



**CONSTRUCTION OF LAVNA COAL TRANSSHIPMENT TERMINAL
(MURMANSK REGION, RUSSIAN FEDERATION)**

ESIA GAP ANALYSIS

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LIST OF ABBREVIATIONS

| | |
|--------------|--|
| BAT | Best Available Techniques |
| BREF | BAT Reference Document |
| BSTDB | Black Sea Trade and Development Bank |
| CLS | Core Labour Standards |
| CTS | Conveyor transport system |
| CTT | Coal Transshipment Terminal |
| E&S | Environmental and Social |
| EBRD | European Bank for Reconstruction and Development |
| EEC | European Economic Council |
| EES | Environmental and Engineering Studies |
| EHS | Environmental, Health and Safety |
| EIA | Environmental Impact Assessment |
| EIB | European Investment Bank |
| EPC | Engineering, Procurement, and Construction |
| EPE | European Principles on the Environment; |
| ESAP | Environmental and Social Action Plan |
| ESIA | Environmental and Social Impact Assessment |
| ESHS | Environmental, social, and health and safety |
| ESMS | Environmental and Social Management System |
| GIIP | Good International Industry Practice |
| GlabRybVod | the Main Catchment Department for Fishery and Conservation of Marine Biological Resources |
| GM | Grievance Mechanism |
| GOST | State standard |
| HMS | Hydrometeorological station |
| IFC | International Financial Corporation |
| IFIs | International finance institutions |
| ILO | International Labour Organisation |
| IMO | International Maritime Organisation |
| IP | Indigenous Peoples |
| ISO | International Organization for Standardization |
| ITS | Engineering and Technology References |
| KAE | Kola Archaeological Expedition |
| KSC RAS | Kola Scientific Centre of the Russian Academy of Science |
| LLC | Limited Liability Company |
| MMBI | Murmansk Marine Biological Institute |
| MPCmax | One-time concentrations of pollutants on the ambient air |
| MTH | Murmansk Transport Hub |
| MurmanRybVod | Murmansk Branch of the Main Catchment Department for Fishery and Conservation of Marine Biological Resources |
| NGO | Non-Governmental Organization |
| NTS | Non-Technical Summary |
| OHS | Occupational Health and Safety |
| OHSAS | Occupational Health and Safety Assessment Series |
| OVOS | National Environmental Impact Assessment (Russian abbreviation); abbreviated name |
| PINRO | Knipovich Polar Research Institute of Marine Fisheries and Oceanography |
| PMOOS | List of Environmental Protection Measures: |
| PPE | personal protective equipment |
| PR | Performance Standard |



| | |
|--------|---|
| PS | Performance Standard |
| RAS | Russian Academy of Sciences |
| RF | Russian Federation |
| RSL | Regional Screening Level |
| SA | Social Accountability |
| SanPiN | Sanitary Rules and Standards |
| SEP | Stakeholder Engagement Plan |
| SER | State Environmental Review |
| SMEs | Small and Medium Enterprises |
| SPNA | Specially protected natural areas |
| SPZ | Sanitary Protection Zone |
| SR | State Review |
| STLC | State Transport Leasing Company |
| ToR | Terms of Reference |
| tpa | tonnes per annum |
| TSS | total suspended solids |
| UNECE | United Nations Economic Commission for Europe |
| WHO | World Health Organization |
| WB | World Bank |



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1. INTRODUCTION

The State Transport Leasing Company (“STLC” or “the Company”) is financing construction of a greenfield Lavna Coal Transshipment Terminal (“the Lavna CTT” or “the Terminal”) in the Kola Bay in the Murmansk Region (“the Lavna CTT project” or “the Project”).

STLC established Lavna Commercial Sea Port LLC to undertake construction and operate the future Terminal. As a Project Proponent, Lavna Commercial Sea Port LLC received the construction permit and all necessary approvals for the site preparation works; the works are underway since July 2018.

STLC applied to the Black Sea Trade and Development Bank (“BSTDB” or “the Bank”) to raise external investments to the Project.

BSTDB requires that all projects supported by it should comply with environmental and social requirements of BSTDB Environmental and Social Policy (2014) and the applicable international standards, in addition to the relevant national laws and regulations.

All operations financed by BSTDB are subject to environmental and social assessment. According to BSTDB Environmental and Social Policy, the Project is categorized as a Category A operation, therefore being subject to Environmental and Social Impact Assessment (ESIA) process before a financing decision is made. The ESIA process also requires meaningful consultation with the public that may be affected, and setting of procedures for public disclosure of related E&S risks and impacts, public review and comment.

The Terminal underwent the OVOS (Russian Environmental Impact Assessment (EIA)) process including public hearings that were completed in March 2018 and construction works started in July 2018.

Considering the differences between the OVOS approach, namely with regard to assessment of social impacts, and the ESIA requirements applied by BSTDB the Bank commissioned Ecoline Environmental Assessment Centre (“the Consultant”) to undertake the ESIA Gap Analysis of the Project to better plan the forthcoming ESIA.

The ESIA Gap Analysis aims to:

- identify any gaps in the OVOS process and related documentation against the BSTDB’s E&S requirements,
- assess whether they may pose risks to the Terminal’s operation, to environmental and social receptors of Project’s impacts, and to Bank’s reputation, and
- where necessary, to propose the corrective actions.

The Consultant completed the ESIA Gap Analysis for the Project and presented the results, including the gaps and the recommendations to address them, in this report.



2. ENVIRONMENTAL AND SOCIAL REGULATORY FRAMEWORK

The legal and regulatory framework includes the applicable requirements of Russian legislation and of BSTDB. The key BSTDB environmental and social (E&S) requirements are described in **Section 2.1**.

The Russian E&S regulatory requirements are very diverse; this report doesn't aim to evaluate the Project's compliance to the national requirements in detail relying on the national approval process. Instead, for the purpose of this ESIA Gap Analysis, specific provisions of the Russian legislation corresponding to BSTDB's E&S requirements described in **Section 3.1** were identified and presented in **Section 2.2**.

2.1. BSTDB's Requirements

The BSTDB's E&S requirements are formulated in the BSTDB's policies (further mentioned as "Policy requirements"), international legal documents (EU Directives and international treaties, further mentioned as "EU/Global standards"), and Good International Industry Practice (GIIP) documents (further mentioned as "GIIP standards").

The Project shall comply with Policy requirements and requirements of applicable EU/Global standards whilst following the GIIP standards is advisory.

2.1.1. **BSTDB's Policies and Applicable Standards**

The BSTDB's E&S Policy requirements to operations financed by the Bank are presented in:

- The BSTDB Environmental and Social Policy (2016)¹ (further mentioned as the BSTDB E&S Policy);
- The BSTDB Public Information Policy (2018)².

The following EU/Global standards are applicable to the Project:

- the EIA Directive 85/337/EEC³ (the EIA Directive);
- the Directive 2010/75/EU on industrial emissions⁴;
- the International Labour Organisation (ILO)'s Core Labour Standards (CLS);
- the World Health Organization (WHO)'s standards;

¹Black Sea Trade and Development Bank (2016). Environmental and Social Policy, February 2016. Available at https://www.bstadb.org/about-us/key-documents/policy-documents/Environmental_Policy_Feb2016.pdf.

²Black Sea Trade and Development Bank (2018). Public Information Policy, 27 March 2018. Available at https://www.bstadb.org/about-us/key-documents/policy-documents/Public_Information_Policy_2018.pdf.

³ Council Directive 85/337/EEC of 27 June 1985 on the assessment of the effects of certain public and private projects on the environment, with the amendments of 1997, 2003 and 2009 <http://ec.europa.eu/environment/eia/eia-legalcontext.htm>

⁴ Directive 2010/75/EU of the European Parliament and of the Council of 24 November 2010 on industrial emissions (integrated pollution prevention and control) <http://ec.europa.eu/environment/industry/stationary/ied/legislation.htm>



- relevant International Maritime Organisation (IMO)'s conventions, as well as relevant international conventions including; and
- United Nations Economic Commission for Europe (UNECE)'s multilateral agreements; in particular, the Convention on Access to Information, Public Participation in Decision-Making and Access to Justice in Environmental Matters (the Aarhus Convention)⁵, and Convention on Environmental Impact Assessment in a Transboundary Context (the Espoo Convention)⁶.

The following GIIP standards are applicable to the Project:

- Best Available Techniques (BAT) Reference Documents (BREF)⁷ and specifically, the EU BREF Emissions from Storage (2006)⁸;
- the World Bank (WB)/International Finance Corporation (IFC)'s Performance Standards (PSs)⁹, and General Environmental, Health and Safety (EHS) Guidelines¹⁰;
- the European Bank for Reconstruction and Development (EBRD)'s Performance Requirements (PRs)¹¹;
- the European Principles on the Environment (EPE)¹²; and
- the European Investment Bank (EIB)'s Environmental and Social Standards¹³.

⁵ United Nations Economic Commission for Europe (UNECE) (1998). The Convention on Access to Information, Public Participation in Decision-making and Access to Justice in Environmental Matters (Aarhus, June 1998). Available at: <http://www.unece.org/fileadmin/DAM/env/pp/documents/cep43e.pdf>

⁶ United Nations Economic Commission for Europe (UNECE) (1991). The Convention on Environmental Impact Assessment in a Transboundary Context. Finland, Espoo, February 1991. Available at: <http://ec.europa.eu/world/agreements/downloadFile.do?fullText=yes&treatyTransId=1361>

⁷ Reference documents under the IPPC Directive and the IED. Available at: <http://eippcb.jrc.ec.europa.eu/reference/>

⁸ European Commission (2006). Integrated Pollution Prevention and Control. Reference Document on Best Available Techniques on Emissions from Storage. Available at: http://eippcb.jrc.ec.europa.eu/reference/BREF/esb_bref_0706.pdf

⁹ International Finance Corporation (IFC) (2012). Performance Standards on Environmental and Social Sustainability. Available at: https://www.ifc.org/wps/wcm/connect/115482804a0255db96bfbd1a5d13d27/PS_English_2012_Full-Documents.pdf?MOD=AJPERES

¹⁰ International Finance Corporation (IFC) (2007). Environmental, Health, and Safety. General Guidelines. Available at: <https://www.ifc.org/wps/wcm/connect/554e8d80488658e4b76af76a6515bb18/Final%20General%20EHS%20Guidelines.pdf?MOD=AJPERES>

¹¹ European Bank for Reconstruction and Development (EBRD) (2014). Environmental and Social Policy and the Performance Requirements. Available at: <https://www.ebrd.com/who-we-are/our-values/environmental-and-social-policy/performance-requirements.html>

¹² The European Principles for the Environment (EPE), Declaration. 2006. Available at: http://www.eib.org/attachments/strategies/european_principles_for_the_environment_en.pdf

¹³ European Investment Bank (EIB) (2018). Environmental and Social Standards, 29 October 2018. Available at <http://www.eib.org/en/infocentre/publications/all/environmental-and-social-practices-handbook.htm>.



2.1.2. E&S Requirements

Bank's operations are categorised based on: i) the associated potential environmental and social risks and impacts, and ii) the scope of environmental and social assessment necessary to identify, assess and mitigate these impacts and risks. The following categories are applied: A, B+, B, C and FI.

The Project is classified a Category A operation, which implies it has "the potential to generate significant adverse environmental and social impacts which are diverse, irreversible, or unprecedented".

The BSTDB's E&S Policy defines the commitments and requirements in the following areas:

Environmental and social impact assessment (ESIA), stakeholder engagement and information disclosure

- ESIA process

The Project (of Category A) is subject to Environmental and Social Impact Assessment (ESIA) process. The ESIA process should meet the requirements of the EIA Directive. EBRD's PR1 and IFC's PS1 are considered as the applicable GIIP standards.

- The ESIA scope:

The BSTDB E&S Policy stipulates the need for considering both environmental and social risks and impacts associated with its operations.

According to the EIA Directive, impacts on the following aspects of the environment should be considered within the impact assessment: population, fauna, flora, soil, water, air, climatic factors, material assets, including the architectural and archaeological heritage, landscape and the interrelationship between the above factors (Annex IV, para. 3);

- Analysis of alternatives:

According to the EIA Directive and GIIP standards (e.g. EBRD's PR1) the Project Developer should examine key technically and economically feasible Project's alternatives and describe reasons for the choice of a preferred one(s).

- Impact/risk management

For impacts and risks of concern relevant preventive and mitigation actions should be proposed and implemented throughout the Project lifetime. These actions are usually presented in a form of Environmental and Social Action Plan (ESAP), and its implementation is part of the operation' financing terms and conditions.

- Stakeholder engagement and information disclosure

The stakeholder engagement should start during the ESIA process as early as reasonably possible and continue throughout the Project lifetime.

The following Policy requirements are applicable for the Project:

- *Stakeholder identification and analysis*: Project stakeholders, including stakeholders affected by or interested in the operation, should be identified;



- *Meaningful stakeholder consultations* should be undertaken including public notification, disclosure of the relevant E&S information, and collecting public comments on the disclosed materials;
- *Disclosure of relevant E&S information* to the general public (or stakeholders interested but not affected by the Project) should be arranged.

IFC's PS1 and EBRD's PR1 and PR10 can be used as the GIIP standards.

These GIIP standards emphasize the Project Proponent should establish and maintain the *grievance mechanism (GM)* for stakeholders affected by the proposed operations.

According to the BSTDB E&S Policy, the ESIA should cover, if/where relevant, the following topics detailed below: i) Environmental and social management, ii) Labour and working conditions, iii) Pollution prevention and abatement, resource efficiency, and climate change, iv) Community health, safety and security, v) Land acquisition, involuntary resettlement and economic displacement, vi) Living natural resources, biodiversity, and ecosystem services, vii) Cultural heritage, and viii) Indigenous peoples.

Environmental and social management

- National compliance

The main Policy requirement to the Project environmental management is the compliance with national legislation, including national commitments under international law. Availability of permits, approvals, licenses and certificates required under relevant laws and regulations is also the must. If these are not available at the time of BSTDB financing approval the Client will need to submit a satisfactory plan for obtaining such permits, approvals, licenses and certificates.

- EHS responsibilities' distribution:

No specific Policy requirements to distribution of EHS responsibilities with the organizational structure of the project proponent are formulated in the BSTDB E&S Policy and the EU/Global (mandatory) standards. The GIIP requirements to this aspect are formulated in:

- IFC's PS1 and EBRD's PR1

The GIIP standards envisions the project proponent's staff should include personnel with direct responsibility for the project's E&S performance having necessary knowledge, skills, and experience.

- Environmental and social management system (ESMS)

No specific Policy requirements to ESMS are formulated in the BSTDB E&S Policy. The EU/Global (mandatory) standards also do not include pertinent requirements.

The GIIP requirements to ESMS are formulated in:

- IFC's PS1 and EBRD's PR1;
- ISO 14000 series of standards and other internationally recognized standards such as OHSAS 18000, SA 8000, etc.

Labour and working conditions

- Human rights at work



BSTDB is committed to observance of minimum age of employment, fair and equal treatment and opportunity, recognition of the right to collective bargaining.

BSTDB commits not to finance any activities that may be suspected of involving forced labour and/or child labour, including in the supply chain to the extent feasible.

- Working conditions and management of working relationships

Wages, benefits and conditions of work should ensure the right for decent work for employees involved in the projects subject to Bank's financing.

- Occupational Health and Safety

BSTDB E&S Policy envisions ensuring healthy and safe working environment for workers involved in Projects subject to Bank's financing.

Selected ILO conventions ratified by the Russian Federation listed in **Annex 1** are considered as applicable Global standards.

Pollution prevention and abatement, resource efficiency, and climate change

- BSTDB is committed to finance operations that seek to prevention pollution at source where possible, apply energy efficiency measures, and reduce greenhouse gas (GHG) emissions. The Directive 2010/75/EU on industrial emissions¹⁴ and WHO Air Quality Guidelines¹⁵ is considered as applicable EU/Global standards.
- The best available techniques (BAT) approach is widely used; the EU BREF Emissions from Storage (2006)¹⁶ is treated as an applicable GIIP standard;
- EBRD's PR3, IFC's PS3 and IFC's General EHS Guidelines are also considered as applicable GIIP standards;
- Climate change impact and GHG emissions:

According to GIIP standards (IFC PS3) GHG emission inventory and reporting is required for projects generating or expected to generate over 25,000 tonnes of CO₂-equivalent per annum (both direct and indirect).

