiler rooms,	Vessel units ET2.4,ET2.5	
Sulphur dioxide	0.28	19.8	35
Nitrogen dioxide	11.06	67.3	20
Carbon oxide	1.55	45.7	-
PM_{10} dust.	0.03	13.5	28
Aliphatic hydrocarbons	-	12.6	300
Aromatic hydrocarbons	-	5.71	100

The results put together in the above table show that, in accordance with the methodology as required by law, detailed calculations in a network of receptors must be executed only for nitrogen dioxide (maximum value exceeds 10% of the reference value).

Detailed calculations have been made also for sulphur dioxide and PM10 dust.

On the basis of conducted calculations of emissions to the air the following has been concluded:

Sulphur dioxide

The sulphur dioxide emission from the boiler room and vessel units outside the area of the terminal does not result in concentrations higher than 10% of the acceptable value.

Nitrogen dioxide

Nitrogen dioxide emission outside the area of the terminal will not cause concentrations higher than 10% of the acceptable one-hour value – 200 ug/m^3.

PM10 Dust

Concentrations of dust originating from organised emissions from burning of gas in boiler rooms and oil in ship units are many times lower than the reference value = 280 ug/m^3.

To determine the range of impact of the total emission related to the operation of the DCT 1 + DCT 2 Terminal the analysis covers also fugitive emissions and emission from vessels serviced by the Container Terminal. Below are presented the results of the analysis:

Sulphur dioxide

Calculations made in the network of receptors for the whole emission from the Terminal (organised emission+ fugitive emission) including the assumed daily variability show that both in short-term impact (one-hour concentrations) and long-term impact (concentrations for the year) the sulphur dioxide emission will not have a significant impact on the quality of air beyond the area of the Terminal.

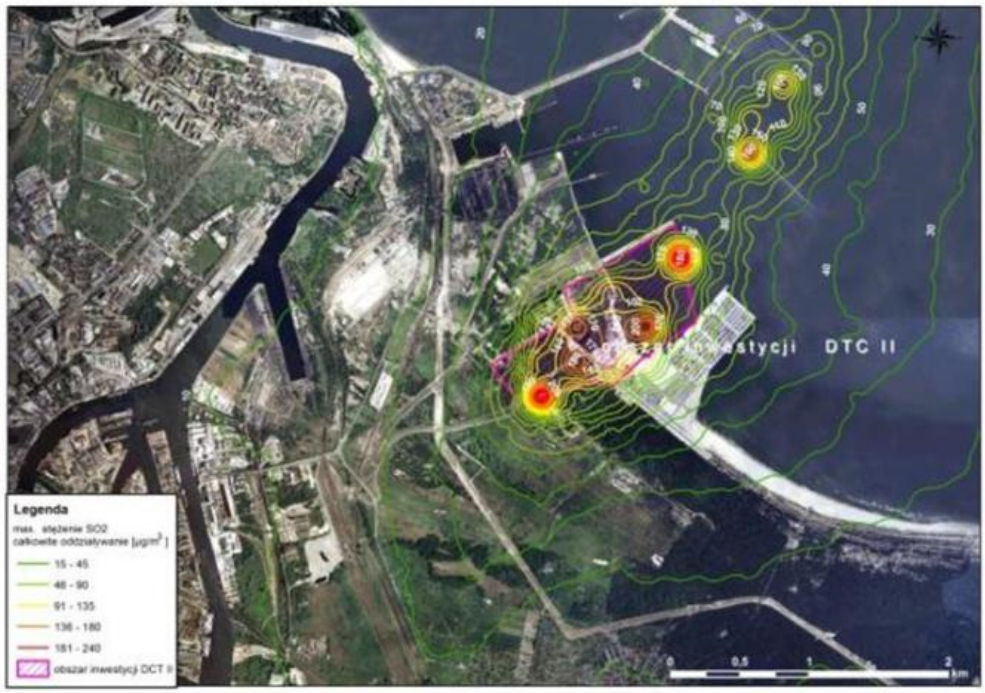


Figure D5-7 Range of impact of total emissions of sulphur dioxide- one-hour concentrations [EKO-KONSULT]

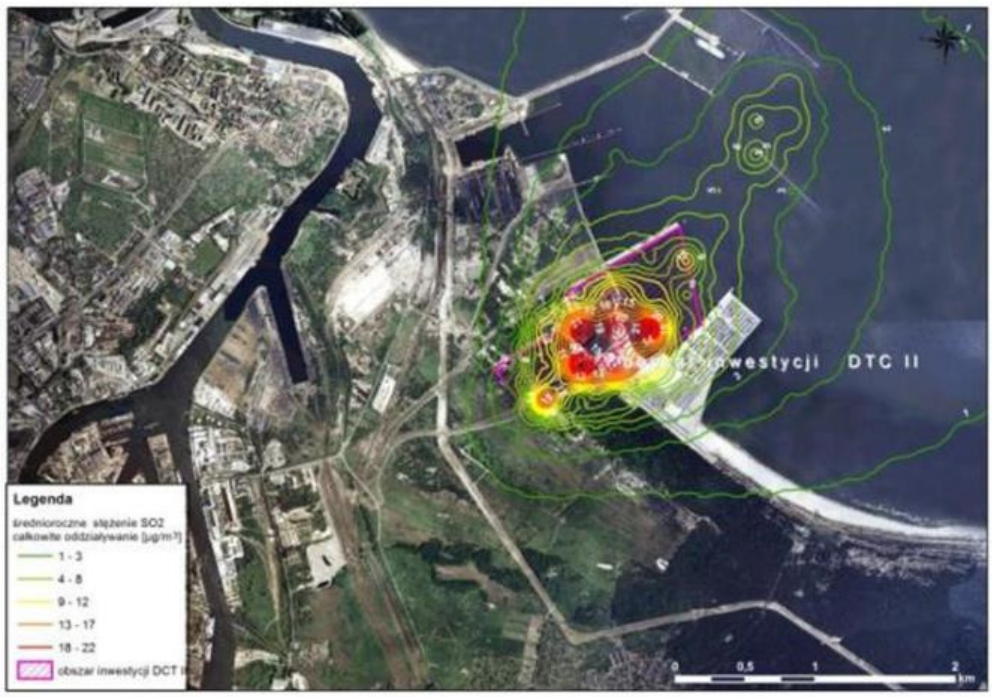


Figure D5-8 Range of impact of total emissions of sulphur dioxide-average annual concentration [EKO-KONSULT]

Nitrogen dioxide

Total nitrogen dioxide emission, in particular in short-term impact, may cause the presence of concentrations higher than acceptable. Determination whether the condition of frequency of presence (18 hours a year) will be met requires precise determination of the simultaneous operation of all facilities and devices in the period. The calculated share of NO_2 emission from cargo handling devices and vessels indicates that this emission is of essential importance for the level of contaminants. The planned change in drive to electric and of diesel oil to LNG will reduce radically emission and resulting values of concentrations and the range of impact of dioxide nitrogen emissions from the Terminal .

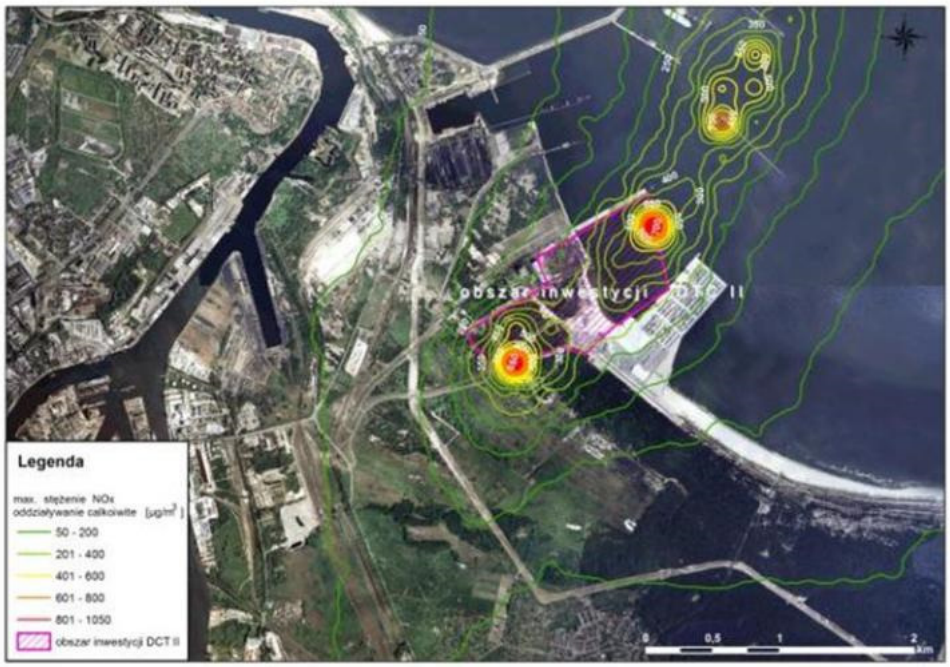


Figure D5-9 Range of impact of the total emission of nitrogen dioxide- one-hour concentrations [EKOKONSUL]



Figure D5-10 Range of impact of the total emission of nitrogen dioxide- average annual concentrations [EKOKONSUL]

PM10 Dust

Despite relatively low total emission of dust (due to the type of emission – surface emission with low spread parameters) in the area of car parks in the vicinity the very restrictive daily average norm may be exceeded (dust concentration = 50 µ g/m^3 with acceptable frequency of occurrence of 35 times a year). This area is very small. It will be certainly reduced after lowering emission from cargo handling devices. Dust emission in the long-term, after considering the existing background = 25 µ g/m^3 does not cause exceeded available value = 15 µ g/m^3 beyond the area of the Terminal.



Figure D5-11 Range of impact of the total dust emission – average daily concentrations [EKOKONSUL]



Figure D5-12 Range of impact of the total PM10 dust emission – average annual concentrations [EKOKONSUL]

When applying the scheduled solutions, the impact of emission from the DCT 1 and DCT 2 Terminals on atmospheric air quality will be **negligible adverse**.

D5.3.3 Landscape and Visual

This section addresses the nature and significance of the perceived alterations in landscape character and visual amenity that would result from the scheme during the operation of the DCT2 site. The prominence of the development proposals will be dependent upon a combination of land use and topographic factors relative to the position of the visual receptor and their sensitivity. The sensitivity of visual receptors is an important issue in the assessment of the significance of an impact. This sensitivity is based on the type of receptor, as well as the special nature of the view. For example, residential properties are considered to have a high sensitivity.

However, the planned investment is located within the area of Port Północny and will be connected compositionally with the already existing landscape elements as the existing quay of the DCT with gantry cranes and storage yards for containers. These are the elements forming the whole set of features typical of landscape elements of Port Północny. The whole port, whose area covers also the designed quay with infrastructure and mooring vessels, will be a strong dominant in the landscape of this part of the Bay of Gdańsk. With good visibility and calm sea a vessel mooring at the quay and gantries will be visible from a considerable distance, both from the high sea and from the shore. New elements in the landscape will be clearly identified with the port function, which is assigned to this coast area. The container terminal is an element identified clearly with the port function being an important protective function that forms the city of Gdansk and defines its identity. In this perspective underlining the role of the port in the landscape may be a positive phenomenon.

As a result of execution of the planned project, the area will be managed in accordance with its intended use stipulated in planning documents of the city and the Port of Gdansk Authority, ordered and arranged aesthetically.

As a result the changes to the site would predominantly cause a **minor adverse** impact on the landscape character on commencement of operation.

D5.3.4 Socio-Economic Impacts

This review focuses primarily on the social effects that are likely to take place as a result of the operation of the proposed DCT2 Project.

In order to predict what the probable impact of a development will be it is important to have a clear understanding of the current and past socioeconomic conditions of the area. This can be used as baseline against the predicted changes can be assessed for significance.

Socio-economic impacts at the operational phase are significant. The execution of the investment will have a positive impact not only on its closest surroundings (i.e. port or the metropolitan area of Gdańsk), but its impact will cover the whole Poland and other countries of Central and Eastern Europe.

The need for construction of a modern, intermodal container terminal results from the observed in recent years increased demand for consumer goods in Poland and other countries of the region, increase in commercial turnover with other EU countries, progressing globalisation processes and creation of new standards regarding modern logistics.

DCT Gdańsk S.A. cooperates on a large scale with different entities operating in the business environment of the Terminal . Therefore, implementation of this project and increased cargo handling capacities will directly contribute to the scope of cooperation and will make it possible for external entities to increase turnover. As a consequence, the investment DCT Gdańsk will affect economic situation in the region by the stimulation and growth in the demand for delivery of goods and complementary services provided by external entities.

The execution of the investment DCT Gdańsk S.A. will contribute to improvement on the labor market and reduction in the unemployment rate.

The unemployment rate in the Pomeranian Voivodeship is running at a relatively permanent level of 12-13. The execution of this investment DCT Gdańsk S.A. will clearly contribute to improvement on the labor market and reduction in the unemployment rate. On the whole, each

1,500 TEU the cargo handling in the port involves the creation of one job at the terminal, which, in turn, may lead to additionally one or two jobs in port-related activities. Therefore, the target increase in cargo handling capacity by 2,500,000 TEU should result in creation of roughly 1,600 jobs in the port.

According to the study "Assessment of Impact of Sea Ports in Gdańsk and Gdynia on Socio-Economic Situation in the Pomeranian Voivodeship", Actia Forum, December, 2011, the development of port infrastructure (port authorities), reinforced with appropriate technical potential (port companies) and supplemented with services for sea means of transport will be generating multiplier effects The obtained results indicate that each job in the port creates two jobs in the nearest surroundings, 12.2 jobs in the indirect surroundings and approximately 24.6 jobs in the socio-economic surroundings source:

http://ewt.pomorskie.eu/res/ewt/Transbaltic/2_raport_koncowy.pdf

Lower transportation costs imply increase in competitiveness of Poland, which may contribute to reinforcing development opportunities also outside the borders of Poland.

In the context of the project implementation's impact on socio-economic conditions it should also be emphasised that due to the special character and character of the planned investment project, effects causing actual improvement in goods transport will be of key importance.

In addition, activities of the DCT contributes to generating public revenues, for instance, the form of customs and excise duty.

Overall assessment of socio-economic impacts can be defined as **Substantial Beneficial.**

D5.3.5 Solid waste management

During the operation of the DCT 2 both hazardous waste and other non-hazardous waste will be generated. Waste generated during operation is typical waste from the so-called maintenance of traffic in the area, no manufacturing operations will be conducted which could be the source of waste.

On the basis of the analysis of waste management of the existing Terminal, the authors of the Environmental Impact Assessment Report have assumed the following types and volumes of waste. Volumes are approximate and may differ from real; they have been presented systematically in the table below.

Table D.13 Expected types and volumes of waste produced during operation of the DCT 2

Waste code	Type of waste	Expected volume of waste[Mg/a]
08 01 12	Waste paints and varnishes other than listed in 08 01 11	2.0
08 01 11*	Waste paints and varnishes containing organic solvents or other hazardous substances	3.6
08 01 21*	Remover of paints or varnishes	1.0
08 01 99	Other unlisted waste	80
08 03 18	Waste printer toner other than listed in 08 03 17	0.2
12 01 08*	Waste emulsions and oil solutions from metal treatment containing halogens	1.0
12 01 01	Waste from forming and sawing iron and its alloys	0.3
12 01 03	Waste from forming and sawing non-ferrous metal	0.3
12 01 13	Welding waste	1.0
13 02 05*	Mineral engine, gear and lubricating oils which do not contain halogen-organic compounds	3.0
13 02 08*	Other engine, gear and lubricating oils	70
13 05 01*	Solid waste from sand traps and dehydration of oils in separators	35
13 05 02*	Sludge from dehydration of oils in separators	56
13 05 07*	Oiled water from dehydration of oils in separators	80
13 05 08 *	Mixture of waste from sand traps and dehydration of oils in separators	60

Waste code	Type of waste	Expected volume of waste[Mg/a]
15 01 01	Paper and cardboard packaging	3.0
15 01 02	Plastic packaging	15
15 01 03	Wood packaging	10
15 01 04	Metal packaging	12
15 01 05	Multi-material packaging	8.0
15 01 06	Mixed packaging waste	8.0
15 01 07	Glass packaging	8.0
15 01 09	Textile packaging	6.0
15 01 10*	Packaging containing traces of hazardous substances or contaminated by such substances (e.g. plant pesticides of toxicity class I and II - very toxic and toxic)	8.0
15 02 02*	Sorbents, filtration materials (including oil filters, not included in other groups), fabrics for wiping (e.g. rags, cloths), and protective clothing contaminated with hazardous substances (e.g. PCB)	22
15 02 03	Sorbents, filtration materials, fabrics for wiping (e.g. rags, cloths), and protective clothing other than listed in 15 02 02*	18
16 01 03	Used tires	120
16 01 04*	Used, or not suitable for use vehicles	200
16 01 06	Used, or not suitable for use vehicles which do not contain liquid and other hazardous elements	180
16 01 07*	Oil filters	0.8
16 02 13*	Worn-out devices containing hazardous elements(1) other than listed in 16 02 09 to 16 02 12 (1) hazardous components from electrical and electronic devices include rechargeable accumulators and batteries listed in 16 06 and marked as hazardous, mercury switches, glass from kinescope lamps and other active glass, etc.	0.8
16 02 14	Worn-out devices, other than listed in 16 02 09 to 16 02 13	0.5
16 02 16	Elements removed from worn-out devices other than listed	80
16 06 01*	Lead-containing accumulators and batteries	3.0
16 06 02*	Nickel-cadmium accumulators and batteries	0.3
16 06 04	Alkaline batteries (except for 16 06 03)	0.1
16 06 05	Other batteries and accumulators	0.1
16 07 08*	Waste containing oil or its products	54
16 07 09*	Waste containing other hazardous substances	77
16 07 99	Other unlisted waste	80
16 10 01*	Hydrated liquid waste containing hazardous substances	600
16 81 01*	Waste indicating hazardous properties	45
16 81 02	Waste other than listed in 16 81 01	50
17 02 04	Wood , glass and plastic waste containing or contaminated with hazardous substances (railway sleepers)	88
17 04 05	Iron and steel	90
19 08 02	Content of sand traps	60
19 08 05	Stabilised public waste sediments	30
19 08 09	Fats and mixtures of oils from oil/water separation containing edible oils and fats	6.0
19 08 10*	Fats and mixtures of oils from oil/water other than listed in 19 08 09	10
19 08 13	Sludge containing hazardous substances from other than biological industrial waste water treatment	8.0

** hazardous waste*

The waste listed above is waste typical with a developed market of waste recipients and technologies of its proper processing.