- Community health, safety and security
- The WHO standards of air quality are considered as applicable Global standards; the relevant pollutant concentration limits should be met on the boundary of ownership;
- IFC's PS4 and EBRD's PR4 are treated as the applicable GIIP standards.

¹⁴ The European Parliament and the Council of the European Union (2010). The Directive 2010/75/EU on industrial emissions (integrated pollution prevention and control). Available at: <https://eur-lex.europa.eu/legal-content/EN/TXT/HTML/?uri=CELEX:32010L0075&from=EN>

¹⁵ World Health Organisation (WHO) (2005). Air Quality Guidelines Global Update 2005. Particulate matter, ozone, nitrogen dioxide and sulfur dioxide. Available at http://www.euro.who.int/_data/assets/pdf_file/0005/78638/E90038.pdf?ua=1

¹⁶ European Commission (2006). Integrated Pollution Prevention and Control. Reference Document on Best Available Techniques on Emissions from Storage. Available at http://eippcb.jrc.ec.europa.eu/reference/BREF/esb_bref_0706.pdf



Land acquisition, involuntary resettlement and economic displacement

- There is no specific Policy requirements or applicable EU/Global standards on this topic;
- The Project envisions land acquisition; it results in no physical resettlement, but it does incur economic displacement. For this reason, EBRD's PR5 and IFC's PS5 are considered as applicable GIIP standards.

Living natural resources, biodiversity, and ecosystem services

- Convention on Biodiversity Conservation¹⁷ is the key international legal act and the key Global standard;
- EBRD's PR6 and IFC's PS6 are considered as applicable GIIP standards.

Cultural heritage

Potential impacts to any cultural heritage that may be affected by the Project to be financed by BSTDB should be identified, assessed, prevented, and, if prevention is impossible, mitigated.

The UNESCO conventions serve as applicable EU/Global standards on this topic; as a minimum, the following UNESCO Conventions could be applied:

- Convention Concerning the Protection of the World Cultural and Natural Heritage (1972)¹⁸;
 - The Convention on the Protection of the Underwater Cultural Heritage (2001)¹⁹; and
 - Convention for the Safeguarding of the Intangible Cultural Heritage (2003)²⁰.
- IFC's PS7 and EBRD's PR7 are the applicable GIIP standards.

Indigenous peoples

BSTDB requires from its clients to identify potential risks and impacts on Indigenous Peoples during the ESIA process.

- The ILO Indigenous and Tribal Peoples Convention (1989)²¹ is the applicable Global standard;
- IFC's PS8 and EBRD's PR8 are the applicable GIIP standards.

¹⁷ The Convention on Biological Diversity (1992). Available at <https://www.cbd.int/doc/legal/cbd-en.pdf>.

¹⁸ United Nations Educational, Scientific and Cultural Organization (UNESCO) (1972). The Convention Concerning the Protection of the World Cultural and Natural Heritage. Available at: <http://whc.unesco.org/en/175>

¹⁹ United Nations Educational, Scientific and Cultural Organization (UNESCO) (2001). The Convention on the Protection of the Underwater Cultural Heritage. Available at: <http://unesdoc.unesco.org/images/0012/001260/126065e.pdf>

²⁰ United Nations Educational, Scientific and Cultural Organization (UNESCO) (2003). The Convention for the Safeguarding of the Intangible Cultural Heritage. Available at: <http://unesdoc.unesco.org/images/0013/001325/132540e.pdf>

²¹ International Labour Organisation (ILO) (1989). Indigenous and Tribal Peoples Convention. Available at: <https://www.ohchr.org/EN/ProfessionalInterest/Pages/Indigenous.aspx>



The applicability of the requirements on indigenous peoples to the Project is discussed in **Section 5.8**.

2.2. Russian Legislation Requirements

Russian legislation in the EHS area is very diverse, and its general analysis is out of scope of this report. The brief points below aim to provide the general information on the similarities and differences between the Russian legal requirements and the BSTDB's and EU/Global requirements in the areas identified above for the purpose of this ESIA GAP analysis only.

Environmental impact assessment and public consultations

- EIA process

The requirement for the conducting the assessment of environmental and related social and economic impacts of a planned economic and other activity is established by the RF Law on the Environmental Protection²². The Project is subject to the State Environmental Review (SER)²³ provided by the competent authorities and the OVOS (national EIA) provided by the Project Proponent.

The SER at the federal level is conducted by the Federal Service for the Supervision of Nature Resource Management.

The EIA procedure is set out in the Regulation on the Environmental Impact Assessment of Planned Activities in the Russian Federation (the OVOS Regulation)²⁴. The OVOS is conducted in three phases:

1. Notification, preliminary assessment and the OVOS ToR formulation;
2. Environmental impact assessment per se and preparation of the draft OVOS Report;
3. Finalisation of the OVOS Report.
 - EIA Scope

The OVOS Regulation (2000) stipulates the need for considering environmental as well as socio-economic impacts of the proposed economic activity.

²² Federal Law No. 7-FZ On the Environmental Protection of 10 January 2002 as amended on 31 December 2017. Available at <http://www.consultant.ru/cons/cgi/online.cgi?req=doc&base=LAW&n=287111&fld=134&dst=100000001,0&rnd=0.7073980686979353#05402110916301386>

²³ Federal Law No. 174-FZ On Environmental Review of 23 November 1995 (amended as of 3 August 2018). Available at <http://www.consultant.ru/cons/cgi/online.cgi?req=doc&base=LAW&n=304402&fld=134&dst=100000001,0&rnd=0.05413313127288388#05754386399366245>

Federal Law No. 422-FZ of 28 December 2017 On Amending Article 14 of the Federal Law on the State Environmental Review and Article 12 of the Federal Law on Amending the Federal Law on the Environmental Protection and Certain Legal Acts of the Russian Federation. Available at <http://www.consultant.ru/law/hotdocs/52059.html/>

²⁴ RF State Committee on the Environmental Protection Order of 16 May 2000 No. 372 On the Approval of the Regulation on the Environmental Impact Assessment of Planned Activities in the Russian Federation. Available at <http://base.garant.ru/12120191/#ixzz5VcOS9Zwy>.



- Alternative analysis

The OVOS Report should include assessment of impacts for all Project alternatives including namely alternative sites and project technologies, as well as a 'no-go' alternative.

- Impact management

The OVOS Report include measures to mitigate or prevent potential adverse impacts of the project, as well as analysis of their effectiveness and implementation perspectives.

- Stakeholder engagement and information disclosure

Public consultations and information disclosure shall be held at each phase of the OVOS process.

The Project Developer is responsible for conducting public consultations process; he informs the public and ensures access to the information, addresses inquiries, and covers all related costs.

The local (municipal) authorities provide organizational support in conducting public meetings (if applied as a method for public consultations) including *inter alia* public hearings.

Environmental management

- Environmental Management Systems

While the Russian Federation legislation does not specify compulsory requirements to environmental management systems, their development and introduction on a voluntary basis is encouraged. A set of recommended standards similar to ISO has been developed to include:

- GOST R ISO 14001-2016 Environmental Management Systems. Requirements and Guidance for Use;
- GOST R 54934-2012/OHSAS 18001:2007 Occupational Health and Safety Management Systems. Requirements;
- GOST R ISO 9001-2015 Quality Management Systems. Requirements;
- GOST R 19011-2012 Guidance on Audit of Management Systems.

The list is not exhaustive with a number of other documents adopted to support the introduction of environmental and social management systems.

Labour and working conditions; occupational health and safety

The Russian Federation has signed and ratified virtually all ILO conventions with requirements contained therein reflected in the RF Labour Code²⁵ one way or another.

²⁵ Federal Law No. 197-FZ Labour Code of the Russian Federation of 31 December 2001 (amended as of 11 October 2018). Available at <http://www.consultant.ru/cons/cgi/online.cgi?req=doc&ts=167130565908183498424933671&cacheid=C599940A82DD15DCCFA8B2FFBD361052&mode=splus&base=LAW&n=308815&rnd=0.7502925081510683#013047658433739961>



The selected ILO conventions ratified by the country and applicable to the Project are listed in **Annex 1**.

However, this applies only to employees hired on a labour contract basis while in many cases the civil law contracts are used as a form of employment (e.g. a contractor agreement). This form of employment is not covered by the provisions of the RF Labour Code.

The legislative provisions regarding child labour are well elaborated, consistent with ILO requirements and complied with. Prison labour is legal under the Russian legislation; it is relatively widely used in a number of sectors, and whether it is used or not needs to be verified on a case by case basis.

The RF Labour Code is also the backbone piece of legislation on the occupational health and safety (OHS). It is supported by a broad range of regulations addressing general aspects and specific issues of occupational health and safety.

The key law on occupational safety is the Law on Occupational Safety of Hazardous Industrial Facilities²⁶.

The RF occupational health and safety legislation is generally consistent with the relevant EU requirements though enforcement practice may vary.

Pollution prevention and abatement, resource efficiency, and climate change

The RF legislation on pollution prevention and abatement, resource conservation and efficiency is extensive and includes many laws and regulations.

- Pollution prevention and abatement

Like the European directives, the RF legislation emphasises the pollution prevention and abatement principle but practical approaches vary significantly. The differences concern various technical details, for example, methods used to determine maximum permissible concentrations of pollutants (particularly in the ambient air).

The BAT concept is gradually becoming part of the national legislation. The notion of the best available techniques has now been defined in the Law on the Environmental Protection (Article 1)²⁷. From 2019 onwards, the Category I industries applying for the Integrated Environmental Permit will be required to implement BATs²⁸. The development of the Engineering and Technology References (ITS documents) is ongoing.

Both vertical ITS documents and a sector-specific ITS 46-2017 on Reducing Emissions and Discharges from the Goods (Cargo) Storage and Handling Operations (ITS 46-2017)²⁹ apply to this Project. This document was approved in 2017 but a

²⁶ Federal Law No. 116-FZ On Occupational Safety of Hazardous Industrial Facilities of 20 June 1997 (amended as of 7 March 2017). Available at <http://www.consultant.ru/cons/cgi/online.cgi?req=doc&base=LAW&n=213198&fld=134&dst=100000001.0&rnd=0.7502925081510683#05603206920920716>

²⁸ Criteria for Being Qualified as Objects that Have a Negative Impact on the Environment of Categories I, II, III and IV. Approved by the RF Government Resolution of 28 September 2015 No. 1029.

²⁹ ITS 46-2017 on Reducing Emissions and Discharges from the Goods (Cargo) Storage and Handling Operations (ITS 46-2017) Available at



decision to update it was already made in 2018 following the RF Government Resolution. The need for updating is caused by an expansion in the scope of the BAT application in RF and significant adverse environmental impacts associated with coal transfer operations in the sea ports.

- Protection of water resources

The RF Water Code is a key law governing the management and protection of water resources³⁰. The term 'water resources' refers to surface waters and groundwater resources contained in the natural and man-made water bodies and watercourses. As a general rule, all water bodies are federal property.

With the Project being located in the sea bay, it is subject to the conventions adopted by the IMO including the International Convention for the Prevention of Pollution from Ships (MARPOL) (1973)³¹ and RF Rules³² for registration of operations with oil, petroleum products and other substances harmful to human health or to living marine resources, as well as with their mixtures produced on ships and other sea craft.

- Climate Change and GHG Emissions

The RF signed (but not ratified yet) the Paris Agreement on Climate Change³³ on 22 April 2016.

Pursuant to the Russian Federation Greenhouse Gas (GHG) Emission Monitoring, Reporting and Verification System Development Concept³⁴, the mandatory GHG reporting requirement came into effect in 2019 (Phase I) for major industrial and energy installations with direct annual GHG emissions over 150,000 tons of CO₂-equivalent.

d3Lmdvc3QucnUvZG9jdW1lbnRNYW5hZ2VYLnJlczQvZm9sb2FkLzE1MjA4NjAxOTczODgiLCJ0aXRzZSI6IjE1MjA4NjAxOTczODgiLCJ1aWQiOiIlwliwieXUiOiIzMTE4NDU1NTQxNTM5MTAwNTUxliwibm9pZnJhbWUiOnRydWUslrZljoXNTQxNDUyOTkwODI5LCJzZXJwUGFyYW1zIjoibGFuZz1ydS ZuYW11PTE1MjA4NjAxOTczODgmdG09MTU0MTQ1MjkkNCZ0bGQ9cnUmdGV4dD1JVFMiMjA0Ni0 yMDE3JnVybD1odHRwcyUzQSUyRiUyRnd3dy5nb3N0LnJ1JTJGZG9jdW1lbnRNYW5hZ2VyJTJGc mVzdCUyRmZpbGUIMkZsb2FkJTJGMDUyMDg2MDE5NzM4OCZscj0xMDc2MSZtaW1IPXBkZiZsM TBuPXJ1JnNpZ249NzMwYTgzOTRjMjMwYmU0ZmNiZjFiMjk4ZDQ2NWlyN2Mma2V5bm89MCJ9&la ng=ru

³⁰ RF Water Code No. 74-FZ of 3 June 2006, as amended on 3 August 2018. Available at <http://www.consultant.ru/cons/cgi/online.cgi?req=doc&ts=167130565908183498424933671&cacheid=65BDD5C43CB1FC516D935216ED085C75&mode=splus&base=LAW&n=304226&rnd=0.7502925081510683#0127313373856341>

³¹ International Convention for the Prevention of Pollution from Ships (MARPOL) (1973), the 1978 Protocol and the 1997 Protocol amending the Convention. Available at [http://www.imo.org/en/About/Conventions/ListOfConventions/Pages/International-Convention-for-the-Prevention-of-Pollution-from-Ships-\(MARPOL\).aspx](http://www.imo.org/en/About/Conventions/ListOfConventions/Pages/International-Convention-for-the-Prevention-of-Pollution-from-Ships-(MARPOL).aspx)

³² RD 31.04.17-97. Rules for Registration of Operations With Oil, Petroleum Products and Other Substances Harmful to Human Health or to Living Marine Resources, As Well As With Their Mixtures Produced On Ships and Other Sea Craft.

³³ The Paris Agreement on Climate Change official website. Available at: <https://unfccc.int/process-and-meetings/the-paris-agreement/the-paris-agreement>.

³⁴ Russian Federation Greenhouse Gas Emission Monitoring, Reporting and Verification System Development Concept, approved by the RF Government Resolution of 22 April 2015 No. 716-r. As amended by the Order of the RF Government of April 30, 2018 No. 842-r.



From 2024 onwards (Phase III), the mandatory GHG reporting requirement will apply to all organisations whose GHG emissions are over 50,000 tonnes of CO₂-equivalent, and to all air, rail, maritime and river transport organisations.

Community Health and Safety

The Law on the Healthy and Safe Community Environment³⁵ forms a basis for ensuring community health and safety in the country.

Its key concept is the sanitary protection zone (SPZ) to be set around an industrial site and provide additional space for the dispersal of emissions released from that site. Each industry is required to ensure compliance with the specified air quality and noise level guidelines on the SPZ boundary and conduct an assessment of community health risks.

Land acquisition and involuntary resettlement

The RF land legislation is very detailed and requires, inter alia, that compensation be paid for land acquisition for federal and municipal programmes. The national land acquisition process is generally consistent with the relevant EU requirements. However, significant differences may become apparent in the situations where a formal land title is missing for a plot that has been used for many years. It would be difficult to claim compensation for buildings and structures built without required permits.

Cultural Heritage

Russia is a party to the following conventions:

- Convention Concerning the Protection of the World Cultural and Natural Heritage (1972)³⁶;
- The Convention on the Protection of the Underwater Cultural Heritage (2001)³⁷.