Management of waste from the terminal is exclusive of waste coming from vessels, which use services of the DCT 2. Management of waste from the new investment will be conducted together with management of waste from the operation of the DTC1.

Generated waste will be temporarily collected in the area of the terminal in a selective manner at the designated and described places of storage, in bins or containers. The way of storage will not affect adversely further processes of recovery or disposal. Hazardous waste will be collected in locked bins or containers at especially designed for this purpose hardened and roofed places in order to protect against penetration of harmful substances to the soil and waters

Waste will be transferred for transportation and further processing only to companies that ensure ecological safety. Transport of hazardous waste will be consistent with the European Agreement concerning the International Carriage of Dangerous Goods by Road (ADR).

The application of the above principles will enable limiting the impact of the waste management on the environment and people.

The Port of Gdańsk has "Port Plan for Management of Waste and Loading Residues from Vessels", approved by decision of the Regional Director for Environmental Protection in Gdańsk.

In order to minimise the hazard of contamination of the environment in the case of leakage from a container, the Terminal has a mobile platform – semitrailer in the form of a tank with tight structure, which houses two containers 20'. A tanks is designed especially with two separate tanks able to take over leaks. This semitrailer is in continuous readiness. Responsibility for waste created and damaged goods rests with the owner of cargo (the Administrator).

On the contrary, waste arising as a result of actions related to insulation of leaking container and cleaning of tanks and the tank is the responsibility of a specialist external company, which conducts works for the DCT. The service provider is responsible for waste arising as a result of such a situation.

On the whole, it should be stated that the problem of waste management in the operational phase of the DCT 2 Container Terminal should you solved in accordance with the requirements of law, while types and quantity of generated waste will not cause significant problems with its management. General impact of the waste management on the environment is assessed as **minor adverse**.

D5.3.6 Abnormal operations

Abnormal operations may happen in case of damage of container with hazardous substances. Proper preventive measures will be applied as discussed in previous chapters.

The plant operator, before the commissioning the new DCT2unit, will prepare and approve all of the necessary documents, with the relevant fire protection authorities, technical certification authorities, suppliers of electricity, port authorites etc. In each of these documents there will be a chapter on rights and obligations of both parties in the event of accidents and failures. Proper assessment of all risks, including domino effect with other port facilities, will be prepared in accordance with the insurance requirements.

Physical security and protection against unauthorised access to the site is an additional precautionary tool against any accidents. The fencing of the site and permanent CCTV systems will be installed as well.

Overall risk is assessed to be **minor adverse**.

D5.3.7 Climate change

An assessment of the potential emissions of greenhouse gases from the proposed installation has been undertaken using the EBRD Methodology for Assessment of Greenhouse Gas Emissions (EBRD, 2010). The EBRD assessment methodology focuses on the following:

"… estimate the change in GHG emissions (ΔGHG) brought about by investments. This is the difference between the emissions following the implementation of the project investment and the emissions that would have occurred in its absence. "

Where 'GHG' is 'Greenhouse Gas'.

DCT calls its activities a "Baltic Revolution" which means that:

- Cargo is transported closest to the destination using most effective transport mode which is the ocean vessel.
  - 18000 TEU Triple-E consumes ca. 4,3 l of fuel per TEU per day
  - 15000 TEU Emma Maersk type consumes ca. 10 l of fuel per TEU per day
  - 1500 TEU feeder vessel consumes ca. 40 l of fuel per TEU per day
- 2 TEU truck consumes ca. 180 l of fuel per TEU per day (if driving 9 hrs a day)

The numbers above, although being only a draft calculation, show that building a facility able to cater largest possible vessels closest to the destination, not only for the purpose of lower unit costs for the shipper but also with the benefit for the environment.

Before ocean vessel calls were introduced to DCT, whole Baltic Sea region was served via North Sea hubs and then transported on feeder/road/rail to destinations in CEE. Let's make a short calculation showing fuel consumption benefits when switching from i.e. Rotterdam direct + feeder + truck to Gdansk direct + truck. For the calculation purpose the transit time will remain the same – 32 days, 3000 TEU to be transported in a week. Ocean trip on a Triple-E class vessel. The calculations show the very large benefit of Gdansk. Ship going via Rotterdam should travel less than 13 (!) days from China to Rotterdam to consume less fuel for the same amount of cargo when compared to travelling directly to Gdansk. And that's the benefit of DCT's location when discussing ecological aspects of transport.

DCT wants to assist its customers in reducing fuel consumption and invests money in multiplying its railway capacities. Now ca 35 per cent of containers is transported on rail and the aim is to make this number even bigger.

mode of transport	**capacity (TEU)**	**fuel consumption per TEU per day (l)**	**source**
Triple-E	18000	4,3	http://www.businessweek.com/videos/2013-09-04/worlds-biggest-ship-the-185m-maersk-triple-e
Emma MAERSK	15000	10	http://www.ship-technology.com/projects/emmamaerskcontainers/
feeder	1500	40	*"Advances in Maritime Logistics and Supply Chain Systems"* by **Ek Peng Chew, Loo Hay Lee, Loon Ching Tang**
truck	2	180	Own calculations

trip	**No. of days**	**fuel (t) / 3000 TEU**
China - Rotterdam	29	374,1
Rotterdam - Gdansk	2	240
Gdansk - Krakow	1	540
sum	32	1154,1

trip	**No. of days**	**fuel (t) / 3000 TEU**
China - Gdansk	31	399,9
Gdansk - Krakow	1	540
sum	32	939,9

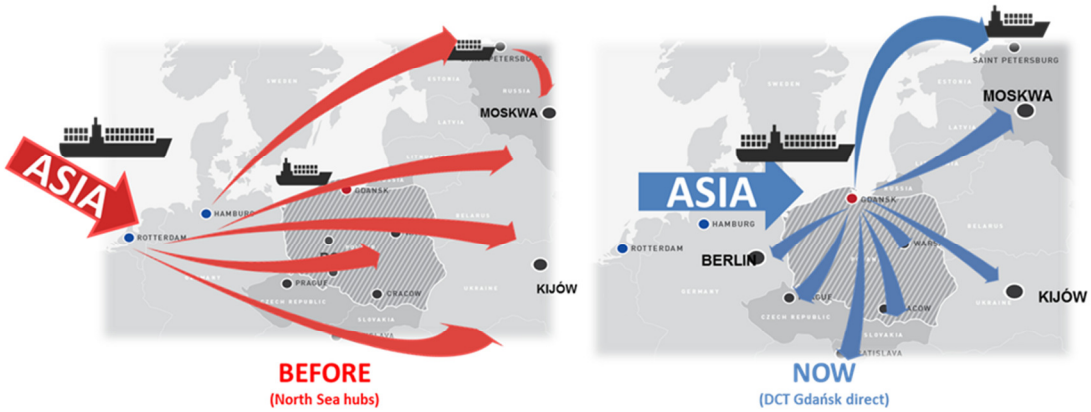


Figure D5-13 Transportation routes before and after construction of the DCT1+DCT2

Table D.14 CO_2 emission reduction for the case discussed above is calculated below

Case: trip China to Krakow	Consumption of fuel (diesel oil) per 3000 TEU (tonnes)	Emission of CO_2 per 3000 TEU (3100 $kgCO_2$/tonne of diesel) ($kgCO_2$)	Emission of CO_2 per 2,500,000 TEU/year (tonnes CO_2/year)
Before construction	1154.1	3,577,710	2,981,425
After construction	939.9	2,913,690	2,428,075
ΔGHG			553,350

Construction of the terminal of the capacity 2,500,000 TEU per year may result in approximate 500,000 tonnes of CO_2 reduction in case that majority of shipments routed from Atlantic Ocean to the cities inside Poland. Key savings are generated on shorter distances of transporation by trucks.

Energy efficient solution

The following energy efficient solutions/technologies are planned for DCT2 operations:

- “Cold-ironing” (alternative maritime power (AMP) / shore power) – technology of electric power supply to the vessels moored in the port (no need for energy production by vessels),
- .layout of storage areas is planned in the way to minimize the distances for transport vehicles (moving of containers). This will decrease fuel and energy consumption.
- DCT 2 will be equipped with transport electrical RTG cranes (rubber tired gantry), which allow for storage of containers one on another, which will be supplied with electric power from the grid (no need to use power generators) instead of diesel engine.

D5.3.8 Soil and minerals

In the operational phase of the terminal no interference in biologically active areas remaining after installation is anticipated. Soil cover is formed artificially (arranged greenery) or subject to natural soil-forming processes.

In case of observing amber in the quantity justifying extraction, it will be extracted at the beginning of the process. In the operational phase of the facility no mineral extraction works will be carried out.

D5.4 Level III Assessment

D5.4.1 Health, Safety and Public Nuisance

This section of the study details the direct potential health and safety impacts associated with the operation of the proposed DCT2. Key issues for consideration associated with the proposed project are as follows:

- high noise levels;
- containers handling;
- containers transportation;
- working at height;
- fire;
- emissions of pollutants to the air;
- chemicals management;
- issues associated unauthorised access and vandalism.

The issues above may be grouped into those which may primarily carry a physical risk to workers, those which carry a physical risk to members of the public but also possibly workers and those which may impact other stakeholders.