Russia is not a party to the Convention for the Safeguarding of the Intangible Cultural Heritage (2003)³⁸ and this fact is a major source of contradiction.

³⁵ Federal Law No. 52-FZ On the Healthy and Safe Community Environment of 30 March 1999 as amended on 03 August 2018. Available at: <http://www.consultant.ru/cons/cgi/online.cgi?req=doc&ts=167130565908183498424933671&cacheid=626AC85E0D9DB0CB64A9DDCF469B1503&mode=splus&base=LAW&n=296562&rnd=0.7502925081510683#09325465290645842>

³⁶ United Nations Educational, Scientific and Cultural Organization (UNESCO) (1972). The Convention Concerning the Protection of the World Cultural and Natural Heritage. Available at: <http://whc.unesco.org/en/175>

³⁷ United Nations Educational, Scientific and Cultural Organization (UNESCO) (2001). The Convention on the Protection of the Underwater Cultural Heritage. Available at: <http://unesdoc.unesco.org/images/0012/001260/126065e.pdf>

³⁸ United Nations Educational, Scientific and Cultural Organization (UNESCO) (2003). The Convention for the Safeguarding of the Intangible Cultural Heritage. Available at: <http://unesdoc.unesco.org/images/0013/001325/132540e.pdf>



Key national requirements regarding the conservation of tangible cultural heritage are set out in the Russian Federation Law on the Conservation of Cultural Heritage³⁹.

Indigenous Peoples

The Russian Federation has a well-defined body of legislation concerning the small-numbered indigenous peoples of the North, Siberia and the Far East (small-numbered peoples)^{40,41}. The federal legislation includes a number of bylaws and regional laws in place in the regions where indigenous peoples are concentrated.

The Russian legislation has its distinct features as compared to the relevant European laws (including the definition and eligibility criteria that should be met by an ethnic group to be included in the national list of indigenous peoples).

According to Federal Law No. 82-FZ On the Guaranteed Rights of the Small-Numbered Indigenous Peoples of the Russian Federation, Indigenous Peoples⁴² are considered as the nationalities occupying within lands of traditional lands of living of their ancestors and practicing traditional lifestyle, household and economy and having total number of less than 50 thousand people and identifying themselves as ethnic community (Article 1, para 1).

³⁹ Federal Law No. 73-FZ On the Cultural Heritage (Historical and Cultural Assets) of the Peoples of the Russian Federation of 25 June 2002 as amended on 3 August 2018. Available at <http://www.consultant.ru/cons/cgi/online.cgi?req=doc&base=LAW&n=304221&dst=0&rnd=0.7502925081510683#011431971479303882>

⁴⁰ Federal Law No. 82-FZ On the Guaranteed Rights of the Small-Numbered Indigenous Peoples of the Russian Federation of 30 April 1999. Available at <http://www.consultant.ru/cons/cgi/online.cgi?req=doc&ts=167130565908183498424933671&cacheid=F7FDD86C7E0B7704EFEB6E5810A58C9&mode=splus&base=LAW&n=301179&rnd=0.7502925081510683#05202292374552007>

⁴¹ Federal Law No. 104-FZ On the General Principles Underpinning the Organisation of Small-Numbered Indigenous Communities of the Peoples of the North, Siberia and the Far East of the Russian Federation of 20 July 2000 as amended on 27 June 2018. Available at <http://www.consultant.ru/cons/cgi/online.cgi?req=doc&ts=167130565908183498424933671&cacheid=D2692A148ECFC2C6208D81708C6DEABD&mode=splus&base=LAW&n=301173&rnd=0.7502925081510683#011285836106578828>

⁴² Federal Law No. 82-FZ On the Guaranteed Rights of the Small-Numbered Indigenous Peoples of the Russian Federation of 30 April 1999, Article 1, para Available at <http://www.consultant.ru/cons/cgi/online.cgi?req=doc&ts=167130565908183498424933671&cacheid=F7FDD86C7E0B7704EFEB6E5810A58C9&mode=splus&base=LAW&n=301179&rnd=0.7502925081510683#05202292374552007>



3. PROJECT DESCRIPTION

3.1. Project Location and Context

The Lavna CTT's site is located in the Murmansk Region, the Kola District, on the western shore of the southern knee of the Kola Bay, in the Lavna River mouth (**Figure 1**). Project's location envisions direct access to the ocean without the need to pass through the waters of other countries and proximity to the European and American markets.

The Terminal will occupy an area of 108 ha. The Project site is situated within the administrative boundaries of the Mezhdurechye Rural Settlement. The nearest residential areas are Mezhdurechye and Mishukovo Villages located at a distance of more than 500 m of the site (**Figure 2**).

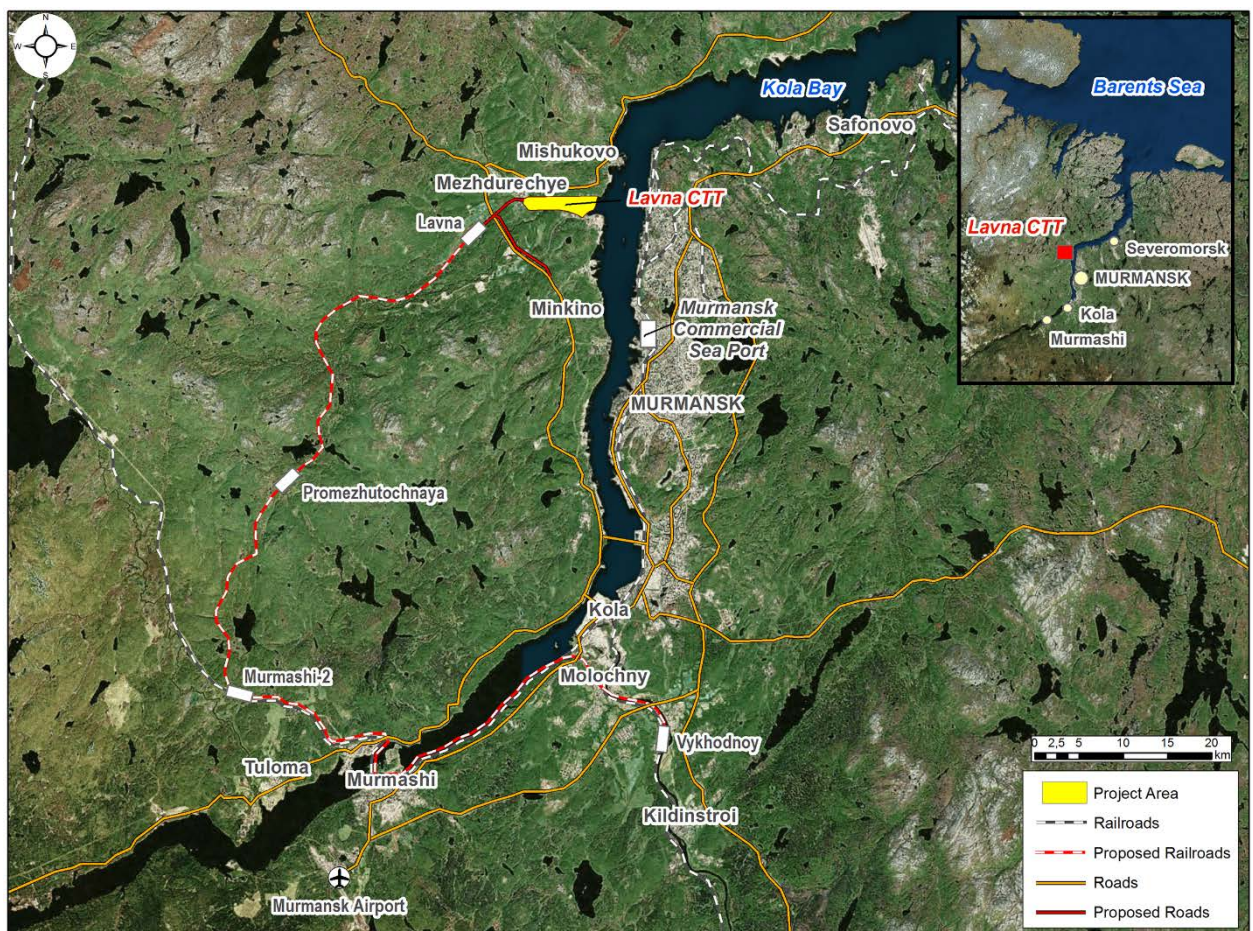


Figure 1. Project Location Map





Figure 2. The Project Site and the Vicinity

The Terminal is a crucial component of the Integrated Development of the Murmansk Transport Hub (MTH) Project (the MTH project). The proposed MTH is a year-round deep sea marine hub handling various types of cargoes to be integrated into the North-South international transport corridor. The MTH project is a component of the Russian Federation Transport Strategy until 2030⁴³ and Russian Federation Railway Transport Strategy until 2030⁴⁴ and is implemented as a public-private partnership.

As part of the MTH project it is planned to build inter alia: i) a coal terminal (the Lavna CTT); ii) an oil terminal, and iii) the Vychodnoy – Lavna public railroad on the western coast of the Kola Bay, as well as to renovate the existing CTT of the Murmansk Commercial Sea Port on the eastern coast of the Kola Bay. It is inter alia planned to relocate the coal transshipment operations to the western coast of the bay and establish a container terminal on the site of the existing CTT. The existing and proposed MTH facilities are shown on **Figure 1**.

On 1 October 2018, the RF Government signed a Concession Agreement with Lavna Commercial Sea Port LLC⁴⁵ to finance, build and operate the port infrastructure in Murmansk Region. The Concession Agreement sets out the responsibilities of Lavna Commercial Sea Port LLC as a concession operator with regard to the development of the Lavna CTT. The RF Federal Marine and Transport Agency (RosMorRechFlot)

⁴³ The Russian Federation Transport Development Strategy Until 2030 approved by the RF Government Resolution of 22 November 2008 No. 1734-r. Available at <http://government.ru/docs/22047/>

⁴⁴ The Russian Federation Railway Transport Development Strategy Until 2030 approved by the RF Government Resolution of 17 June 2008 No. 877-r. Available at <http://government.ru/docs/all/64817/>

⁴⁵ Key Terms and Conditions of the Concession Agreement on Construction and Operation of the Murmansk Sea Port Infrastructure Facilities. Approved by the Executive Order of the RF Government of 1 October 2018 No. 2111-r.

as a concession grantor commits to ensure transport accessibility of the Project site through the completion of Phase 1 facilities under the MTH project before the end of 2020. Phase 1 of the MTH project includes the development of existing railroad infrastructure on the eastern coast and construction of new infrastructure and facilities on the western coast of the Kola Bay.

According to the Concession Agreement, the following MTH project components are financed from the Federal budget:

- A 46km section of the new public railroad connecting Vykhodnoy and Lavna Railway Stations (the total investment amounts 42 billion Roubles; 18.8 billion Roubles disbursed as of August 2018);
- Dredging operations and auxiliary fleet base construction including the navigation system (the total investment amounts 1.8 billion Roubles).

In turn, private investors are to finance construction of the following MTH project components:

- The coal transshipment terminal with a capacity of 18 million tonnes per annum (tpa) (the Lavna CTT) (the total investment amounts 24 billion Roubles);
- A 2.3km access railroad connecting Lavna Railway Station and the Lavna CTT's site (the total investment amounts 0.9 billion Roubles).

As a future development, STLC is considering construction of another transshipment facility in the close vicinity of the Lavna CTT south of its site: it is planned to build a fertilizer transshipment terminal on the right shore of the Lavna River in its mouth part. The proposed investment for fertilizer transshipment terminal is about 10 billion Roubles. The information on this proposed facility was not provided by STLC, and this report does not analyse the fertilizer transshipment terminal project and does not consider potential cumulative impacts arising from construction and operation of the two neighbouring terminals.

3.2. Project Summary

The Project will serve the following purposes:

- Increase energy coal exports through the development of new coal transfer capacities across the Russian Federation;
- Shift freight flows from the Baltic ports to the Russian ports;
- Provide access to new coal markets due to possibility to accommodate vessels with a deadweight of over 150,000 tonnes.

The Lavna CTT is designed to be a modern high-technology specialised transshipment facility handling 18 million tpa.

The Lavna CTT project includes two phases:

- Phase I (to be completed by December 2020) involves the construction of the coal transfer facility with a capacity of up to 9 million tpa;
- Phase II (to be completed by December 2021) involves the expansion of the coal transfer facility to reach a capacity of up to 18 million tpa.

The coal will be transported to the Lavna CTT by railroads. Then it will be unloaded in closed hangars, temporarily stored in the outdoor stockpiles, then transferred to vessels via closed conveyors, and shipped further by sea. One of the key advantages



of the Project is its deep ice-free area protected against storms that allows for accommodating vessels of high capacity. The Lavna CTT project includes the following components:

- ,Railway loading complex: rotary railcar dumper building (2 railcar dumpers), rotary railcar dumper building (1 railcar dumpers), thawing equipment, hangar for the transborder, humping tracks for loaded and empty railcars, unloading station for damaged railcars,
- Storage area: outdoor storage areas for coal, coal berth, conveyor transport system (CTS), mooring berth for port vessels, transfer points,
- Dust collection equipment,
- Mechanical repair workshop and logistics warehouse: repair warehouse, outdoor storage area, outdoor maintenance yard, surface wheeled vehicles parking,
- Administrative and social facilities: Administrative building with central control point and canteen, state border crossing point, security checkpoint,
- Firehouse site: firehouse, blowing agent storage, training area, training tower,
- Surface wastewater treatment facilities,
- Biological treatment station for domestic sewage,
- Auxiliary facilities and services: mechanical repair shop, materials storage,
- Outdoor facilities: sheltered storage space, repair area, vehicle garage, fuelling station, surface vehicle parking,,
- Engineering infrastructure and facilities,
- Pump stations,
- Transport safety infrastructure,
- Onsite roads and driveways, rail tracks, junction connecting the port rail access and Lavna railway station (its exact location will be specified in the Junction Site Selection Protocol), non-public rail access to the coal terminal boundary, bridge crossing over the Malaya Lavna river, utilities and infrastructure, other man-made structures.

The detailed layout of the Lavna CTT is presented in **Annex 2**.

The Project's design provides for advanced preventive and mitigation measures to effectively control coal dust emissions. Modern transshipment equipment from market leaders such as the Thyssenkrupp Industrial Solutions AG (Germany) is planned to be installed at the Terminal.

The development of the design documentation for the Lavna CTT project commenced in 2006-2007 when the Feasibility Study (TEO) for the Project was prepared⁴⁶.

⁴⁶ SoyuzMorNIIProekt OJSC (2007). Construction Management Plan // Lavna Coal Transshipment Facility at the Murmansk Sea Port. Feasibility Study (TEO). Volume 12.



The construction permit for the Project was issued in 2012, and then reviewed by the competent authorities and updated in 2018⁴⁷.

3.3. Associated Projects

The implementation of the Lavna CTT project is inextricably linked with the following three projects from a functional perspective:

1. Dredging operations and auxiliary fleet base construction including the navigation system;
2. Construction of the Vykhodnoy – Lavna public railroad;
3. Construction of the access railroad connecting Lavna Railway Station and the Lavna CTT's site.

The first two projects are financed from the federal budget as per the Concession Agreement⁴⁸. The proposed access railroad is part of the Lavna CTT project.

Bottom dredging works in the Project's marine area and the development of the navigation system will be carried out within the Project site. Therefore, there is a synergy of environmental impacts from the dredging works and the impacts from the general Terminal construction works. For this reason, bottom dredging are united with the CTT construction in a single OVOS Report⁴⁹.

Dredging Operations Project is not developed yet. The Dredging operations Designer will be selected at the end of 2018. It's expected that the project design will be done and approved by the end of 2019.

In this analysis, some parameters of Dredging operations (such as technology, volume of seawater soil, shops used, etc.) were taken from draft MTH and used on OVOS for rough estimations.

The Construction of the access railroad from Lavna Railway Station to the Lavna CTT's site: the first package of Project documentation has been developed in 2009⁵⁰. In 2019, the correction of the Project documentation will be done; the construction permits will be received.