Worker Health and Safety

Handling of the containers (loading to ships, transportation within the terminal , loading on trucks or rail etc.) is associated with a number of risks for workers, which may lead to injury and death during the operational phases of the project. In the case of long term exposure, operational activities may also lead to occupational damage / illnesses. Activities with the potential for occupational issues include:

- high noise levels;
- handling of large scale containers;
- transportation of containers;
- storage and servicing of containers;
- operation and servicing the cranes;
- working at height.

Although the activities described above may be classified as high risk, with a significant potential for incident, incidents are largely preventable through the implementation of appropriate management systems and the adherence to the management system requirements by the work force. It is expected that the permanent, operational phase workers associated with the project, including the management, will be familiar with appropriate safety measures for such projects ad will be properly trained and equipped with Personal Protective Equipment. Further, all personnel undertaking hazardous work should be certified to do so and implementation of specific international requirements will be in place for working at height and working in areas where there containers are moved.

In the event that the appropriate measures are implemented, the residual risk is classified as negligible.

Public Health and Safety

Issues which may impact on public health and safety in operational phase of the Project, but which also may impact worker health and safety are associated with:

- Discharge of hazardous substances in case of damage of the container;

- noise and emissions from transportation (trucks and railway);
- high noise levels on site;
- emissions of pollutants to the air from stationery sources;
- issues associated unauthorised access and vandalism.

Rail and truck traffic will be design to avoid densely populated areas. The site will have connection with Sucharskiego street – one of the key transit roads in Gdansk town.

Operational Environmental Management Plan (OEMP) will be developed to manage all standard and emergency situations. The correct operation of the Terminal will be provided, first of all, maintenance and proper service as regards water and waste water management and waste management, as well as maintenance and repair of equipment and devices, proper maintenance of storage facilities and means of transport and correct operation of the transport system (in order to minimise distance to be covered by containers in the area of the terminal).

The area of the terminal is planned in the area of the existing Port. The area will be closed for outsiders. All the people staying within the area of the Terminal are to comply with the terms specified in regulations and internal documents of the Port and the Terminal that define procedures related to safety, notification of possible hazards and monitoring of facilities.

Consequently, the investment does not require additional monitoring in this respect, other than current monitoring in the internal documents of DTC and documents of the Port in Gdańsk and legal national and international regulations concerning shipping of goods and hazardous goods.

Those regulations contain a number of conditions related to safety during the operations of transport and handling of hazardous goods.

In connection with the fact that the Terminal may accept containers containing hazardous substances, such cargoes will be covered by additional means of caution.

The DTC has in place following safety documents:

- Bussines Continuity Plan
- Hazard and Contaminant Combat Plan
- Technological instruction concerning hazardous cargo

Additionally, the Port has in place the Port Facility Protection Plan that additionally envisages procedures in the event of terrorist attack.

Dangerous goods - *IMO Class shipments* transported by sea are subject to the IMDG /International Maritime Dangerous Goods / Code which was prepared as uniform international regulations concerning transport of dangerous goods by sea. The Code specifies selection of containers, the manner of their marking and handling such goods

Transport of dangerous substances on the section from the terminal to the place of destination will be subject to the principles of ADR in vehicle traffic and the principles of RID in railway transport. Responsibility for safe transport and transport safety monitoring will be subject to the procedures of shipping companies and administrators of road and rail infrastructure.

Additionally, in order to ensure public safety in the road traffic the European Commission has developed Guidelines with regard to European good practices of cargo fastening in road transport.

Within the DCT2 Terminal a special storage field will be designated for storage of containers containing liquid substances whose leakage may cause damage to the maritime environment or threat to health of people, including liquid hazardous substances, and technical and technological solutions will be adopted preventing possible penetration of hazardous substances into the environment. The storage field will be equipped with a leachate water or tank with the capacity suitable for these fluids and collected rain water or thaw water, with parameters permitting removal of spilled substances or their leachate waters and directing them for neutralisation in accordance with the procedures specified for waste.

The Terminal will be equipped with tractors with a tank for leaking containers.

The overall Public Health and Safety Impact can be defined as **Minor Adverse**.

D5.4.2 Land and Groundwater Quality

During the operational activities, there will be no pre-planned direct discharges to ground. However, operational activities have the potential to release pollutants to the ground and groundwater as a result of accidental releases. Potential sources of pollution include:

- accidental releases from stored containers with hazardous substances;
- leakages from operating vehicles and machinery.

Surface of the terminal DCT 2 will be practically in the whole hardened and tight. Rain waters will be drained to the sewer system and initially treated. Therefore the risk of contamination of the soil in the case of even substantial spillage is minimal.

Additional organisational and technical measures will be employed to reduce the risk posed by the potential sources of pollutants listed above.

Potentially polluting materials, such as fuels, oils, chemicals and associated liquid waste materials, etc. will be stored in dedicated, segregated storage areas, with spillage protection and appropriate environmental security measures to prevent accidental release to ground during storage.

Procedure for leakage prevention and removal will be developed and included into CEMP. This will include clear rules for storage and handling with hazardous materials.

Under CEMP clear procedures in the case of leaks from containers or vehicles and equipment will be developed.

Impacts on the ground surface and ground water in the operational phase of the terminal are negligible (no change).

D5.4.3 Electromagnetic field

The source of PEM will be transformer station (GPZ) - located in western or southern part of the terminal – and middle voltage 15 kV cable network. Estimated installed power: 55,676 kW.

GPZ station will be located away from residential buildings within fenced area, which will prevent access of unauthorised persons. Preservation of the trade standards eliminates exceeded acceptable intensities of electrical and magnetic field outside the transformer station.

There are no protected areas or requiring special treatment in the surroundings. The closest residential buildings are at a distance of approximately 2 km from the station. The expected volumes of emissions of power the form of noise and electromagnetic field will not exceed acceptable values.

Impact related to 15 kV power cables is not anticipated, either.

D6 Closure and Decommissioning Impacts

D6.1 Introduction to Closure and Decommissioning Impacts

For the purpose of this assessment, no issues relating to closure and decommissioning of the proposed DCT have been assessed in significant detail. The potential for impact during decommissioning is similar to those of construction activities. The key issues are potentially:

- noise;
- traffic and transport;
- socio-economic Impacts;
- health, safety and public nuisance;
- solid waste management.

The following sections provide an assessment of the potential impacts of the project activities during the closure and decommissioning phase of the project. A summary of the impacts, management and mitigation measures and residual effects is presented in Section E.

D6.2 Noise

Decommissioning Activities

Decommissioning activities are expected to generate similar noise levels to the construction activities, and similar noise significance levels would apply. The majority of plant expected to be used for decommissioning would be of sufficiently low noise levels not to significantly affect the nearby noise sensitive receptors.

Decommissioning Traffic

Similarly to the construction activities, there would be a number of vehicle movements associated with the decommissioning, and dependent on the routes that the vehicles take to get to the site, there will be increases in noise arising from increased traffic.

Properties within a few metres of a road with increased traffic flows may also be affected by an increase in groundborne vibration, particularly from heavy vehicles when there are irregularities in the road surface.

D6.3 Traffic and Transport

Traffic and transport impacts during the decommissioning phase are likely to be very similar to the construction phase. As with the construction phase, appropriate management and mitigation measures should be implemented to prevent disruption or nuisance. If appropriate management and mitigation measures are implemented as detailed in the construction, then the residual impact should be **minor adverse**, rising to moderate if appropriate management and mitigation measures are not implemented.

D6.4 Solid Waste Management

The waste management system, frequency of removal, selection of recipients, segregation are responsibilities of the Administrative section – Administration Manager.

The Company does not have a formal waste management system. Waste management is conducted according to the principles specified in the Act on Waste. Control of the quantity of generated waste is based on record documents, waste transfer sheet and record sheets.

At the present time, it is not possible to indicate the date of demolition of the planned investment. The demolition phase will be connected with demolition of ground infrastructure, dismantling of hoisting devices and overhead cranes. This phase will be close to the phase of its construction. Works will be performed in accordance with requirements of the Act - Building Law and in accordance with principles of the Act on Waste, valid at that time.

Significant amount of solid waste including scrap metal, construction debris, used electric and electronic equipment, used oils etc. will be generated during closure and demolition works. A detailed waste management and disposal programme needs to be developed along with identification of place and methods of waste utilisation and/or landfilling. Reusable parts and materials need to be reused to the maximum extent possible.

Assuming that a proper waste management programme is developed and implemented an overall residual impact can be assessed as negligible.

D6.5 Socio-Economic Impacts

In summary, impacts on livelihoods and employment and procurement opportunities, include the following:

- reduction of pollutants emission due to plant closure - this impact is assessed as **beneficial**;

- loss of employment. In case that the installation is not replaced by a new one, the loss of locally important employment may have significant impact on local community and their ability to keep the standard of living unchanged. This impact is assessed as **adverse**;
- opportunity for decommissioning related works like demolition, disposal of materials and waste, etc. may occur for local enterprisers. This impact is assessed as **beneficial** however short term;
- loss of maintenance services opportunities. This impact is assessed as **adverse.**

D6.6 Health and Safety

In general, the health and safety risks to workers and the community from decommissioning activities will be similar to those during the construction phase.

The Project will be designed to reduce potential risks during its decommissioning. This is typically done by ensuring that a design risk register is kept and maintained through the design process, allowing potential risks that can arise during decommissioning to be identified and addressed in the design process. For example, the use of hazardous materials in construction that could lead to health and safety risks during decommissioning will be avoided wherever possible.

Upon closure of the site, inspections will be undertaken to ensure that contamination of the ground has not taken place during the operational phase, and that measures put in place during the design and construction phases have been successful for the protection of the ground, surface water and groundwater at the site.