Construction of the Vykhodnoy – Lavna public railroad has been started in 2015 and is still ongoing. The Bridge construction Project has been discussed on public hearings in 2017; the OVOS materials are available on the Kolsky District Administration Website.

⁴⁷ The Construction Permit No. RU51513307-12 (with amendments) for the Lavna Coal Transshipment Facility at the Murmansk Sea Port signed by Head of the Kola Region Administration on 2 August 2018.

⁴⁸ Key Terms and Conditions of the Concession Agreement on Construction and Operation of the Murmansk Sea Port Infrastructure Facilities. Approved by the Executive Order of the RF Government of 1 October 2018 No. 2111-r.

⁴⁹ YamalTransStroy OJSC (2018). Environmental Impact Assessment. Narrative Part (Book 1)// Lavna Coal Transshipment Facility at the Murmansk Sea Port. Design Documentation. Code 11-10/1-17-OOS8.2.1. Part 2, Volume 8.2.1.

⁵⁰ No pieces of the Project documentation of Construction of the access railroad from Lavna Railway Station to the Lavna CTT's site has been provided for GAP-analysis.



4. GAP-ANALYSIS APPROACH ASSAMPTIONS AND LIMITATIONS

4.1. General Approach

The ESIA Gap Analysis aims to analyse the national EIA (OVOS) of the Project (both the OVOS process and prepared documents) against the applicable BSTDB's E&S requirements, where any gaps were identified, to propose the corrective actions.

In undertaking the ESIA Gap Analysis of the Project, the Consultant completed the following tasks:

- conducted the desktop review of the OVOS Report and other relevant corporate and design documentation against the applicable BSTDB's E&S requirements;
- identified the gaps / non-compliances through the above comparative review;
- proposed corrective actions and recommendations on closing the identified gaps to ensure compliance with applicable BSTDB's E&S requirements; and
- prepared a dedicated Environmental and Social Action Plan (ESAP) for the Project.

The following methods were employed during this ESIA Gap Analysis:

- a review of the Project-related documentation;
- preparation of the Request for Documentation and Questionnaire to collect additional relevant information forwarded to STLC;
- a meeting at STLC Moscow office with Company management and the engineering, procurement, and construction (EPC) Contractor;
- a field trip to the Murmansk Region which included the following:
 - a visit to the Lavna CTT' site;
 - Interviews with the Lavna Commercial Sea Port LLC's managers;
 - a Meeting with the Kola District Administration;
 - a Meeting with the Head of Mezhdurechye Rural Settlement;
 - a Meeting with the Deputy Minister of Energy of the Murmansk Region.
- a comparative analysis of the provided Project-specific information against the BSTDB's Policy requirements and requirements of applicable EU/Global standards, and the GIIP standards; and
- an Internet search for information on the Project in the open sources and a descriptive analysis of the findings being incorporated in the overall gap analysis.

In the course of the ESIA Gap Analysis the Consultant reviewed a documentation package provided by STLC. The key Project-related documents reviewed by the Consultant included *inter alia*:

- the Design Documentation for the Project (technical parts);
- the EIA Report (OVOS), which is part of the Design Documentation;
- Project-related EHS permits and approvals; and



- reports on the engineering surveys of the Project area including engineering and hydrometeorological studies, and archaeological studies.

The full list of Project-related documents reviewed by the Consultant is provided in **Annex 3**.

4.2. Assumptions and Limitations

- The ESIA Gap Analysis was prepared based on the information provided by STLC and collected from open sources;
- the Consultant assumed the Company provided, to the best of their knowledge, reliable and complete information;
- the Company provided information:
 - on the proposed Lavna CTT (the reviewed Project-related documents are listed in **Annex 3**);
 - on the planned bottom dredging in the Project's marine area and development of the auxiliary fleet base construction including the navigation system in the OVOS Report for proposed Lavna CTT (2018).
- the Company did not provide information on the associated projects, namely on:
 - construction of the Vykhodnoy – Lavna public railroad;
 - construction of the access railroad connecting Lavna Railway Station and the Terminal's site.

For this reason, the ESIA Gap Analysis covered the Lavna CTT construction and, partly, bottom dredging works.

5. LAVNA CTT PROJECT: ESIA GAP ANALYSIS

Chapter 5 presents outcomes of the ESIA Gap Analysis for the Lavna CTT project.

Each section of the chapter refers to topics covered within the ESIA as per the BSTDB's Policy requirements (**Section 2.1.2**). For each issue within the topic existing information was summarized, and key gaps against BSTDB's E&S and, where relevant, national legislation requirements were identified. Where compliance gaps were identified, the Consultant suggested appropriate corrective actions presented in *Recommendations* subsections.

5.1. Environmental Impact Assessment and Stakeholder Engagement

For this topic consolidated recommendations on corrective actions are provided at the end of the section under *Recommendations* subsection.

5.1.1. EIA process and status

Existing information

The first version of the Project design documentation (Feasibility Study/TEO) was developed by SoyuzMorNIIProekt OJSC in 2007⁵¹. The OVOS Report was prepared

⁵¹ SoyuzMorNIIProekt OJSC (2007). Construction Management Plan. // Lavna Coal Transshipment Facility at the Murmansk Sea Port. Feasibility Study (TEO). Volume 12



as a part of Project design documentation. The Construction Permit has been issued by the Administration of the Mezhdurechye Rural Settlement on 22 June 2013 and is valid till 22 June 2020. According to the interview with the STLC management, it was issued on the basis of the Project design developed in 2008 and received the positive conclusion on State Environmental Review (SER) and state Review (SR) of 2008-2009 years; no documental evidence has been provided. This does not fully comply with the Russian legal requirements.

The design documentation has been revised in 2018 by YamalTransStroy OJSC. The OVOS process has been organized in one phase; the OVOS Report was prepared as a standalone document; the results were translated to the Project documentation⁵².

The Project design documentation including the OVOS Report has been submitted to the State Environmental Review; the positive SER conclusion is expected in the nearest days) both were in process. The submission to the State Review (GlavGosExperiza) will be done immediately after that.

Key gaps

- The OVOS process was organised in one phase that is partially compliant with the Russian legislation (the OVOS Regulation); the one-stage approach also do not meet GIIP standards for EIA of Category A projects.

5.1.2. Impact assessment coverage and alternative analysis

The Project's OVOS Report includes:

- the environmental baseline study which relies on the findings of the environmental engineering survey of the Project area⁵³;
- the analysis of a 'no-go' alternative;
- impacts on specific environmental components (ambient air, subsoil, groundwater, land resources, surface waters, aquatic biota, flora and fauna, and legally protected natural areas);
- community impacts resulting from chemical and physical factors;
- impacts related to waste handling;
- impacts related to industrial accidents.

⁵² YamalTransStroy OJSC (2018). Environmental Impact Assessment. Narrative Part (Book 1) // Lavna Coal Transshipment Facility at the Murmansk Sea Port. Design Documentation. Code 11-10/1-17-OOS8.2.1. Part 2, Volume 8.2.1.

YamalTransStroy OJSC (2018). Environmental Impact Assessment. Annexes, Graphical part (Book 2) // Lavna Coal Transshipment Facility at the Murmansk Sea Port. Design Documentation. Code 11-10/1-17-OOS8.2.2. Part 2, Volume 8.2.2.

⁵³ PI PetroKhimTekhnologiya JSC (2018). Lavna Coal Transshipment Terminal at the Murmansk Sea Port. Report on the Engineering and Hydrometeorological Studies. Explanatory Note. 11-10/1-17-IE2.5.1. Part 2. Volume 2.5.1.



5.1.3. Impact management

The OVOS Report consider the abovementioned specific impacts includes measures to prevent and/or mitigate negative impacts on respective environmental components or recipients.

In addition, the List of Environmental Protection Measures was prepared as a standalone volume of the Design Documentation⁵⁴.

Key gaps

- The social baseline analysis for the Project area is not present in the OVOS Report (2018). The social impact assessment for the Project was also not conducted.
- The absence of the social assessment during the OVOS partly complies with the Russian legal requirements and implementation practice and do not comply to BSTDB Policy requirements and GIIP standards.
- The analysis of Project's alternatives was limited to the 'no-go' alternative; possible siting and technological alternatives were not examined.

5.1.4. Stakeholder engagement and information disclosure

Project background experience on public consultations

The Lavna CCT Project is part of the Project for Integrated Development of the Murmansk Transport Hub. The public hearings on the MTH project were held on 28 September 2012 in Mezhdurechye and on 19 March 2012 in the administrative centre of the Kola District (Kola Town)⁵⁵.

Public hearings on the MTH project revealed the following key concerns of stakeholders, especially local residents, related to the Lavna CTT project:

- land-use right: the proposed facility as well as the associated facilities (the access railroad) was designed so that the Project sites would occupy lands that have actually been used by local residents for gardens and garages though the ownership rights for these land plot has not been legally registered;
- increased noise and vibration levels due to the facility operation;
- dust emissions: coal dust from the proposed Terminal was supposed to pollute the residential areas of the neighbouring villages (Mishukovo and Mezhdurechye).

⁵⁴ YamalTransStroy OJSC (2018). The List of Environmental Protection Measures (PMOOS).. Narrative Part (Book 1) // Lavna Coal Transshipment Facility at the Murmansk Sea Port. Design Documentation. 11-10/1-17-OOS8.3.1. Part 3, Volume 8.3.1.

⁵⁵ *Integrated Development of the Murmansk Transport Hub* (Position 30) // The Implementation Monitoring of Priority Investment Projects of the Federal Okrugs as of 1 October 2012. Available at <https://pandia.ru/text/78/104/6.php>.



Consultation activities in 2018

The public consultations on the Lavna CTT project has been organised in 2018 in one phase. The public hearings on the Project (one even) took place in Kola Town, at the Kola District Inter-Settlement Library on 20 March 2018.

The public hearings were organized in line with national regulatory requirements. The Information on the Project was made available for stakeholders prior to the event by.

- placing hard copies of the OVOS Report at the Department for Architecture, Construction and Roads of the Kola District Administration and at the Kola District Inter-Settlement Library;
- uploading an electronic copy of the OVOS Report at a webpage of the Department for Architecture, Construction and Roads of the Kola District Administration's official website⁵⁶.

The consultation event was announced in advance by posting relevant information on the official website of the Kola District Administration⁵⁷ and publishing announcements in the regional (*The Kolskoye Slovo*, *The Vecherniy Murmansk*) and federal (*The Rossiyskaya Gazeta*) newspapers.

The Minutes of the Public Hearings of 2018 was available and provided to the Consultant.

The Company stated that since 2012 the Project was revised to address stakeholder concerns, specifically, to move the Project site boundaries off from the residential areas and closely engaged with the community members and other stakeholders to improve their awareness of the Project, potential environmental impacts and mitigation measures incorporated into the design to minimise these impacts. The mitigation measures included *inter alia*: i) application of the modern coal handling technology; ii) optimal siting of the Terminal to take advantage of the natural factors and local topography in order to provide natural wind barriers for coal handling areas and thus reduce dust emissions.

Therefore, many of the public concerns raised in the past have been addressed and resolved. For example, at the 2018 public hearings there was a question on managing coal dust removed accumulated at the dust aspiration unit instead of dust emissions. As a result, local community members who took part in the public hearings on the Lavna CTT project in March 2018 supported the Project.

Key gaps

- According to the Russian legislation, public consultations should be provided at all three phases of OVOS process (**Section 2.2**);

⁵⁶ Kola District Administration (2018). *Lavna Coal Transshipment Facility* // Environmental Impact Assessment Materials // Department for Architecture, Construction and Roads // Kola District Administration's official website. Available at http://akolr.gov-murman.ru/administratsiya/otdely_komitety/otdel-arkhitektury-stroitelstva-i-dorozhnoy-deyatelnosti/materialy-po-otsenke-vozdeystviya-na-okruzhayushchuyu-sredu.php.

⁵⁷ Kola District Administration (2018). *Lavna Commercial Sea Port LLC Will Hold Public Hearings on EIA Materials for Lavna Coal Transshipment Facility*. 16 March 2018. Available at <https://akolr.gov-murman.ru/news/prensa/247077/>.



- neither stakeholder identification nor analysis has been done within OVOS process; stakeholder identification and analysis is not required by the Russian legislation but its absence is an evident gap as per the BSTDB Policy requirements and GIIP standards.

In order to close this gap, stakeholders identification and analysis was carried out and presented in the Project's Stakeholder Engagement Plan (SEP);

- no Grievance Mechanism (GM) for affected stakeholders has been developed within the OVOS process. The GM for affected stakeholder is not required by Russian legislation, but its absence is an evident gap as per the GIIP standards.

The GM was developed within the SEP preparation. Now the Company has to implement it to close the gap.

Recommendations (for Section 5.1)

The following corrective actions are recommended to close the gaps and ensure compliance with BSTDB's requirements and GIIP standards:

- Develop *Addendum to ESIA* that should cover issues missing in the OVOS Report and the Project Design Documentation as a whole:
 - conduct the Social Baseline Studies and Social Impact Assessment at least at the three levels: Murmansk Region, Kola District and Mezhdurechye Rural Settlement (including Mishukovo Village);
 - examine technically and economically feasible Project alternatives (alternative Project sites and technologies) and explain reasons for the choice of the preferred one(s).
- Implement the Project's SEP and support it workable through the Project lifecycle, inter alia, the following:
 - conduct ESIA consultations as proposed in the SEP;
 - plan and implement ongoing stakeholder engagement;
 - conduct the SEP implementation monitoring and reporting to interested parties;
 - revise and update the SEP on annual basis.

5.2. Environmental and Social Management

5.2.1. National compliance

According to the interview with STLC management, the following permitting documents have been received on the basis of the Project Design Documentation (2008):

- State Environmental Review Conclusion;
- State Review Conclusion;
- Construction Permit.

The only document provided to the Consultant was the Construction Permit of August 2018. The status and dates of other documents listed above should be double-checked for evaluation of the national compliance status.



5.2.2. Project EHS structure and responsibilities

Existing information

As described above, the Project is being implemented by two companies: STLC and its daughter company Lavna Commercial Sea Port LLC. The organizational structure of Lavna Commercial Sea Port LLC is presented on **Figure 3**.

EHS function is not present in the organizational structure of both companies; it is unclear how responsibilities for Project's E&S performance are distributed.

Key gaps

- The situation when EHS responsibilities are not clearly distributed doesn't comply with of the Russian legislation as well as GIIP standards; this pose a considerable risk of poor EHS performance and require immediate corrective actions.

Recommendations

The EHS organizational structure should be developed and implemented in both companies. At the first phases, the following positions are recommended as minimal:

- STLC: top-level EHS manager reporting to the General Director who will supervise the Lavna CTT Project and communicate with BSTDB and other lenders (if any);
- Lavna Commercial Sea Port LLC:
 - at the construction phase: Environmental Manager and OHS Manager;
 - at the operational phase: a diverse EHS structure shall be developed and implemented;
- the EPC contractor: the modern EHS Project structure should be developed.

More detailed recommendations on the EHS management structure will be presented in *the Addendum to ESIA*.



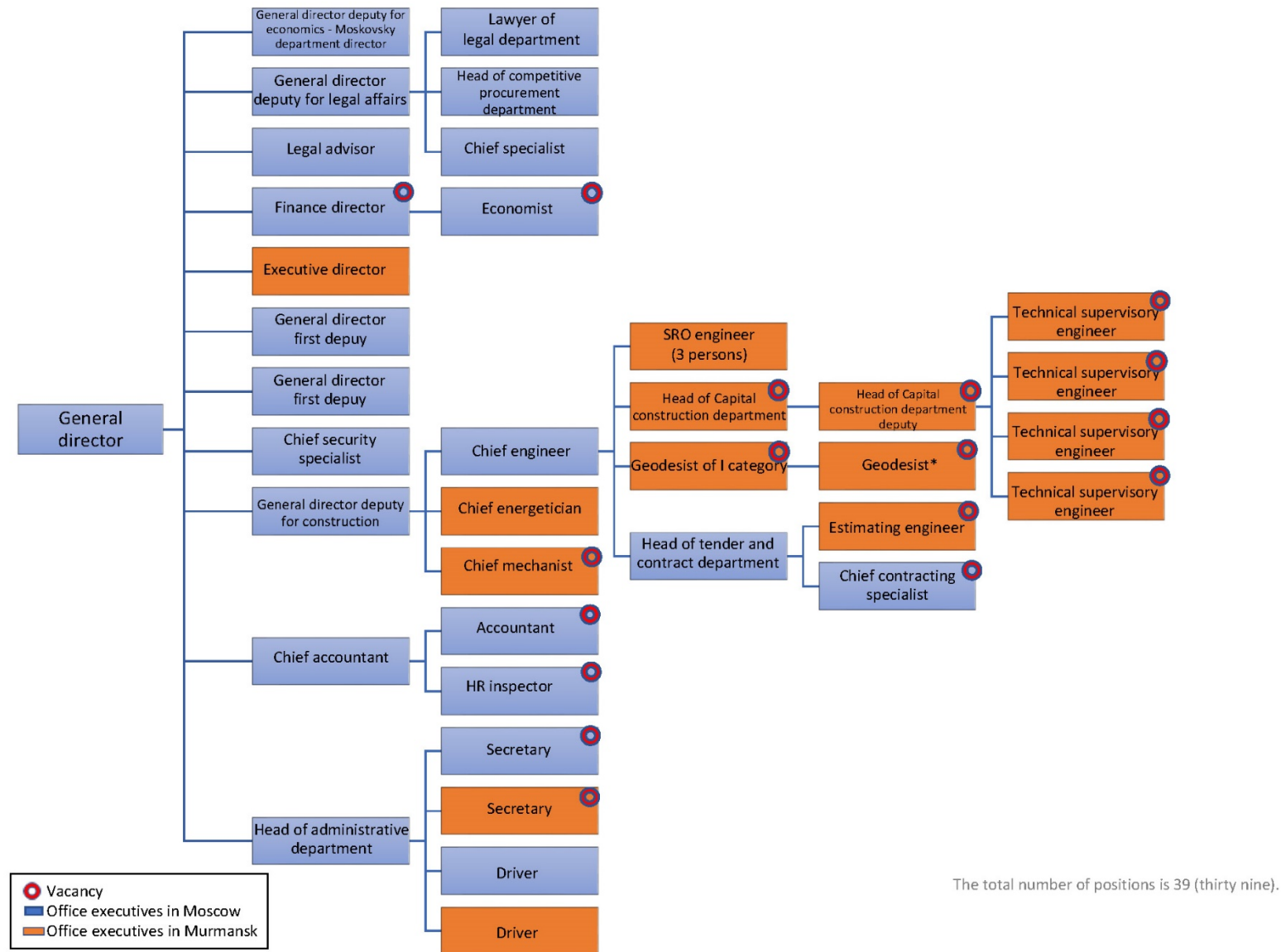


Figure 3. Organizational structure of Lavna Commercial Sea Port LLC



5.2.3. EHS management system status

Existing information

No EHS management system exists both at STLC and Lavna Commercial Sea Port LLC

Key gaps

- No EHS management system exists both at STLC and Lavna Commercial Sea Port LLC. The lack of the modern EHS system does not comply GIIP standards and pose a considerable risk of poor EHS performance.

Recommendations (for Section 5.2)

When developing the Addendum to the ESIA, it is recommended to:

- in the short-term perspective – commence development and implementation of the Project's EHS management system;
- pay the special attention to the EHS management system of the EPC Contractor.
- in the longer-term perspective - develop and implement the overall EHS management systems both at STLC and Lavna Commercial Port LLC.

5.3. Labour and Working Conditions, Occupational Health and Safety

5.3.1. Labour and working conditions

Existing information

According to the Construction Management Plan being part of the Feasibility Study of the Project (2007)⁵⁸ the Lavna CTT is planned to be built in three phases with the following duration:

- 1st phase - 60 months;
- 2nd phase - 33 months;
- 3rd phase - 27 months.

The labour requirements for the Project's construction phase were estimated based on the national guidelines⁵⁹.

- 1st phase – 495 employees;
- 2nd phase – 108 employees;
- 3rd phase – 84 employees.

According to the interviews with the Company's management it is planned to attract the duty tour employees for construction works.

⁵⁸ SoyuzMorNIIProekt OJSC (2007). Construction Management Plan // Lavna Coal Transshipment Facility at the Murmansk Sea Port. Feasibility Study (TEO). Volume 12.

⁵⁹ Rules for Estimation of Workforce for Construction Works for the Transport and Communications Industry (1965).



Key gaps

- Although it is reportedly planned to attract duty tour employees for Project's construction phase the Project design documentation did not include design solutions (and pertinent estimates) on organising a construction camp;
- the available Project-related documents did not contain any information about labour requirements for the operation phase; no information was provided on whether it is planned to employ local residents or attract migrant workers during Project's operation phase;
- no information on securing human rights at workplace and managing working relationships both at the at the construction and operation phases was present in the available Project-related documents;

According to the general practice in the Russian Federation if the employment contract with an employee is concluded, compliance with labour laws, and therefore most of ILO's conventions is ensured. However, this does not apply for to other forms of managing working relationships (civil-law forms of contracts, sub-contraction). Migrant workers from outside Russia may also be in a vulnerable position.

Recommendations

Considering the above, the following actions are recommended:

- develop an HR Policy determining the employment principles that would be compliant with the national legislation requirements as well as relevant ILO's conventions on human and labour rights;
- for the construction phase – develop the detailed workers accommodation plan based on the national legislation requirements and GIIP standards;
- for the operation phase: i) estimate the labour requirements for the proposed facility; ii) develop an Employment Plan that would be based on the principles of respecting human and labour rights and give certain preferences to job applications from local residents.

5.3.2. Occupational health and safety

Existing information

Occupational health and safety issues for construction phase are summarized in the Project's Construction Management Plan being a standalone volume of the Feasibility Study (TEO) documentation⁶⁰. Its OHS section refers to the relevant national legislation and provide OHS instructions for employees engaged in construction works including General Provisions and OHS During Bottom Dredging works.

Fire safety requirements during construction works are summarized in a separate section of the Construction Management Plan.

Other parts of the design documentation that may contain information on OHS-related design solutions for operation phase were not available for review.

⁶⁰ SoyuzMorNIIProekt OJSC (2007). Construction Management Plan // Lavna Coal Transshipment Facility at the Murmansk Sea Port. Feasibility Study (TEO). Volume 12.



Key gaps

- The data on occupational Health and Safety and Fire Safety during the operation phase was not provided for the Consultant's review.
- The observations during the site visit revealed the low OHS culture with the evidence including inter alia:
 - the absence of the OHS induction for visitors,
 - the lack of Personal Protective Equipment (PPE) use;
 - no OHS manager exists on the Construction site.
- The current level of OHS culture poses a considerable risk of poor OHS performance and require immediate corrective actions.

Recommendations

When developing the Addendum to the ESIA, it is recommended to:

- obtain and analyse information on Project solutions during the operation phase; make sure occupational health hazards and risks during operation phase are identified and assessed in line with GIIP standards;
- develop an OHS Management Plan for construction and operation phases in line with GIIP standards;
- after commissioning into operation conduct a Special Assessment of Working Conditions (Workplace Assessment) as per the national legislation requirements and communicate the results to employees and competent authorities.

5.3.3. Occupational safety

Existing information

In addition to abovementioned fire safety provisions, the identification of potential emergencies during the construction and operation of the facility has been conducted within the OVOS⁶¹. The scenario of total destruction of the facility was not considered. An assessment of the impact of the identified emergency situations on the environment and its components has been carried out. The recommendations on prevention and remediation of consequences of the possible emergency situations are developed.

According to the OVOS Report (**Section 5.12**) possible emergencies during the construction phase are associated with the spill of petroleum products.

During the CTT operations potential emergencies are associated with i) the spill of petroleum products, and ii) explosion of coal dust during coal handling operations.

⁶¹ YamalTransStroy OJSC (2018). Environmental Impact Assessment. Narrative Part (Book 1) // Lavna Coal Transshipment Facility at the Murmansk Sea Port. Design Documentation. Code 11-10/1-17-OOS8.2.1. Part 2, Volume 8.2.1.



Key gaps

- The scenario of the total destruction of the facility was not considered among potential emergencies during the construction phase;
- the hazard class of the facility per national legislation requirements was not identified;
- the Emergency Response Plan was not been submitted.

Recommendations

When developing the Addendum to the ESIA, it is recommended to:

- determine the hazard class of the proposed facility in line with national legislative requirements;
- consider the scenario of the total destruction of the facility as one of the potential emergencies;
- develop the Emergency Response Plan for the Lavna CTT's construction and operation phases.

5.4. Pollution Prevention and Abatement

5.4.1. Climate studies

Existing information

The analysis of the Project's area climate and waters was conducted based on the long-term monitoring data obtained from the Murmansk Hydrometeorological Station (HMS) in 2017 and presented in the Report on the Engineering and Hydrometeorological Studies⁶². The key climate characteristics of the area are available in 2018 Report on the Geotechnical and Hydrometeorological Studies⁶³.

The HMS is located in the north-western part of the Kola Peninsula, in the rocky forest-tundra zone on the eastern shore of the Kola Bay. Meteorological observations have been carried out permanently since 1917, the HMS was relocated twice. In November 1934, the station was moved to the Khaldeev Cape, where it is currently positioned. The meteorological site is located on the top of a hill, 400 meters from the water edge of the Kola Bay. The distance between the station and the project area is around 9 km.

There are two marine posts on the Kola Bay shore – the first one has been in operation at the territory of the Murmansk Commercial Sea Port since 1983, the second one is part of Polyarnoye HMS located in Polyarny, on the Ekaterininskaya Harbour bank, at the exit from the Kola Bay. The sea level fluctuations are continuously recorded at both marine posts with tide-gauge. This data is used for

⁶² The Report on the Engineering and Hydrometeorological Studies Conducted on Terrestrial Lands and Marine Area of the for Lavna Coal Transshipment Terminal Project at the Murmansk Sea Port (2017)(code 11-10/1-17-IGM2.2.1, code 11-10/1-17-IGM2.2.2) – report was not provided to the Consultant.

⁶³ PI PetroKhimTekhnologiya JSC (2018). Lavna Coal Transshipment Terminal at the Murmansk Sea Port. Report on the Engineering and Hydrometeorological Studies. Explanatory Note. 11-10/1-17-IE2.5.1. Part 2. Volume 2.5.1



calculating the time and levels of high and low waters and compiling marine forecasts for the navigation of ships in the Kola Bay.

The presence of the state system of the long-term regular meteorological monitoring, including observations of the sea level dynamics, allows for conducting operational weather forecasts, including forecasts of adverse weather conditions, and make quick decisions based on this information. In particular, for the safe navigation of coal transshipment vessels, both within the Kola Bay water area and at the exit from it.

During the coal transshipment process, the formation and dispersion of coal dust largely depends on the direction and strength of the wind, humidity and precipitation. Therefore, the accurate determination of these meteorological parameters directly on the site and the forecast of their dynamics is extremely important for making quick decisions on reducing the generation and spread of coal dust.

The Murmansk HMS and the Project site are at a 9km distance, located on the opposite shores of the bay on different terrain. Consequently, the operational synoptic data of Murmansk HMS does not fully reflect the actual meteorological parameters of the Project area. This is particularly valid for the wind load parameters.

For a more accurate measurement of the wind load and reliable operational forecasts of its change and impacts on the formation and transfer of coal dust, a portable automated weather station should be installed and equipped with sensors for wind direction and speed, humidity, temperature, pressure, etc. Thus, during the construction phase of the terminal, a biennial meteorological data array will be accumulated, which will make it possible to clarify the wind speed and wind direction parameters used for calculating the emissions of coal dust and other pollutants and, if necessary, adjust the calculation results when the terminal becomes operational.

The documentation provided for review does not include an assessment of Project's impact on climate change. This impact should be considered in the Addendum to the ESIA for the Project. Information on the GHG emissions contributing to climate change is provided in **Section 5.4.2**.

Key gaps

- The general climatic characteristics of the Murmansk Region and the Project area are presented in the OVOS Report and the PMOOS. For more detailed seasonal weather characteristics, the results of the engineering and hydrometeorological studies carried out in 2018 should be used (this report was not available during the current ESIA Gap analysis);
- measurements of meteorological parameters were not carried out within the Project area and, most importantly, measurements of the wind regime for different seasons of the year;
- Project's impact on climate change was not assessed in the OVOS Report.

Recommendations

In order to achieve compliance with BSTB Policy requirements and GIIP standards, it is recommended:

- install a portable weather station for measurements of meteorological parameters (including wind speed and direction, temperature, precipitation, and humidity) during the construction phase to gather data for the operation phase. The choice of the station's location will be determined jointly by the Company and the Project designer;



- carry out the assessment of the Project's impact on the climate change when developing the Addendum to the ESIA for the Project.

5.4.2. Climate change impact and GHG emissions

Existing information

The documents provided by the Company do not contain information on the GHG emission inventory and estimated emission volumes for both construction and operation phases of the Project.

Since in Russia GHG reporting will become mandatory for maritime transport organisations since 2024 (see **Section 2.2**), i.e. shortly after completion of the construction works and commissioning the Terminal, it is recommended to take proactive action and amend the existing OVOS by the GHG emission inventory/assessment and proposed emission reduction measures.

In line with the GIIP standards GHG emission inventory and reporting is a mandatory requirement for projects generating or expected to generate over 25,000 tonnes of CO₂-equivalent per annum (both direct and indirect).

Therefore, assessment of GHG emissions is necessary to ensure compliance with both national (in the short-term perspective) and international requirements.

Key gaps

- GHG emissions were not estimated in the documents provided to the Consultant.

Recommendations

In order to achieve compliance with the current GIIP standards' and prospective national regulatory requirements, it is recommended to:

- prepare the inventory of direct and indirect GHG emission sources and conduct the assessment of GHG emissions for the Project using nationally recognized guidance documents and recommendations and internationally recognized methodology;
- define and implement GHG emission reduction measures and monitoring programme according to GIIP standards;
- during the Project operation phase prepare annual GHG emission reports;

5.4.3. Air quality baseline

Existing information

In the Murmansk Region air quality monitoring is performed by the Centre for Environmental Pollution Monitoring, being part of the Murmansk Department on Hydrometeorology and Environmental Monitoring⁶⁴.

⁶⁴ Murmansk Department on Hydrometeorology and Environmental Monitoring (2018). Centre for Environmental Pollution Monitoring // Murmansk Department on Hydrometeorology and Environmental Monitoring's official website. Available at <http://kolgimet.ru/monitoring-zagrijaznenija-okruzhajushchei-sredy/centr-monitoringa-zagrijaznenija-okruzhajushchei-sredy/?type=atom>



On the shores of the Kola Bay, the stationary air quality monitoring posts are located in three cities: Murmansk, Kola and Severomorsk. The measurements of air quality at the posts are performed both by the sampling method and using automated air quality analysers.

The nearest monitoring post is located in Murmansk, however, the monitoring results from this station are not relevant for the Project area as it is located at a large distance from the Project site and in large city. In response to a formal request, the Murmansk Department on Hydrometeorology and Environmental Monitoring provided information on the background concentrations at the Project site calculated on the basis of the official statistical data for settlements with a population of less than 10,000 people⁶⁵ (the population Mezhdurechye and Mishukovo villages in the Project site vicinity is 1,027 and 255 people respectively⁶⁶).

Only one-time measurements of the air quality have been performed in environmental engineering survey (averaging time is 20 minutes). The calculated and measured one-time concentrations of pollutants do not exceed the Russian air quality standards.