It will be important that documentation is maintained during the operational phase that shows that any incidents or accidents have been managed and cleaned up to ensure that no significant contamination has been caused that could lead to health and safety risks during decommissioning.

D7 Transboundary impacts

The scope of the planned project and the scale of its identified environmental impact enables concluding that the planned project will not cause transboundary environmental impacts, in respect of which the procedure concerning the environmental impact assessment in the transboundary context was not conducted.

E Summary of Impacts, Management and Mitigation

E1 Introduction

The following sections outline the management and mitigation requirements associated the potential and actual impacts identified throughout the project phases. The impact once management and mitigation measures are applied is termed the 'residual impact'.

The management and mitigation measures identified should be detailed in appropriate plans, applicable to the phase of the project. This is standard practice for all major projects. For example, in terms of 'environment' the appropriate plans would be as follows:

- construction - Construction Environmental Management Plan (CEMP)
- operations - Operational Environmental Management Plan (OEMP)
- closure and decommissioning - Decommissioning Environmental Management Plan (DEMP)

The plans should remain up to date and accurate based on the activities to be undertaken at the project site. The plans should encompass all of the issues described in the following sections, as well as any other requirements required by the local regulatory authorities. The plans should include detail of how management and mitigation shall be undertaken for each issue and should be approved by the appropriate regulatory parties and any other pertinent stakeholders, such as investment banks.

The implementation of the plans should be through a robust Integrated Management System (IMS), incorporating the requirements of environmental, health and safety, as well as any other requirements of the business and its stakeholders, including issues associated with members of the public. In terms of the requirements detailed in this Statement as well as other requirements delineated by the Investment Bank(s), the management system can be called an 'Environmental and Social Management System (ESMS)'.

E2 Impact Summary

The following Sections provide a summary of the impact assessment, the management and mitigation measures and the 'Residual Impact' once the management and mitigation measures have been applied.

The residual impact is summarised as a simple graduate scale from positive benefits down to negative impacts as follows:

- Substantial Beneficial
- Moderate Beneficial
- Minor Beneficial
- Negligible Beneficial

Beneficial

- No Change

- Negligible Adverse
- Minor Adverse
- Moderate Adverse
- Significant Adverse

Adverse

Where the summary of the impact is variable, such as where the impact is variable over a number of individual receptors, this can be expressed as a band of potential impacts. For

example, a air emission impact may be dependent on the position/location of individual receptors. In such a case, the impact may include:

- No change
- Negligible Adverse
- Minor Adverse
- Moderate Adverse

Rather than list each of the potential impact levels, the residual impact will be expressed as 'No Change - Moderate Adverse', where the impacts include would include *No Change, Moderate Adverse* and those in between (i.e. *Negligible Adverse and Minor Adverse*).

The following summaries are divided in to the three phases of the project; Construction; Operations; and, Closure and Decommissioning. Within each section the impacts, associated management and mitigation measures and residual impacts are presented in the same order as the impacts are presented in Section D. That is, with the key potential impacts associated with each phase of the project, followed by less significant issues.

E3 Summary of Construction Phase Impacts and Control Measures

Impact	Proposed Control Measure	Residual Impact	Residual Impact Rating
ECOLOGY & NATURE CONSERVATION			
Impact on valuable habitats and species during construction works at the DCT2 location, along access roads and railway. Animals can be directly affected by construction works.	Biodiversity procedures for construction works will be developed. It will include in particular: - protection of terrestrial habitats, protection of water reservoirs, prevention of small animals falling into the excavations, protection of trees from damage by heavy equipment, etc. Biodiversity issues will be included into the CEMP.	Measures and procedures to prevent significant loss to local ecology are in place.	**Minor Adverse**
Destruction of the habitats of protected species of birds (being subject of interests of European Community)	Compensatory actions for the Little Tern *(Sternula albifrons)* and Common Ringed Plover *(Charadrius hiaticula).* Actions to mitigate the impact of the project on the Common Merganser (*Mergus merganser*) Actions to mitigate the impact of the project on the Common Shelduck *(Tadorna tadorna)*	Implementation of the actions described by Environmental Consent Decision will allow to compensate irreversible losses in nature.	**Significant Adverse**

Impact	Proposed Control Measure	Residual Impact	Residual Impact Rating
Impact on the nearby colony of rybitwa białoczelna (*Sternula albifrons*)	All the dredging conducted at a distance below 200 m from the Common Tern breeding colony at the Ore Pier should be performed solely within the 1 September to 31 March period, excluding the breeding season (that is, not during the 1 April to 31 August period). In the birds breeding season (that is, in the 1 April to 31 August period) the movement of watercraft should be conducted within a distance of at least 100 m from the Common Tern colony on the Ore Pier and introduce a prohibition on mooring at the Ore Pier of any watercraft and floating machinery within a distance of 100 m from the Common Tern colony. To maintain an appropriate distance from the conducted works, the restricted area should be marked at a distance of 200 and 100 m from the colony with floating buoys or in a different, adequate method.	Implementation of the actions described by Environmental Consent Decision will allow to mitigate and compensate irreversible losses in nature.	**Significant Adverse**

Impact	Proposed Control Measure	Residual Impact	Residual Impact Rating
Impact on birds nesting areas	The felling of all the shrubs and trees within the construction site should be conducted outside the breeding season - i.e. outside the 1 March to 31 August time window. During the construction works, in a period of 1 March to 31 July within the construction area actions should be taken to prevent the establishment of breeding sites by birds, by dislodging them and conducting possible other steps in this direction, in accordance with the permits obtained pursuant to separate regulations. In case of dredging and other works directly related to the construction of the Terminal quay, conducted during the breeding season (April-August), the supervision of an ornithologist should be ensured. The expected loss of bird breeding sites should be compensated by the installation of nest boxes for smaller species as well as the planting of trees and shrubs within the investment area.	Implementation of the actions described by Environmental Consent Decision will allow to mitigate and compensate irreversible losses in nature.	**Significant Adverse**

Impact	Proposed Control Measure	Residual Impact	Residual Impact Rating
Destruction or significant impact on bats colonies in former military bunkers	Demolition of former shelters which are bat hibernation sites should be conducted between 1 April and 31 October, that is, outside the hibernation period (November - end of March). Alternative wintering sites should be created, by adapting the post-military shelters existing in the vicinity for the needs of bat hibernation If the adaptation of existing facilities in not feasible, new facilities should be erected to provide an alternative overwintering shelter for bats, under the direction of an ornithologist.	Implementation of the actions described by Environmental Consent Decision will allow to mitigate and compensate irreversible losses in nature.	**Significant Adverse**
Destruction of the habitats of valuable species of plants	Conducting meta-planting of all protected species is envisaged prior to the launch of construction works. The species concerned include: sea holly (*Eryngium maritimum*), dwarf everlast (*Helichrysum arenarium*), Royal Helleborine (*Epipactis atrorubens*), sand sedge (*Carex arenaria*), common restharrow (*Ononis repens*), Sea Aster (*Aster tripolium*). The species will be transplanted from the project site to locations indicated in the environmental requirements decision.	Implementation of the actions described by Environmental Consent Decision will allow to mitigate and compensate irreversible losses in nature.	**Significant Adverse**

Impact	Proposed Control Measure	Residual Impact	Residual Impact Rating
Damage to animals entering the construction site, scaring off of animals	Construction works should be conducted strictly in accordance with the schedule, so as not to delay them, which will reduce the time of frightening of the animals and potential collisions; Secure construction ditches against pollutant incursion associated with the construction works, leaving any pollutants within the ditch is unacceptable. Before commencing the construction works, the construction site should be protected against penetration of animals to the area. The protection measures should primarily apply to deep excavations which may become traps for animals. If animals trapped at the project site are identified (e.g. amphibians or small mammals in excavations), they should be captured and taken to a safe place, to their habitats, upon being granted the relevant permits specified under separate regulations, if apply.		**Minor Adverse**
Impact on insects	Empty beverage bottles left behind by personnel should be removed from the construction site daily, as they constitute traps for insects.		**Minor Adverse**

Impact	Proposed Control Measure	Residual Impact	Residual Impact Rating
Impact on amphibians	Earth works (levelling, filling up or drying) within the area of wet areas and reservoirs, which form amphibian habitats, should be performed outside of the amphibian reproductive period (that is, outside of the 1 March to 31 July period) after the juvenile forms leave the habitat. Before commencing these works move the remaining amphibian individuals from the biotopes they occupy within the construction area to similar hydrogenic habitats located in the vicinity, in accordance with the conditions of permits obtained pursuant to separate regulations. The displacement of amphibians should be performed within the area of small waterholes in the vicinity of the eastern part of Pusty Staw (within Stogi area — these areas are located within forest areas, approx. 2.2 to 2.6 km to south-east from the planned location of the enterprise);		**Minor Adverse**
Damage to the trees by operating construction equipment	Earthworks should be carried out manually in close vicinity to trees not scheduled for cutting (up to 10 metres from such trees); Trees close to the construction work locations which are not scheduled for cutting should be protected against mechanical damage by using wooden covers		**Minor Adverse**
MARINE ENVIRONMENT			
The construction works in the marine area related to construction of the pierce can cause	The adopted technology for construction works associated with		**Minor Adverse**