However, in order to correctly define background air pollution levels (air quality baseline) daily instrumental measurements should be conducted before the beginning of the construction phase. Since the construction works are already underway since July 2018 and now include the site preparation works (earthworks, blasting), logging and burning of wood residues from forest cuts during Project site cleaning, work of vehicles and special equipment, including self-propelled machines (**Figure 4**), the correct estimation of the background concentrations can only be made with regards to the specific wind directions.

⁶⁵ Federal Service on Hydrometeorology and Environmental Monitoring (Roshydromet) (2013). Temporary Guidelines "Background Concentrations of Harmful (Polluting) Substances for Cities and Towns Where Regular Air Pollution Measurements Are Not Performed for 2014-2018" (approved by Roshydromet on 27 March 2013)

⁶⁶ Mezhdurechye Rural Settlement Administration (2018). The Passport of the Mezhdurechye Rural Settlement, of the Kola District, Murmansk Region of 3 January 2018 . Available at <http://adm-mo.ru/pasport-poseleniya.html>





A



B

Figure 4. Construction works at the Lavna CTT's site (Mezhdurechye Village is seen on Picture A on the horizon)

It should be noted that in Russia air quality is usually assessed using:

- the one time concentrations of pollutants with the averaging time of 20 minutes of measurement or sampling (C_{max});
- the daily average concentrations of pollutants determined based on the results of four measurements per day with six-hour interval, performed within 20 minutes, i.e. the measurements are averaged over a total measurement time of 80 minutes (C_{da-80});
- the daily average concentrations of pollutants determined in a continuous mode at the automatic air quality monitoring posts (C_{da}). However, there are

only few stations of this type in the Russian Federation (mainly in large cities).

At the same time, according to WHO Air Quality Guidelines⁶⁷ considered as a Global standard for the Project, the measurement time for daily average concentrations should be not less than 75% of the 24-hour interval. Therefore, direct comparison of measured C_{da-80} per national guidelines and the WHO's C_{da} standards is not correct.

For the future once a year, it is recommended to conduct daily measurements of key pollutant concentrations at the boundaries of nearest residential areas in order to monitor compliance with hygienic standards during the construction phase. When construction works are completed instrumental measurements of daily average concentrations of pollutants should be carried out with results of these measurements to serve as a reference for environmental monitoring during the Terminal's operations.

Key gaps

- The Project-related documentation available for review includes only general description of air quality in the Murmansk Region. Only pollutant concentration estimates were provided for the Project area; no measurements of background pollutant concentrations were carried out in the Project area before the construction phase.
- Air quality at the boundaries of the nearest residential areas has not been monitored during the construction phase.

Recommendations

In order to achieve compliance with BSTB Policy requirements and GIIP standards, it is recommended to:

- during the construction phase conduct daily average measurements of key pollutants' concentrations at the boundaries of the nearest residential areas in Mezhdurechye and Mishukovo villages in order to monitor compliance with hygienic standards (1-2 times per year);
- develop an air quality monitoring programme for the operation phase in line with the GIIP standards.

5.4.4. Air pollution

The sources of pollutant emissions during the Lavna CTT construction and operations and the assessment of their impact on the air quality are defined in the OVOS (2018) and PMOOS (2018) volumes.

The calculations of emissions were conducted using methodologies approved for application in the Russian Federation⁶⁸. The emission dispersion modelling and calculation of ground-level pollutant concentrations were carried out using special software for calculating the atmospheric pollution (The Ecologist, Version 4.5). The

⁶⁷ World Health Organisation (WHO) (2005). Air Quality Guidelines Global Update 2005. Particulate matter, ozone, nitrogen dioxide and sulfur dioxide. Available at http://www.euro.who.int/_data/assets/pdf_file/0005/78638/E90038.pdf?ua=1

⁶⁸ Atmosphere Research and Development Institute (2017). The List of Methodologies to be Used in 2018 to Calculate, Standardize and Control Emissions of Air Pollutants. Approved by the Order of General Director of Atmosphere Research and Development Institute of 12 December 2017.



calculations were conducted for the summer period and for the wind directions and speeds, typical for the project area.

Calculations of air pollution were performed in the local coordinate system for a modelled area of 8,000 × 8,000 m, with a grid spacing of 250 m.

Existing information

Construction phase

The duration of the Lavna CTT construction phase is 32 months under the 24-hour regime of the construction works (OVOS).

The Project design documentation (Volume 8.2.1) identifies the following main types of construction works generating emissions:

- cut and fill works, construction of access roads - removal of the topsoil layer, earthworks, drilling and blasting, transport works;
- inspection of the sea bottom by diving works;
- bottom dredging in the Project's marine area to ensure a depth of 22.3 m;
- construction of moorings and coastal facilities;
- construction of buildings and structures.

The calculations of the air pollution levels are performed for the period when the highest levels of emissions are expected during the simultaneous operation of various construction equipment⁶⁹. Calculations were conducted for 18 pollutants (6 solids and 12 gaseous and liquid substances) and four summation groups.

The estimated emissions during the construction phase totals 434.72 tpa including 11.05 tpa of solid substances, and 423,67 tpa of gaseous and liquid substances.

The results of emission dispersion modelling and calculations of pollutant concentrations performed according to the national regulatory requirements showed that during the construction phase ground-level concentrations of pollutants at the boundaries of the nearest settlements do not exceed 0.1 MPC_{max} for populated areas, and, therefore, the impact on the air quality is expected to be acceptable.

However, it should be noted that emissions calculations did not include emissions from blasting operations and formation of gas and dust clouds, as well as emissions from burning forest residues. Accounting of these emissions can lead to a significant increase in the total amount of emitted substances and to higher ground-level pollutants concentrations.

The standards for one-time concentrations of pollutants on the ambient air (MPC_{max}) adopted in in Russia differ from the WHO standards for peak concentrations in terms of averaging periods (see **Section 5.4.2**). Therefore, it is not correct to compare the results of emission calculations and WHO standards for some pollutants.

⁶⁹ The list of equipment affecting the air quality includes 61 items (trucks and special vehicles, floating equipment, construction equipment, etc.)



The air quality impact assessment in line with GIIP standards envisions applying internationally recognized dispersion models (e.g. AEROMOD, CALPUFF, the US EPA regulatory model). Such calculations are necessary to ensure better comparability of emission dispersion modelling results and their evaluation in accordance with the current international practice.

In the Russian practice pollutant dispersion modelling should also be conducted to define and approve the size of the sanitary protection zone (SPZ) (see **Section 5.3.** for details) and assess human health risks for population of the affected areas.

Operation phase

The key CTT operations are the following:

- Transshipment of coal from rail transport to the sea transport;
- Technological accumulation and temporary storage of coal at storage sites;
- Adjusting of the coal quality by sorting, mixing, crushing, averaging, and cleaning;
- Ship maintenance, operations with freights.

The facility operates 24-hours a day, year-round. The key CTT operations result in emissions from processing of dusty bulk cargoes. Other sources of emissions are auxiliary technological processes such as operation of automatic loading machinery, diesel locomotives, vessels (both those used for coal shipping and auxiliary ones), as well as repair works and equipment refuelling.

All components of the conveyor transport system (CTS) where the highest emissions are expected, are equipped with devices to reduce emissions of coal dust - conveyor covers and enclosures, aspiration equipment, and sealing gaskets at the joints. It is planned to use bag filters for cleaning of the dust-and-air mixture at the filling stations. The maximum cleaning efficiency of the filters is 99.9% (according to the manufacturer).

The inventory of emission sources during the Terminal operation phase (Volume 8.2.1) covers 123 emission sources of pollutants including 71 diffuse and 52 point emission sources. The inventory identified 39 pollutants, of which 10 are solid substances and 29 are liquid and gaseous substances were included. The estimated emissions during operations may total 187.68 tpa including 56.78 tpa of solid substances and 130.90 tpa of liquid and gaseous substances.

The amounts of coal dust emissions are expected to be 53.95 tpa or 28.7% of the total emissions; significant emissions are also estimated for carbon monoxide, nitrogen dioxide, sulphur dioxide, and petroleum oil. In total, these key pollutants account for 93.6% of the total emissions (**Figure 5**).



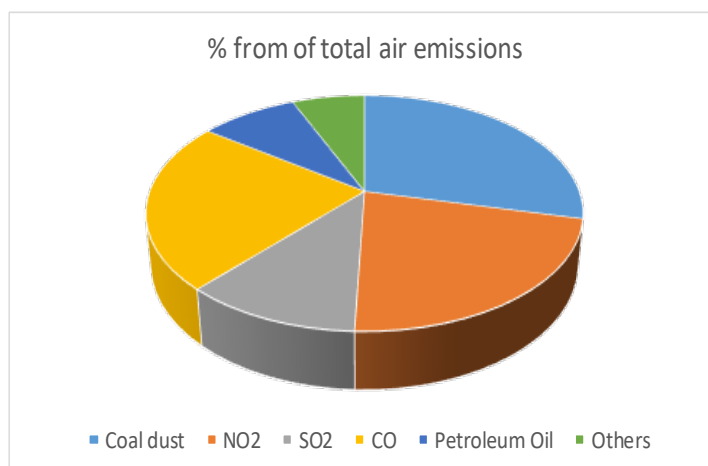


Figure 5. Lavna CTT's pollutant emissions during the operation phase

The results of emission dispersion modelling and calculations of pollutant concentrations performed according to the national regulatory requirements showed that during the operation phase ground-level concentrations of pollutants at the SPZ boundary and at the nearest residential area do not exceed MPC_{max} values for populated areas. Therefore, the impact on the air quality is expected to be acceptable.

Overall, the current characterisation of pollutants emissions and their dispersion is provided for all types of activities, the measures have been developed to reduce emissions and impacts on the nearby recipients.

However, modelling outcomes and pollutant concentration estimates based on the Russian dispersion models cannot be used to estimate risks to public health, as well as to compare modelling results with those received when using internationally accepted methodologies.

BAT application will help to reduce Project-related emissions and resulting impact on ambient air quality.

The Lavna CTT's design already includes technical solutions to reduce coal dust emissions including dust suppression through spraying, closed conveyors, aspiration equipment and filters, sealing of joints, installation of perforated screens in the warehouses, etc.

In addition, a section of the design documentation on reducing pollutant emissions stipulates that all vessels shall be equipped with imported diesel engines which comply with requirements of the International Convention for the Pollution from Ships (MARPOL 73/78).

As mentioned in **Section 2.2**, as part of ITS 46-2017, a special section on applicable BATs for coal transshipment at sea ports will be approved by the end of 2018. The use of BAT approach for such activities is planned to become compulsory; this condition be included in the Engineering and Technical References "On the Safety of Maritime Transport Facilities". Therefore, Lavna CTT's design shall comply with a requirement to apply BAT in order to reduce emissions, discharges and waste generation during the coal handling operations.

Key gaps

Construction phase



- the estimation of pollutant emissions and calculation of their ground-level concentrations does not include emissions associated with blasting operations and from burning of wood residues from forest cuts during Project site cleaning;
- the emission dispersion modelling and calculations of ground-level pollutant concentrations was performed using national models and methodologies; the modelling results cannot be used for as input data for assessment of health risks for affected communities during the construction phase required by law. In order to receive necessary input data for health risk assessment, internationally recognized models should be applied.

Operation phase

- the emission dispersion modelling and calculations of ground-level pollutant concentrations was performed using national models and methodologies; the modelling results cannot be used for as input data for assessment of health risks for affected communities during the operation phase required by law. In order to receive necessary input data for health risk assessment, internationally recognized models should be applied;
- the design solution does not envisage application of BATs for reducing Project-related emissions while BAT application is currently required to ensure compliance with both national legislation and Global/GIIP standards.

Recommendations

In order to achieve compliance with BSTB Policy requirements and GIIP standards, the following actions are recommended.

For *construction phase* during development of the *Addendum to ESIA* is recommended to:

- conduct emission dispersion modelling and calculations of ground-level pollutant concentrations using internationally recognized models (e.g. AEROMOD, CALPUFF, the US EPA regulatory model) to provide input data for assessment of health risks for affected communities during the Project's construction phase.

For *operation phase* it is recommended to:

- during the development of the Addendum to ESIA, evaluate the Project against BAT requirements, both against to the EU BAT Reference Documents (EU BREF Emissions from Storage, 2006) and the Russian Reference Document (ITS 46-2017 "Reduction of Emissions of Polluting Substances During Storage and Warehousing of Goods (Cargo)");
- conduct emission dispersion modelling and calculations of ground-level pollutant concentrations using internationally recognized models (e.g. AEROMOD, CALPUFF, the US EPA regulatory model);
- the health risk assessment (HRA) during the Project's operation phase for affected communities has to be done on this basis.



5.4.5. Noise and Vibration

Existing information

Only one-time (day and night) measurements of the levels of the noise and vibration have been studied in environmental engineering survey (averaging time is no more than 20 minutes).

In the OVOS Report noise impact was assessed for day-time and night-time periods according to the national methodologies using ARM Acoustics 3D software, Version 3.2.1.

Construction phase

During the construction and bottom dredging works, the main sources of noise will be vehicles, construction machinery, fleet technical equipment, diesel and compressor installations, and drilling and blasting operations. However, the inventory of noise and vibration sources and estimations of sound levels do not consider drilling and blasting operations.

The noise impact calculations were conducted for the period of the most intensive construction works (the third year of the construction phase) for day-time and night-time periods. During this year, the construction of almost all major facilities is to be carried out, and all the variety of construction equipment is utilized to a maximum possible extent.

The calculation results demonstrated that the obtained values of equivalent and maximum sound levels at the boundary of the residential area do not exceed the established guideline values⁷⁰. In order to reduce the noise impact, a set of measures has been proposed to reduce the noise impact on the nearest recipients to levels that do not adversely affect the population of the nearest settlements.

It should be noted that information on sources of vibration at the construction phase (drilling and blasting, etc.) is not provided in the OVOS Report. Also, the impacts of vibration on the recipients (personnel, population of the nearby settlements and wildlife in the Project site vicinity) are not examined.

Operation phase

The following activities during the operation phase of the Lavna CTT will serve as the major noise sources:

- sea fleet movement in the water area of the mooring zone;
- reloading equipment operation at the coal storage and reloading sites;
- movement of trucks across the Terminal territory;
- ventilation systems operation;
- operation of electric transformer and power distribution stations;
- train movements across the Terminal territory to coal transshipment sites.

⁷⁰ SN 2.4 / 2.1.8.562-96. Sanitary Standards. Noise at Workplaces, within Residential and Public Buildings, and within Residential Areas.



During the inventory 100 noise sources were identified (including 63 permanent and 27 non-permanent noise sources).

The noise impact calculations were conducted for day-time and night-time periods. Equivalent and maximum sound levels were calculated were made for 13 monitoring points located at the boundaries of SPZ and the nearest residential areas of Mezhdurechye, Mishukovo and Minkino villages.

As determined in the OVOS and PMOOS the main source of vibration during the Lavna CTT operations is the train movement across the territory of the Terminal. Evaluation of the expected impact of vibration on the nearest recipients was performed based on review of results of instrumental measurements conducted for a similar facility (PertoLesPort OJSC's Terminal at the St. Petersburg Large Sea Port). The measurements results demonstrated that vibration levels exceeded the maximum permissible values within 100m from the facility, however at distances of more than 100 m from the facility vibration levels should be below the national guideline values⁷¹.

Since the nearest residential housing is located at a distance of about 500 m from the access railroad and the size of the Terminal's SPZ is also 500 m, vibration levels at the boundary of the Terminal's SPZ and the nearest residential area are not expected to exceed the guideline values.

In the Construction Management Plan (being part of the Project Feasibility Study (2007) it is indicated that vibratory rollers will be used during construction works. However, impact of this equipment was not considered during assessment of Project-related vibration levels.

Key gaps

- The presented description of noise sources for the construction phase and the noise impact assessment covers all activities/facilities of concern except for drilling and blasting operations;
- the noise impact assessment for the operation phase showed according to the Russian standards, the expected sound levels at the monitoring points generated by all Terminal's noise sources do not exceed the guideline values for daytime and night-time periods⁷²;
- the presented characteristics of railway transport as a source of vibration for the operation phase, and analysis of the vibration impacts by the similar facility method are appropriate to assess the impact both in accordance with the requirements of the Russian legislation and GIIP standards. However, the impact assessment did not considered impact of vibratory rollers to be used on site during construction works;

⁷¹ SN 2.2.4 / 2.1.8.566-96. Sanitary Standards. Production Vibration, Vibration within the Residential and Public Buildings.

⁷² SN 2.4 / 2.1.8.562-96. Sanitary Standards. Noise at Workplaces, within Residential and Public Buildings, and within Residential Areas



Recommendations

In order to achieve compliance with BSTB Policy requirements and GIIP standards during the *construction phase* the following actions are recommended:

- during development of the *Addendum to ESIA* amend the performed noise impact calculations by estimates of noise impact from drilling and blasting operations; assess their impact on the population of the nearby settlements and propose appropriate preventive and/or mitigation measures;
- during development of the *Addendum to ESIA* perform calculations of the vibration effects on the nearest recipients (residential areas) during the construction phase;
- monitor compliance with the health-based guidelines by performing instrumental measurements of the sound levels and vibration levels at the boundaries of the nearest residential areas (once a year).

In order to achieve compliance with BSTB Policy requirements and GIIP standards during the *operation phase* the following actions are recommended:

- during development of the *Addendum to ESIA* amend the performed assessment of vibration impact with calculation of vibration levels from operating vibratory rollers;
- at the beginning of the Terminal's operation phase conduct instrumental measurements of vibration levels at all reference points to compare the calculated and actual values of vibration levels; instrumental measurements of vibration levels need to be incorporated into the existing Environmental Monitoring Program;
- monitor compliance with the health-based guidelines by performing instrumental measurements of the sound levels and vibration levels at the boundaries of the nearest residential areas (once a year).

5.4.6. Soil

Existing information

The Project area extends into the Forest Tundra and Taiga zones. Podzols are one of the most common soils occurring in the area. Boggy soils are widely distributed, occupying depressions, vast plains and gentle slopes. Boggy soils in the Project area mostly comprise highly acidic and slightly decomposed peat.

During engineering surveys and other field studies of the Project site and Project's area of influence, soil samples were collected and tested for a range of chemical, agrochemical, radiation, microbiological and parasitological parameters. The test results showed that soil was classified as 'clean' and 'acceptable', i.e. can be used for construction purposes⁷³.

The engineering surveys' findings were used to identify those areas where the topsoil should be stripped and thickness of the striped topsoil layer (from 10-12 to 18-20 cm). The topsoil stripping locations and total amounts of soil moved were not presented in

⁷³ As per SanPiN 2.1.7.1287-03. Sanitary Rules and Standards. Sanitary and Hygiene Requirements to Soil Quality. Approved by the RF Chief Sanitary Inspector 16 April 2003.



the documentation. During the site visit in September 2018, the Consultant's experts observed a fenced area where the stripped topsoil was stored in an about 10m high stockpile.

The Project is expected to affect the soil in the Project area in the following ways:

- the terrain disturbance due to drilling and blasting operations, multiple movements of heavy construction machinery (potholes, wheel tracks, trenches etc.) and soil redeposition;
- the complete alteration of soil structure within the boundaries of construction sites, deterioration of morphological, physical and chemical properties of soils; change in their organic matter content and redox capacity;
- emissions and physical impact caused by the construction machinery and equipment.

Once the construction activities are largely completed, the disturbed areas across the port site are planned to be restored and landscaped.

The design includes environmental protection measures that mainly concern a proper management of fuels, lubricants, construction materials and waste. The implementation of these measures would mitigate impacts on soil within the Project site.

As part of development of the *Addendum to ESIA* it is necessary to develop the Soil Management Plan that should include actions to reduce impacts on soil, soil quality monitoring provisions, spills management procedure, etc.

Key gaps

- The characterisation of soil types, composition, properties, chemistry, microbiology and radiation content based on the engineering survey findings is considered to be appropriate and sufficient and appropriate. The assessment of potential impacts on topsoil layer in the OVOS Report considers all impacts except for impacts from drilling and blasting operations which may cause soil contamination.

Recommendations

- No specific actions are required

5.4.7. Surface waters and groundwater

Existing information

Construction phase impacts on surface waters

The following major negative impacts on water bodies were identified in the OVOS Report for the construction phase of the Project:

- water abstraction for potable and production needs;
- pollution of the Lavna River waters as well as of the Kola Bay waters by suspended solids as a result of bottom dredging works and during the construction of hydraulic structures;
- water pollution with oil products entering the aquatic environment during the operation of vessels and technical floating facilities;



- additional pollutant loads with wastewater discharges including domestic wastewater (from the coastal territory and from ships), bilge (oily) water, and contaminated surface runoff from the Project site.

Water supply at the construction phase to ensure production and potable needs will be provided through the delivery of water by tank trucks and by bottled water delivery. Dredging vessels and technical boats will be supplied with water using the special water delivery vessels.

The total water consumption for production needs during the construction period is 4,813 m³, for household and potable needs – 1,064 m³.

In the Project design documentation calculations of wastewater volumes generated during the construction period, wastewater from ships and surface runoff from the construction site were presented. The collection of domestic wastewater and bilge waters from vessels is to be carried out with the help of special collecting vessels.

The surface runoff after treatment at the on-site sewage treatment plant is discharged into the sea water area through the designed effluent pipe. There are no provisions for discharge of untreated wastewater into the sea.

The Project envisions bottom dredging and hydrotechnical works (pile driving), which result in the following significant impacts on the marine environment identified in the OVOS Report:

- water contamination by suspended substances by eroded removable sea floor material from the dredging site leading to increased turbidity;
- temporary and / or permanent damage to benthos.

Bottom dredging includes the development of deepwater pits, reinforcement of dams, establishment of water settling ponds, dredging of the sea floor material with dredgers and its reflux into the settling ponds with water discharge launder, etc. The settled water is discharged into the water area through drainage. The Project design documentation includes special provisions to monitor quality of discharged clarified waters.

Dredging and sea floor material removal works are accompanied a decrease in sea water transparency. As a result, the following significant impacts on marine biota can be observed (described in more detail in **Section 5.7.1**):

- inhibition of the normal development of bacterioplankton, phytoplankton, zooplankton and, partly, zoo benthos;
- reduced food supply for marine life;
- slowdown of the spawn development resulting from insufficient intake of solar energy (due to increased turbidity);
- respiratory insufficiency occurrences among the marine fauna.

In the process of sedimentation of suspended matter from sea water turbidity plumes, solid material is deposited on the bottom, leading to the siltation of zooplankton and deterioration of the food supply of marine inhabitants.

In order to assess the impact of sea waters pollution by suspended matter, modelling of turbid water plumes migration during the construction phase using the UNICOM Pro software was performed. Modelling results showed that the main factors



determining the size and configuration of the turbid water plumes during construction work were as follows:

- wind-induced currents and tidal currents;
- drift currents under the influence of continuous winds.

The calculations also demonstrated that turbid water plumes resulting from the pile driving works are not significant and lethal concentrations of suspended matter for sea biota are not reached. The Project documentation does not contain graphic images and the geometric parameters of plume dispersions.

In order to reduce the negative impacts on water quality and marine biota, the following preventive/mitigation measures have been developed in the Project design documentation (the PMOOS Volume):

- strict adherence to construction technology and work schedule observance;
- use of special installations/equipment for washing of motor transport wheels;
- use of vessels with the International MARPOL Convention 73/78 and Maritime Register compliance certificates for work production;
- carrying out work strictly within the boundaries of the designated water area and surface territory;
- prevention of discharge of untreated sewage into the water area, etc.

It should be noted that the Project incorporates environmental protection solutions aimed to reduce water consumption and minimize impact on surface water (a closed cycle of water circulation at the wheel wash facility, the use of treated wastewater for dust suppression, the use of isolated ballast for transporting vessels with tanks, etc.).

Of importance, some of the Lavna CTT's facilities will be located within the water protection zone, where a number of economic activities are prohibited.

Operation phase impacts on surface waters

In the PMOOS Volume, the of household and potable and industrial water consumption are estimated - 21,892 and 248,068 m³/year, respectively.

The following sewage pipeline networks are designed for the Terminal site:

- household sewage network;
- industrial wastewater and surface runoff network.

All wastewaters are reported to be directed to an on-site treatment plant. However, there is no information about its technical characteristics and treatment efficiency. Purified wastewater is used for coal spraying during the process of its unloading and reloading, their excess is discharged into the water area. There are no provisions for untreated wastewater discharge.

Water supply and sewage disposal from the ships of the port fleet and cargo ships is carried out with the help of special water delivery and sewage collecting vessels. The discharge of sewage from ships to the port water area is not foreseen.

In order to prevent pollution of the marine environment during ballast water discharges, the design documentation provides for the use of cargo ships with isolated ballast tanks, which excludes the immersion of transported cargo into ballast water.



On the territory of the designed facility, no solutions for the ballast tank cleaning and/or repair are proposed.

In order to ensure the safe operation of cargo ships and the port fleet, there are provisions to follow both Russian legislation requirements and the requirements of international Conventions (**see sections 2.1, 2.2**).

Impact on groundwater

At the construction phase, the key impacts on groundwater are as follows:

- groundwater hydrological regime violations due to the construction of trenches and pits for building foundations, the possible barrage effect (flooding), as well as changes in the properties and structure of soils;
- groundwater pollution due to infiltration of industrial pollutants from the surface (for example, spills of petroleum products, improper disposal of waste for temporary storage, etc.).

The Project design documentation (the PMOOS Volume) concludes that groundwater pollution is not expected in the case of adherence to the designed technical and environmental protection solutions. Since the project documentation has not been provided in full for the current ESIA Gap analysis, this conclusion should be verified when developing the Addendum to the ESIA.

Key gaps

- The Project design documentation lacks certain important information necessary for assessment of Project's impacts on surface waters; the following information was not available: i) technical characteristics of the on-site wastewater treatment plant and its treatment effectiveness; and iii) chemical composition of wastewater disposed into the settling ponds and later released into the water area;
- background hydrochemical characteristics and pollution of the waters of the Lavna River are not presented. The OVOS Report lacks prediction of the construction works impact on the upstream ecosystems of the Lavna River;
- the influx of polluted muddy waters into the mouth of the river and its further spreading upstream due to wind-induced, tidal and drift currents under the influence of continuous winds can lead to a reduction and deterioration of the food supply and the deterioration of the conditions for the reproduction of the fish population of the river;
- the PMOOS Volume includes a very brief assessment of impact of Project's construction works on groundwater; more detailed assessment is necessary to ensure compliance with the GIIP standards.

Recommendations

In order to achieve full compliance with the GIIP standards the following actions are recommended when developing the *Addendum to the ESIA*:

- amend the impact assessment with the results of the performed simulation of suspended matter dispersion plumes with indication of predicted concentrations;
- consider Project's impacts on upstream aquatic ecosystems of the Lavna River during the construction phase (from construction and bottom dredging works);



- it is necessary to perform simulation of suspended matter dispersion plumes and predict TSS concentrations.

5.4.8. Waste

Existing information

Waste streams that are likely to be generated at the construction phase will mainly result from the following activities:

- construction works;
- repair and maintenance of vehicles, mobile plant, construction machinery and equipment;
- lighting systems at the construction site and vessel cabins;
- treatment of storm water runoff;
- cleaning vehicle wheels;
- household waste generated by construction staff and vessel crews;
- operation of vessels;
- earthworks;
- litter collected from the sea bottom during the diver inspections.

It is expected that 17 waste types representing RF Waste Hazard Classes III to V will be generated during the construction phase. The total amount of waste generated over the construction period is estimated at 7,980 tonnes. The proposed design includes temporary storage areas and management methods of these waste streams.

It should be noted that this list of waste streams does not include wood residues wood residues from forest logging during the Project site cleaning. The Company burns wood residues, and this is a permitted practice during the fire safe period⁷⁴ and does not violate the legislation. However, both GIIP standards and the Russian legislation require that waste generated be recycled/reused as much as possible. The YamalTransStroy Company is now in the process of procuring wood chipping machines and it is anticipated that the chips produced will be used for landscaping purposes after the completion of construction works or sold elsewhere (for example, to the Kola Town municipal services which will use it for town landscaping works.

At the operation phase, waste will be generated from the following activities:

- coal transfer;
- daily maintenance of vehicles, mobile plant and machinery;
- vehicle and equipment operations;
- regular repair and maintenance of vehicles and equipment;
- lighting systems, both indoor and outdoor;

⁷⁴ Fire Safety Rules for Forest Areas. Approved by the RF Government Resolution of 30 June 2007 No. 417 (amended as of 18 August 2016)



- water treatment facilities treating water put into supply, wastewater treatment facilities associated with water recycling systems, and treatment facilities for sanitary, process and storm water flows;
- household waste generated by humans in their daily lives;
- street sweepings from paved areas;
- welding operations;
- canteen's operation;
- medical facility's operation;
- regular repair and maintenance of the process equipment

It is estimated that 29 waste types representing RF Waste Hazard Classes I to V will be generated during the operation phase. The total waste generation for this phase is expecting a total annual amount of 4,547 tpa including 500 tpa of coal dust.

The main environmental impact of waste generation during construction and operations is the potential contamination of the port site and surrounding areas including the bay area and the Lavna River mouth. The extent of this impact depends on whether the generated waste is properly managed, separated, landfilled or sent to specialised waste management companies during both construction and operation phases. All waste management procedures identified in the PMOOS Volume are in line with the Russian legislation.

Coal unloading and loading methods, dust suppression and management systems proposed in the design are up-to-date and capable of reducing adverse environmental impacts.

As mentioned in **Section 2.2**, the use of BAT approach for coal transshipment operations at sea ports is planned to become compulsory since 2019. It is therefore, recommended to assess the BAT compliance of the Project design solutions and make necessary revisions if needs be.

The use of BATs could help further reduce waste arisings and manage them in a more effective and efficient way. For example, the OVOS Report does not provide recommendations on potential waste recycling and reuse options like producing fuel briquettes or granules from coal dust. The use of this technology could result in a 500 tpa reduction in waste generation (which is over 10% of the total annual waste generation) and hence cut waste landfilling fees.

Key gaps

Project's waste management performance is to compliant with requirements of the current Russian legislation and partially compliant the GIIP standards. The gaps against the GIIP standards include the following:

- the lack of the consolidated Waste Management Plan for the Project;
- the BATs on waste management are not incorporated into the Project design;
- the Project's design documentation does not examine all stages of life-cycle of waste generated on site; environmental implications of waste landfilling are not considered.



Recommendations

The following actions are recommended in the field of waste management in order to be achieve full compliance with the GIIP standards:

- consolidate all mitigation and monitoring measures identified for construction and operation phases, in a Waste Management Plan;
- assess the BAT compliance of the proposed design solutions and waste management methods to identify additional opportunities to reduce amounts of waste generated and landfilled;

5.4.9. Hazardous materials

Existing information

In the Project design documentation, oil products are the only type of hazardous materials to be used on Project's site during the construction phase. Explosives to be used in cut and fill earthworks have not been considered as a hazardous material.

The list of hazardous materials for the operation phase includes coal to be handled at the Terminal, which is a flammable material. Coal dust is classified as a hazardous material due to its ability to catch fire and explode spontaneously and also affect the respiratory system. The Project design documentation describes potential industrial accidents involving oil products and coal dust, as well as their impact on the air quality, soil, natural waters and biological resources. Mitigation measures designed to reduce the risk of accidents have been also identified.

At the same time, areas of influence of these accidents were not defined, and accident-related health impacts were not identified and assessed.

Key gaps

- not all hazardous materials to be used on site are considered in the Project design documentation: information on explosives for cut and fill earthworks is missing;
- analysis of potential industrial accidents for the construction phase was not conducted;
- the analysis of potential industrial accidents for the operation phase was conducted; at the same time, areas of influence for these accidents were not defined, and accident-related health impacts were not identified and assessed;
- hazardous materials referred to in the Project design documentation are not classified and characterised as per the international classification for chemicals also applied in Russia⁷⁵;
- no industrial control programme has been proposed to monitor air quality within production premises and outdoor production sites for concentrations of hazardous materials and substances (coal dust, petroleum vapour).