Impact	Proposed Control Measure	Residual Impact	Residual Impact Rating
threat to marine environment (suspended solids, oils etc.)	land reclamation from a maritime area as well as deepening the port basin which should protect sea waters against solid and liquid waste pollution. During hydrotechnic works oil-based substance leaks should be prevented, and in the event of emergencies their rapid and effective removal from the basin surface should be ensured Performance of hydrotechnical works may not infringe on the safety of maritime traffic; Construction works within the sea area should be performed using equipment and machinery in a good condition, regularly inspected.		
Operation of ships and floating equipment in construction area may cause pollution of sea marine environment	Watercraft should be equipped with sorbents or other substances for the removal of incidental oil based substance leaks; All pollution from units performing construction works should be discharged into designated port facilities.		**Minor Adverse**
Waste from dredging operations may be contaminated and cause threat to environment	The spoil from the area of required dredging, depending on the lithology and purity of the sea bottom sediments should be stored either on the sea dump site indicated by the Gdynia Maritime Office or for shore resilting in the area of the planned quay. Upon completion of works all pollution from the bottom which might have occurred during construction should be		**Minor Adverse**

Impact	Proposed Control Measure	Residual Impact	Residual Impact Rating
	removed;		
LANDSCAPE AND VISUAL IMPACT			
Construction works cause adverse visual impact connected with construction works, traffic, dusting, noise etc.	Visual aspects will be included into the CEMP. It will include both main DCT2 location an well as connected investments (road, railway etc.).	View to construction area is limited, the site is well organised.	**Negligible Adverse**
TRAFFIC AND TRANSPORT			
Visual impact. Heavy vehicles can cause nuisance to local inhabitants due to noise and dusting Auxiliary investments: Sucharski[5] road upgrade and extension (subject of separate EIA and permitting procedure Traffic causes damage to material goods. Wildlife can be scared off. Local traffic can be paralysed by additional trucks on local roads.	Traffic plan for construction phase will be developed and agreed with local community and Port Authority. Local communities will be informed and updated about changes in local traffic patterns.	Additional traffic is visible in nearby populated areas, but causes limited nuisance to inhabitants and does not cause significant limitations for local drivers.	**Moderate Adverse**
SOLID WASTE MANAGEMENT			
Raw materials cause significant nuisance if improperly stored	Construction materials should be delivered in batches, the size of which is necessary to conduct construction works; if possible avoid long-term storage of the materials in question		**Minor Negligible**
Solid waste can cause significant nuisance and danger if improperly stored	Within the construction site areas for the storage of materials and products and storage of waste should be		**Minor Negligible**

[5] Sucharski Road is a part of European roads E75 and E77 – connects DCT and North Port with South Bypass of Gdansk and Polish road network including High Speed Road S7 and A1 Highway

Impact	Proposed Control Measure	Residual Impact	Residual Impact Rating
	established, compacted and drained. During the construction period all the waste should be selectively collected in containers or in a separate location with easy access for waste utilisation companies. Hazardous waste should be stored in leakproof, closed and marked containers; The waste storage location should be established in the Construction site development plan, marked and protect against access by unauthorised persons		
DREDGED MATERIAL MANAGEMENT			
Dredged sediment may be qualified as contaminated , and therefore placing it on a regular managed sea disposal site may not be possible.	Provide procedure of testing aggradate muds from dredging before placing it on a dump. Specify the principles of handling contaminated output.	Output will be managed in a manner safe to the environment and as required by law.	**Minor Adverse**
NOISE AND VIBRATION			
Noise impact from construction works and associated heavy traffic causes significant nuisance to local inhabitants including health deterioration.	Construction works and heavy transportation routes will be planned in order to avoid direct noise or vibration impact on residential area. If necessary the works or transportation will be limited or not undertaken in the night time. Install noise screens and reconstruct the roads surface if necessary. Ensure that devices which emit high intensity noise, if possible, do not operate simultaneously, and during	Noise and vibrations are at the acceptable level.	**Minor Adverse**

Impact	Proposed Control Measure	Residual Impact	Residual Impact Rating
	breaks in operations the devices and machinery should not be idling		
SOCIO-ECONOMIC IMPACTS			
Local community will face the opportunities connected with new investment as well as risk related to the inflow of significant number of workers to the town. This may lead to tension and conflicts.	Stakeholder Engagement Plan has been developed to inform local community about potential impacts, risk and opportunities.	Local community is well prepared to face risks and use opportunities.	**Negligible Adverse**
HEALTH, SAFETY AND PUBLIC NUISANCE			
Transportation of materials in lorries can cause dusting and contamination of local roads	Ensure that the environmental impact of the project is minimised, from the point of view of air pollution protection. Particular attention should be paid to minimise fugitive emissions of dusts and gasses associated with transport (vehicle operation) and fugitive emissions associated with operations of machinery at the construction site. To that end the construction site schedule should be adhered to and appropriate work organisation should be ensured. Delivered and transported soils and building materials are to be protected against occurrence of dust by ensuring appropriate humidity or tarpaulin cover; use the existing network of public roads for transport purposes; Temporary access roads are to include drainage. They should be made of removable elements which do not pollute the environment;		**Negligible Adverse**

Impact	Proposed Control Measure	Residual Impact	Residual Impact Rating
	Clean vehicles leaving the construction site to protect against polluting public roads; a separate station should be assigned for this purpose within the construction area, equipped with appropriate washing devices or construct a temporary vehicle wheel washer. Adapt traffic safety procedures already implemented at DCT1.		
Increased amount of sanitary waste water and waste	The construction site facilities and the works site are to be equipped with required sanitary facilities and staff social space: ensure regular collection of wastes by authorised entities.		**Negligible Adverse**
Occupation of land for construction purposes, storage, parkings etc.	During the entire investment process the principle of using and transforming the area sparingly should be obeyed, and after the works are finished the area should be cleaned.		**Negligible Adverse**
LAND AND GROUNDWATER QUALITY			
Soil excavated during construction works may occur to be contaminated by as a result of historical activities in the area and cause threat to workers and, if improperly disposed - to the community	Ground contamination tests will be performed prior to excavations. The procedure for dealing with contaminated soil will be developed and included into CEMP. If presence of pollutants shall be determined during performance of earth works, soils samples should be tested in accordance with the methodology as prescribed by the law on soil quality and if those standards are exceeded, they should be treated as waste and subject to utilization as	Ground if found contaminated is properly treated and disposed. No threat to human health or environment occurs.	**Negligible Adverse**

Impact	Proposed Control Measure	Residual Impact	Residual Impact Rating
	prescribed by regulation on waste, outside of the investment site		
Difficult geological conditions can cause a risk to workers and the environment	Ensure geological supervision of earth works;		**Negligible Adverse**
Accidental release of hazardous substances to the ground may lead to serious ground and ground water contamination	Procedure for leakage prevention and removal will be developed and included into CEMP. This will include clear rules for storage and handling with hazardous materials. Equip the construction site with sorbents of other substances for the removal of incidental oil based substance leaks Places for the storage of driving oil, permanent parking of construction equipment and construction equipment refuelling should be additionally protected against the possibility of pollution of the soil and water, and equipped with sorbents and other technical equipment to conduct possible removal operations Repairs to construction machinery at the constriction site are forbidden.	Spills into the ground does not occur. If accidental release takes place it is properly treated and the ground remediated.	**Negligible Adverse**
Destruction of fertile soil in construction area	Fertile soil layers shall be removed from the surface of digs, foundations and other earth works should be used in the first place for recreating a biologically active surface within the planned Terminal and the remains within the area of the facility or other port areas:		**Negligible Adverse**
SURFACE WATER AND EFFLUENT			

Impact	Proposed Control Measure	Residual Impact	Residual Impact Rating
Runoffs of water from excavations (silty and contaminated) as well as storm water from construction area may cause significant contamination of surface water receiver.	All runoffs and storm water will be locally treated (sedimentation and oil separation). Proper control procedures will be included in CEMP.	Water discharges does not influence the quality of water is the reservoirs. Accidental releases are properly controlled and mitigated.	**Minor Adverse**
CULTURAL HERITAGE AND ARCHAEOLOGY			
Unknown valuable archaeological sites may be destroyed during construction works of DCT2 and connected roads and railway.	Archaeology survey will be undertaken to check possible hot spot areas.	Archaeological sites (if found) are properly assessed and explored.	**Minor Beneficial**
As above	During dredging and earth works constant archeological supervision should be provided, in order to preserve archeological monuments		**Minor Beneficial**
AIR EMISSIONS			
Construction works and transportation can cause significant fugitive dust emission and serious nuisance both to workers and local inhabitants.	The procedure for fugitive air emission control including roads spraying and rules for dusty materials storage and transportation will be included into CEMP.	Fugitive dust emission do not cause any significant nuisance.	**Minor Adverse**
Enhanced traffic (noise and dust emission) investment aiming in upgrade of access road: the complementary investment being subject of separate assessment and decisions/permitting procedures	Determined in dedicated environmental permits for supplementary investments		

E4 Summary of Operational Phase Impacts and Mitigation Measures

Impact	Proposed Control Measure	Residual Impact	Residual Impact Rating
DREDGING OPERATIONS			
Output from dredging works may be contaminated to the extent preventing its storage on a dump.	Provide procedure of testing aggradate muds from dredging before placing on a dump. Specify the principles of handling contaminated output.	Output will be managed in a manner safe to the environment and as required by law.	**Minor Adverse**
AIR EMISSIONS			
Generation of heat.	For the purposes of heating and hot tap water, design low-emission heat sources		**Negligible Adverse**
Supply of electric energy to a vessel moored in the port, instead of producing electricity for own needs during stop in the port using own electric power generators supplied with fuel oil will contribute to reducing emission of dusts and gases and will result in smaller noise emission to the environment	The design should envisage the application of new technology of energy supply to the moored vessels, the so-called. cold ironing (other designations: alternative maritime Power (AMP), or shore power) for vessels, which will be adapted to this type of power supply technology.		**Negligible Adverse**
Air emissions will be generated by transportation means directly (liquid or gas fuels) or indirectly (consumption of electricity)	When designing the arrangement of storage yards, entry-exit locations and the railway siding, consider the need to minimise the distance to be covered by any vehicles so that containers would be displaced within as short sections as possible, which, in turn, has a direct impact on the reduced consumption of fuels and energy and related reduction in the emission volume (dust, gases and noise)		**Negligible Adverse**

Impact	Proposed Control Measure	Residual Impact	Residual Impact Rating
Local energy generation will cause air and noise emissions	When planning devices for the DCT 2, including overhead cranes, prefer electric power supplied from the network to a devices, rather than produced by generators placed directly on a device , which has a direct impact on reduction in the consumption of fuels and energy and related reduction in the volume of emissions (dusts, gases and noise);		**Negligible Adverse**
NOISE AND VIBRATION			
The new terminal causes significant noise nuisance to local population.	The design of the DCT2 unit will take into account noise modeling results. The sound power levels of the equipment as well as insulation of walls will be approved only if expected noise levels will be acceptable and compliant will legal requirements.	Noise emissions from the plant are acceptable to local community.	**Negligible Adverse**
SURFACE WATER AND EFFLUENT			
Discharge of storm water from new DCT2 site will be treated in storm water treatment facilities. Discharge of storm water from new DCT2 site can cause coastal water contamination	Rain waters and thaw waters from the Terminal should be drained to the storm water drainage system and drained to marine waters after initial treatment in settling tanks and separators of oil derivatives Devices used to initial treatment of rain waters should be maintained in due technical condition by regularly conducted maintenance activities and cleaning; generating deposits and sludge should be transferred to authorised entities to be processed or neutralisation	Surface water quality is not deteriorated by storm water discharged from the site.	**Minor Adverse**

Impact	Proposed Control Measure	Residual Impact	Residual Impact Rating
Accidental leakages from containers may significantly influence the quality of storm water discharges.	The new site will be equipped in local storm water treatment including oil separator.	Surface water quality is not deteriorated by storm water discharged from the plant.	**Minor Adverse**
ECOLOGY AND NATURE CONSERVATION			
Taking into account the presence of birds nesting areas in the vicinity of the site, green areas can become as element of local biotop	The MPZP provisions order preservation of minimum 10 biologically active surfaces At the point of contact with forest areas minimum 15 m buffer greenery strip with species compliant with local habitat conditions The greenery management plan, when planning new plantings, foresee biotope-forming plants, constituting the food base for birds, including consider incorporation of the following species to plantings: mountain ash Sorbus aucuparia and common whitebeam S. aria, viburnum Vibumum Sp, hawthorn Cralaegus Sp, cornel morel Cornus masses, black hel Sambucus nigra: exclude plantings of expansive foreign species: The greenery management plan should favour compensatory plantings of trees and shrubs removed in connection with the execution of the project, specifying their location as close as possible to the project area:	no	**Negligible Beneficail**
LANDSCAPE AND VISUAL IMPACT			
New tall structures will cause adverse visual impact for local inhabitants and tourists.	Technical design will propose a list of measures to soften visual impact of new installations.	The view of new installation is acceptable both for locals and tourists. – due to specificity of	**Minor Adverse**

Impact	Proposed Control Measure	Residual Impact	Residual Impact Rating
		industrial area	
Collissions of birds with tall cranes and lightening structures may occur. Light pollution in nighttime may occur.(but proximity of other industrial areas and large city makes it less significant)	Lighting of devices and high facilities (light colour, direction of illumination, type of source) within the Terminal, which can be the cause of collision with birds should be designed in consultation with expert – ornithologist	Risk of accident minimal	**Minor Adverse**
SOCIO-ECONOMIC IMPACTS			
New DCT2 unit will provide new workplaces and opportunities for additional services. 1600 new workplaces, 16 000 workplaces in auxiliary businesses	-	-	**Substantial Beneficial**
HEALTH, SAFETY AND PUBLIC NUISANCE			
Operation of the new DCT2 unit can be a source of accident and occupational disease risks.	All Occupational Health and Safety requirements of local law will be implemented. OHS management system including operating procedures for workers and subcontractors will be implements.	Occupational risk are controlled and mitigated. Proper preventive measures are implemented.	**Minor Adverse**
Local community can be affected by air emissions, noise or waste water discharges.	Technical design will include technical solutions necessary to reduce emissions to acceptable levels.	Nuisance to the community does not change comparing to current situation.	**No change**
Local community can be affected in case of fire or other emergency situation	Detailed fire, explosion and chemical emergency plans and procedures will be developed and agreed with fire fighting units and municipality.	In case of emergency proper actions will be undertaken and the community will be informed.	**Moderate Adverse**

Impact	Proposed Control Measure	Residual Impact	Residual Impact Rating
Damage of the container containing hazardous materials can cause significant threat of hazardous air emission and leakage of hazardous substances to the sea	Develop and implement procedures in the case of leakage from a container with hazardous cargo, taking into consideration the need for neutralisation of the released cargo and its separation from the external environment In the case of observing leakage from a container with hazardous cargo, this container should be put additionally in a tank, in order to collect leachate water. The collected leachate water should be treated as waste, collected and transferred to authorised entities to be processed Provide equipment of the Terminal in devices and means used for removing the effects of possible emergencies		**Minor Adverse**

Impact	Proposed Control Measure	Residual Impact	Residual Impact Rating
As above	Determine in the building design within Terminal T2 a special storage field for storage of containers containing liquid substances whose leakage may cause damage to the sea environment, including liquid hazardous substances and assume technical and technological solutions excluding possible penetration of hazardous substances to the sea environment: the aforementioned storage field should be equipped with a leachate water well or tank with appropriate capacity for these fluid and collected rain water or thaw waters, with parameters allowing removal of spilled substances or their leachate waters and directing it to neutralisation in accordance with the procedures specified for waste		**Minor Adverse**
As above	Consider equipment of the Terminal in tractors with a tank for leaking containers		**Minor Adverse**
Leakages from the containers can contaminate storm water	Upon putting the Terminal into operation, implement a procedure in the event of penetration of hazardous substances (as a result of leakage, etc. situations) from cargo transported by containers to the storm water drainage system, i.e. ensure that rain waters contaminated with these substances will not be drained to the port basin		**Minor Adverse**

Impact	Proposed Control Measure	Residual Impact	Residual Impact Rating
As above	Develop Operational Environmental Management Plan (OEMP). Provide correct operation of the Terminal, first of all, maintenance and proper service as regards water and sewage management and waste management, as well as maintenance and repair of equipment and devices, proper maintenance of storage facilities and means of transport, and correct operation of the transport system		**Minor Adverse**
Waste water and solid waste from the ships can contaminate marine waters	Waste waters and waste from vessels should be transferred to port receiving devices		**Minor Adverse**
TRAFFIC AND TRANSPORT			
~~No significant impacts related to the transport of goods or persons is expected~~. Significant increase of goods transport is expected due to DCT2 operation (increase by 2,5 mln TU)	Develop Transport Management Plan. Use new public roads prepared for greater number of vehicles.	-	**Minor Adverse**
LAND AND GROUNDWATER QUALITY			
Accidental release of hazardous substances to the ground may lead to serious ground and ground water contamination	Procedure for leakage prevention and removal will be developed and included into CEMP. This will include clear rules for storage and handling with hazardous materials.	Spills into the ground does not occur. If accidental release takes place it is properly treated and the ground remediated.	**No Change**
As above	Specify procedure in the event of penetration of hazardous substances (as a result of leakage, etc. situations) from cargo transported by containers to the storm water drainage; the		

Impact	Proposed Control Measure	Residual Impact	Residual Impact Rating
	procedure should include actions at the source of leakage as well as prevent the substances that already penetrated the storm water drainage from spreading		
SOLID WASTE			
Solid waste can cause serious impact to the environment if disposed improperly.	Solid waste management rules for workers and subcontractors will be included into company's OEMP.	No waste is disposed illegally.	**No Change**
As above	Generated waste should be gathered in a selective manner at separated and especially adapted purposes. in the conditions preventing penetrating harmful substances from penetrating to the environment and provide their efficient reception or manage in the area		
Periodical dredging operations in the port approach can be a source of contaminated material	Design the methods of handling contaminated masses from dredging of water tracks		
Periodical dredging operations in the port approach can be a source of inert material that can be reused	Specify the method of handling output from dredging works, taking into consideration its maximum use		
MARINE ENVIRONMENT			
Current operations may cause pollution of marine environment	Technology of construction works and hydrotechnical works must take into account the need to protect marine waters against contamination with liquid and solid waste		**Medium Adverse**
Current operations may cause pollution of marine environment by effluents from vessels	Current supervision and control of port authorities (supervision, monitoring	Low probability of occurence	**Minor Adverse**

Impact	Proposed Control Measure	Residual Impact	Residual Impact Rating
	and enforcement)		
Risk of alien species dispersion by exchange of ballast water	Current supervision and control of port authorities (supervision, monitoring and enforcement	Low risk of alien species dispersion	**Minor Adverse**
ABNORMAL OPERATIONS			
Fire or other emergency situation can lead to serious threat to the workers, local environment and community	Detailed fire, explosion and chemical emergency plans and procedures will be developed and agreed with fire fighting units and municipality.	In case of emergency proper actions will be undertaken and the community will be informed.	**Medium Adverse**
Spillage can lead to serious threat to sea environment	Indicate the procedure in case of incidental leakage of petrol derivatives, including indicate necessary means and procedures for their removal from the water surface,		

E5 Summary of Decommissioning Phase Impacts and Control Measures

Impact	Proposed Control Measure	Residual Impact	Residual Impact Rating
NOISE AND VIBRATION			
Noise impact from demolition works and associated heavy traffic causes significant nuisance to local inhabitants including health deterioration.	The noise model for demolition works and transportation will be developed. If necessary the works or transportation will be limited in the night time.	Noise and vibrations are at the acceptable level.	**Minor Adverse**
TRAFFIC & TRANSPORT			
Heavy vehicles can cause nuisance to local inhabitants due to noise and dusting. Traffic causes damage to material goods. Wildlife can	Traffic plan for demolition phase will be developed and agreed with local communities and Port Authority.	Additional traffic is visible in the town, but causes limited nuisance to inhabitants and does not cause significant limitations for local	**Minor Adverse**

Impact	Proposed Control Measure	Residual Impact	Residual Impact Rating
be scared off. Local traffic can be paralyzed by additional trucks on local roads.	Roads will be restored after completion of the demolition activities.	drivers.	
SOLID WASTE MANAGEMENT			
Significant amount of solid waste will be generated during demolition works. There is a risk that solid waste materials will not be effectively disposed or landfilled.	Waste management program for decommissioning period will be developed. Waste management procedures will be included into DEMP.	Solid waste is effectively and legally disposed or landfilled. No threat to the environment is caused by the waste generated in decommisioning period.	**No Change**
SOCIO-ECONOMIC IMPACTS			
Local community will face significant risk related to the loss of work places and other business opportunities. Opportunities related to demolition works itself will not balance the loss.	Stakeholder Engagement Plan will be developed to inform local community about potential impacts, risk and opportunities.	Local community is well prepared to face risks and use opportunities.	**Major Adverse**
HEALTH, SAFETY AND PUBLIC NUISANCE			
Increase of number of people in the town and traffic, however temporary, may lead to problems with traffic jams, insufficient medical or law enforcement services.	In cooperation with local municipality, a program of adaptation of local infrastructure and services to the expected situation during the construction period will be developed and implemented. It will be included into DEMP.	No significant change to living condition in the town including access to the services.	**No Change**

Decommissioning waste will occur at the end of the technical age of DCT2 plant. Typical costs of the decommissioning are expected to be around 15 % of the construction costs of the edifices. Due to the fact that materials from this process will be recycled, no significant impact on environment is expected. No asbestos waste will be generated.

F Monitoring Programme

F1 Air Emissions

No air emission monitoring is required.

F2 Noise

It is not proposed to undertake noise monitoring during the construction phase of the project.

It is proposed to undertake post-construction monitoring. The aim of this will be to assess (before commissioning) the efficiency of noise reduction measures that are implemented and to confirm that the acoustic power level of installation and its parts are within prescribed limits.

After putting the DCT 2 Terminal into operation, conduct noise measurements in order to determine the real range of acoustic impact and compare the calculated equivalent of A sound level with the actually occurring impacts of noise at the eastern, northern, southern and western boundary of the terminal and towards the nearest residential buildings of the neighborhood of Stogi. Noise measurement should be conducted in time of the day and night in major directions of noise propagation from DCT 1 and DCT 2. The measurement should be conducted within 6 months from the date of putting the facility into operation.

In the event that noise appears to be causing a nuisance during operation, amendments to the noise management programme will be implemented.

F3 Traffic and Transport

We expect that the transport management procedures will include an audit process to ensure that construction traffic is using appropriate transport routes.

In the operational phase it is it is proposed to undertake noise, vibration and dust measurements to assess the level of impact of transportation on nearby living areas.

The results will be used to determine and implement proper mitigation measures.

F4 Socio-Economic

Complaints and grievances submitted through the Project grievance mechanism will be regularly monitored. Feedback received from various Project stakeholders will alert DCT2 of any problems or issues that need to be addressed, whether on an individual or community level. Grievance management itself needs to be monitored to ensure that all received complaints are addressed as described in the Project SEP. This also pertains to workers' grievances.

F5 Landscape and Visual Impact

No monitoring is required.

F6 Health, Safety and Public Nuisance

No monitoring is required.

F7 Surface Water, Effluent and Land and Ground Quality

Monitoring activities related to water management will be undertaken at the level of DCT1 and DCT2 activities.

It is proposed that the following activities related to water supply and waste water discharges from DCT units are monitored:

- water usage (social and potable purpose) - continuous;
- quality of storm water - periodical.

F8 Ecology and Nature Conservation

Monitoring activities related to nature conservation are defined in Environmental Consent:.

1) After one month from the date of execution of compensatory activities for little tern and common ringed plover, submit to the Regional Director for Environmental Protection a report on the completed works of creating replacement habitat. In the report indicate the date of works completion and their contractor, person responsible for ornithological monitoring, describe in detail the method of execution of compensatory actions, attach photos and results of observations with regard to possible occupancy of the area,

2) Conduct, for the period of 5 years following the year when compensatory actions were conducted, in the period of the breeding, the annual ornithological monitoring of the surface of compensatory actions, effects of the project for common ringed plover and little tern ..

3) Conduct, for the period of 5 years following the year when minimizing actions were conducted, in the period of the breeding, the annual ornithological monitoring of the surface of actions minimizing impacts on common merganser and common shelduck.

4) Monitoring results with regard to effectiveness of the adopted compensatory actions and actions minimizing the investment impact on birds along with the indication of the observed species, numbers and breeding success, submit to the Regional Director for Environmental Protection, on an annual basis, as part of reports, after each breeding season of birds (no later than until 30 October) for the purpose of determination of the effectiveness of used activities for the species: little tern , common ringed plover. common mergansers. common shelduck. Depending on the obtained monitoring results, it is required to prepare in consultation with the Regional Director for Environmental Protection and implement additional or other minimizing measures, increasing their effectiveness, and extend the period of monitoring until achieving the assumed effectiveness indicators for minimizing actions.

5) Conduct, for the period of 10 years from adaptation or construction of facilities, control monitoring of the way the bats use facilities related to minimizing actions, as specified in this decision, in the quantity at least 1 winter control annually, in the period from 15 January to 20 February.

F9 Marine and Coastal Ecology

No monitoring required. .

G Further Information

G1 Abbreviations

a.g.l.	Above Ground Level
b.g.l	Below Ground Level
BAT	Best Available Techniques
BREF	BAT Reference
WWTP	Waste Water Treatment Plant
CEM	Continuous Emission Monitoring
SPZ	Sanitary Protection Zone
CAPEX	Capital Expenditure
CCTV	Closed Circuit Television
CEMP	Construction Environmental Management Plan
CO_2	Carbon Dioxide
CSR	Corporate Social Responsibility
dBA	Decibels (Acoustic)
DEMP	Decommissioning Environmental Management Plan
EBRD	European Bank for Reconstruction and Development
EIA	Environmental Impact Assessment
EIPPB	European Integrated Pollution, Prevention and Control Bureau
ESS	Environmental and Social Statement
EMS	Environmental Management System
EPFIs	Equator Principle Financial Institutions
EPs	Equator Principles
ESAP	Environmental and Social Action Plan
ESIA	Environmental and Social Impact Assessment
ESMS	Environmental and Social Management System
EU	European Union
GHG	Greenhouse Gas
GIS	Global Information Systems
Ha/ha	Hectare
HSE	Health, Safety and Environment
IED	Industrial Emissions Directive
IFC	International Finance Corporation
IFI	International Finance Institution
ILO	International Labour Organization
IPCC	Intergovernmental Panel on Climate Change
IPPC	Integrated Pollution Prevention and Control - a European Directive
ISO	International Organization for Standardization
IUCN	International Union for Conservation of Nature
km	kilometre(s)
kW	Kilowatt
LC	Local Community
LVIA	Landscape and visual assessment
m	meter(s)
m/s	meters per second
MTS	Main Transformer Station
MVA	Megavolt Amperes
MW	Megawatt
MWe	Megawatt Electricity
NGO	Non-Governmental Organisation
NTS	Non-Technical Summary
OEMP	Operational Environmental Management Plan
Off.	Official

OHL(s)	Overhead Power Line(s)
OPEX	Operating Expenditure
PMW	Precautionary method of working
PR	Performance Requirements - EBRD Environmental and Social Policy Requirement
Q	Quarter - as in quarter of the year
SEIA	Strategic Environmental Impact Assessment
SEP	Stakeholder Engagement Plan
SHE	Safety, Health and Environment
SME	Small and Medium Sized Enterprises
U.K.	United Kingdom
U.S.A	United States of America
UNDP	United Nations Development Programme
UNESCO	United Nations Educational, Scientific and Cultural Organization
UNESCO-MAB	UNESCO Man and the Biosphere
VAT	Value Added Tax
ZTV	Zone of Theoretical Visibility
ΔGHG	Change in greenhouse gas

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