⁷⁵ The classification of hazardous materials in the Russian Federation is defined by GOST 32419-2013 "Classification of Chemicals. General Requirements". This classification meets the UN Recommendations on the Globally Harmonized System of Classification and Labelling of Chemicals, United Nations Economic Commission for Europe, ST / SG / AC.10 / 30 / Rev.4



Recommendations

In order to achieve full compliance with the GIIP standards in the field of management of hazardous materials, it is recommended to:

- conduct the analysis of potential industrial accidents for the construction phase covering explosives and oil products; define appropriate impact prevention and mitigation measures;
- amend the analysis of potential industrial accidents for the operation phase, define areas of influence, identify and assess accident-related health risks;
- carry out the classification of all hazardous materials in line with the international and national requirements and develop instructions for their handling in line with GIIP standards;
- develop a programme for air quality monitoring within production premises and outdoor production sites; the pollutants of concern should include inter alia coal dust and petroleum vapour;
- consolidate all mitigation and monitoring measures identified for hazardous materials handling during construction and operation phases in a Hazardous Materials Management Plan.

5.5. Community Health and Safety

Existing Information

In the Russian OVOS practice, the main approach to community health and safety is based on establishing an adequate Sanitary Protection Zone (SPZ) to reduce community exposure and achieve compliance with the health-based ambient air quality standards. In addition, the health risk assessment of chemical pollutants in the ambient air is required to be conducted for the Hazard Class I-II facilities to justify the adequacy of the proposed SPZ size. The methodology of the HRA is based on the internationally recognised principles and modelling.

Under the Russian sanitary classification⁷⁶, the coal transshipment terminal is classified as a Hazard Class II facility. The OVOS Report presents calculations justifying that a 500 m Sanitary Protection Zone is adequate, and that the estimated pollutant concentrations and acoustic exposure levels at the boundary of the nearest residential area do not exceed respective guidelines. No information concerning the health risk assessment has been provided.

Although the assessment of accident-related environmental risks is provided in the OVOS Report, it has not addressed potential risks to community health resulting from these accidents.

The OVOS Report does not include a description of socio-economic situation of the Project's area of influence and disease incidence rates and trends for the local communities. Although it is reportedly planned to attract duty tour employees for Project's construction phase, which requires a temporary construction camp, potential adverse impacts on the existing local infrastructure due to the presence of Project's

⁷⁶SanPiN 2.2.1/2.1.1.1200-03. Sanitary Protection Zones and Sanitary Classification of Industries, Installations and Other Facilities (new edition with Amendments 1, 2, 3, and 4), as amended on 25 April 2014.



workforce and their interactions with the potentially affected local communities (e.g. risk of communicable diseases) have not been assessed.

Key gaps

- Community health risks related to CTT's air emissions were not assessed;
- community health and safety risks related to potential on-site accidents/emergencies and other emergencies were not assessed;
- potential risk of increasing incidence of communicable diseases due to the presence of Project's workforce and their interactions with the local communities have not been assessed;
- potential adverse impacts on the existing local infrastructure due to the presence of Project's workforce and their interactions with the local communities were not assessed;
- temporary and/or permanent impacts on the ecosystem services, their quality and/or potential loss in the areas adjacent to the Lavna CTT site were not assessed.

Recommendations

When developing the Addendum to the ESIA, it is recommended to identify and assess:

- community health risks related to CTT's air emissions;
- community health and safety risks related to potential on-site accidents/emergencies;
- potential risk of increasing incidence of communicable diseases due to the presence of Project's workforce and their interactions with the local communities;
- potential adverse impacts on the existing local infrastructure due to the presence of Project's workforce and their interactions with the local communities;
- assess temporary and/or permanent impacts on the ecosystem services, their quality and/or potential loss in the areas adjacent to the Lavna CTT site.

5.6. Land acquisition and involuntary resettlement

Existing information

The planned Project facilities will occupy an area of 108 ha⁷⁷:

The total area of land used by Lavna Commercial Sea Port LLC is 1,930,115 m². Of that, 54,799 m² is owned by Lavna Commercial Sea Port LLC (the Company has taken out a mortgage for this land) and 1,875,316 m² is leased land. The ownership structure of the leased land is as follows: 61,965 m² is federal land, 17,76,353 m² is land owned by the Kola District Administration, and 36,998 m² is owned by the

⁷⁷ YamalTransStroy OJSC (2018). The List of Environmental Protection Measures (PMOOS). Narrative Part (Book 1) // Lavna Coal Transshipment Facility at the Murmansk Sea Port. Design Documentation. 11-10/1-17-OOS8.3.1. Part 3, Volume 8.3.1. Section 5.4.1. Land Use.



Mezhdurechye Rural Administration. All land plots are designated as “industrial, energy, transport, and other special use lands” as per RF Land Code. The planned land use type (for construction of the coal transshipment terminal) is in line with the designated land use.

It can be concluded that with no land acquisition anticipated for the Lavna CTT project, and BSTDB’s requirements on land acquisition and involuntary resettlement do not apply to it.

Land acquisition and compensation for buildings and structures may become an issue for the associated projects including the access railroad project when it comes to land occupied by local residents without registered ownership rights. It should be noted that the Russian legislation does not require that compensations be paid in this situation, which is not consistent with the pertinent provisions of the GIIP Standards.

Key gaps

- For the associated railroad construction projects, the issue of the presence of unregistered buildings/structures in the route is not fully clear from the presented documentation and interviews.

Recommendations:

As a part of Addendum to ESIA, to provide the justification that no buildings/structures exist in the route.

5.7. Natural resources, biodiversity and ecosystem services

5.7.1. Flora and Fauna

Existing information

The characterisation of biodiversity, terrestrial fauna and aquatic biota within the Project area was already provided on two occasions: as part of the preparation of the Feasibility Study (TEO) in 2006 and in 2017-2018. It has drawn on both data collected through the national monitoring system and findings of special field surveys commissioned by the Company (**Section 4.1**).

Vegetation Cover

The vegetation cover on the Kola Bay shores and in the mouth section of the Lavna River is dominated by the Northern Taiga spruce forests and crooked birch woods, being shaped by the local topography and climate. Raised bogs covered with shrubs and sphagnum mosses widely occur in the Lavna River valley. There are small spots of plant communities associated with sandy beaches and coastal dunes.

The 2017 geobotanical survey covered the construction site and 1km area of influence. This area has been significantly modified by human activities and comprises residential areas, agricultural conenoses, industrial zones, road network, power lines and other infrastructure. The vegetation cover in the area has been considerably disturbed by these developments.

Crooked birch woods occupy over 60% of the land allocated for the Project and about 53% of the survey area. Natural grass communities occupy a very small part of the survey area and Project’s area of influence (4% and 0.6%, respectively). Within the boundaries of the proposed Project site forest tundra communities occupy about 2% of while significant part of the survey area is occupied by disturbed habitats and associated plant communities (about 10%). Agricultural conenoses in the form of



forage grass fields and vegetable gardens account for 10% of the Project site area and 9% of the survey area respectively.

Six plant species included in the Murmansk Region Red Data Book were found to be present within the proposed construction site (the peripheral populations of rare species).

The plant communities occurring in the Murmansk Region are rich in wild-growing mushrooms and edible and medicinal plants including berries (bilberry, red bilberry, blueberry, fen berry, and cranberry). Local residents are actively involved in berry picking, for both commercial and domestic use.

Bilberry is the most common berry in the survey area, followed by red bilberry and blueberry. Fen berry and cranberry grow in swamps. The historical average yield is about 150kg/ha for bilberry, 100 kg/ha for red bilberry, 100-150 kg/ha for blueberry, and 100 kg/ha for fen berry. The average mushroom yield is about 100 kg/ha.

The vegetation cover in the Project area will be affected by the Project activities, both directly (permanent and temporary degradation/disturbance) and indirectly (alteration of habitat conditions). The complete degradation of natural plant communities is the most serious impact which cannot be prevented/avoided during cut and fill earthworks.

The ongoing construction activities have already resulted in the removal of forest and shrub vegetation, degradation of grass cover and removal of topsoil layer.

Terrestrial Animal Species

A relatively poor diversity of terrestrial vertebrate species in the Project area is attributed to its location in severe climatic zone, little or lack of variety of biotopes, low food capacity of habitats and profound alteration of the area due to human impacts.

The characterisation of the Project area's fauna is based on findings of the 2017 zoo-geographic survey which identified key animal habitats with different landscape conditions and helped inventory species diversity at various habitat conditions.

Animal species found to be present in the Project area include vole, muskrat (*Ondatra zibethica*), shrew (*Sorex caecutiens*), grass frog (*Rana temporaria*), polar hare (*Lepus timidus*), fox (*Vulpes vulpes*), ermine (*Mustela erminea*), weasel (*Mustela rixosa*), common marten (*Martes martes*), American mink (*Mustela vison*), glutton (*Gulo gulo*), elk (*Alces alces*), squirrel (*Sciurus vulgaris*), and common lizard (*Lacerta vivipara*).

Terrestrial Bird Species

The species diversity of bird fauna in the Project area is relatively poor with 32 species in 14 families and 7 orders. However, the relative species abundance data represent a very rough estimate which would require further special study to refine. The dendrophilous species are the core of the local bird fauna, being typical of the forest areas on the Kola Peninsula. The most abundant species are those in the Passeriformes order. Birds of prey and owls occur rarely. The diversity and abundance of bird fauna inhabiting wetland areas and open spaces (ducks and sandpipers) are low due to the lack of suitable biotopes.

The Project's area of influence comprises habitats used by two rare species included in the Russian Federation and Murmansk Region Red Data Books – peregrine falcon (*Falco peregrinus*) and dipper (*Cinclus cinclus*). None of the mammal, amphibian and reptile species occurring in the Project area are included in the national or regional Red Data Book.



Bird migration routes lies outside the Project's area of influence. Russia's Important Bird and Biodiversity Areas (Lapland Biosphere Reserve, Ainov Islands, and Gavrilovsky Archipelago) lie some tens of kilometres off from the Project area.

Marine Waterfowl

The monitoring of marine waterfowl has been maintained since 1999 by the Murmansk Marine Biological Institute (MMBI) of the Kola Scientific Centre of the Russian Academy of Science (KSC RAS). The monitoring results indicate that despite being classified as a water body modified by human activities where the level of disturbance is persistently high and trophic conditions have been altered due to human impacts, the Kola Bay sustains rich and abundant marine bird fauna. On the other hand, the diversity and abundance of its nesting fauna have remained low. In fact, the Kola Bay area is used by marine birds and waterfowl as a wintering habitat and a place to rest during spring and autumn migrations and nomadic movements.

The monitoring results show that migratory marine birds and waterfowl pass through the Kola Bay area in September-November. Many long-distance migrants return in March-April. As the Kola Bay lies at some distance away from the main migration routes, the total population of migrants is relatively small.

Marine Mammal Species

The species composition and abundance of the marine mammal fauna inhabiting the middle knee of the Kola Bay are characterised based on the results of ship observations conducted by MMBI between 1996 and 2005 annually and throughout all seasons over a 1,000 km route. The data from shore observations randomly held in Murmansk has also been used.

The members of the Phocidae family and individuals representing the Balaenopteridae, Delfmidae, and Monodontidae families were recorded in the Kola Bay throughout the observation period.

Two Pinnipedia species and one dolphin species enjoy the protection status: harbour porpoise, common seal and gray seal are included in the Russian Federation and Murmansk Region Red Data Books.

Fish Fauna

The Kola Bay of the Barents Sea and the Lavna River are classified as the top category fishery waters. The Kola Bay hosts 50 fish species representing 25 families. The most abundant families are codfishes, flatfishes, and sculpins (each family comprising 6 species). Fish distribution patterns have not been studied and the list of species is therefore based on individual catches.

The Lavna River mouth is not used for commercial fishing being used as a habitat by species migrating through or inhabiting the Kola Bay. Six fish species were found to occur in the littoral and sub-littoral zones of the survey area, which is 12% of the list of species present in the Kola Bay.

Phytoplankton, Zooplankton and Benthos

The monitoring of aquatic biota in the Kola Bay is conducted by the Murmansk Branch of the Main Catchment Department for Fishery and Conservation of Marine Biological Resources (GlabRybVod) Federal State Agency (MurmanRybVod), Knipovich Polar Research Institute of Marine Fisheries and Oceanography (PINRO), and MMBI of



KSC RAS. The aquatic biota present in the lower and mouth section of the Lavna River is less well studied (a survey was conducted by MMBI in 2017).

The pelagic algal community comprises 51 algal species belonging to the following six class-level and order-level taxa: Bacillariophyceae, Dinophyceae, Chlorophyta, Euglenophyceae, Chrysophyta, and Xantophyceae. Blue green algae (Cyanophyta) representing *Oscillatoria* and *Merismopedia* genera were also found to occur regularly and comprise both freshwater and marine species.

According to the MurmanRybVod data, the zooplankton composition comprises over 140 species and forms, with copepods and euphausiids dominating the community biomass.

The bottom communities of the Kola Bay were studied thoroughly in the late 1990s. These days, the composition of the bottom fauna in the Kola Bay is seen to have been altered due to human impacts but the data of systemic observations in the Project area are lacking.

Impact on Aquatic Biological Resources

The OVOS Report provides a general description of impacts on biological resources and proposed mitigation measures. A more complete characterisation would require conducting a detailed review of available survey data and collecting new data during field studies within the Project's area of influence.

Key gaps

- In the OVOS Report many domains of Project area's flora and fauna are characterised with a sufficient level. However, description of aquatic biota is too general and relies on incomplete input data namely on the results of irregular surveys conducted in the early 2000s and updated in 2017;
- the assessment of impacts on aquatic biota and proposed mitigation measures provided in the OVOS Report are general and require further clarification and elaboration.

Recommendations:

As a part of Addendum to ESIA, to provide the detailed assessment of the Project impacts on aquatic biota and develop recommendation.

5.7.2. Ecosystem services

Existing information

The Project design documentation provided for review does not include an assessment of ecosystem services as there are not no specific requirements on this aspect in the Russian OVOS framework.

It should be noted that the reports on engineering surveys and other field studies of the Project's site and Project's area of influence, as well as the OVOS Report, contain information that might be used to provide a preliminary assessment of ecosystem services (e.g. average annual harvest values for berries (bilberry, red bilberry, blueberry, fen berry and cranberry) and mushrooms at the Project site and within its area of influence. It is also possible to estimate the ecosystem services lost due to the transformation of agricultural land (forage grass fields and vegetable gardens) to the production sites.



Key gaps

- The Project design documentation provided for review does not include an assessment of Project's impact on ecosystem services.

Recommendations:

In order to achieve full compliance with the GIIP standards, when developing *the Addendum to the ESIA* it is recommended to:

- conduct additional studies required to collect input data for the assess the current status of ecosystem services in the Project area and Project's impact on them;
- assess Project's impact on ecosystem services within the Project's area of influence including those lost due to the Terminal development.

5.7.3. Landscape and visual effects

Existing information

The Project's site is located developed on the western shore of the Kola Bay in the Lavna River mouth between Mishukovo and Mezhdurechye villages. The Project area has already been significantly modified by human activities, there is an oil terminal located to the south of the proposed Terminal, moorings for small boats and larger ships, derelict structures, etc.

The OVOS Report did not consider the potential impacts on landscape and visual effects of the proposed Terminal. The coastal landscape in the Project area can be considered as being typical of the Kola Bay area not possessing any unique features.

Key gaps

- The OVOS Report does not provide an assessment of Project-related impacts on landscape and visual effects. This gap should be addressed in *the Addendum to the ESIA*, to include the development of measures for improving the visual amenity of the Terminal site and adjacent areas (e.g. demolishing of old abandoned structures and moorings, planting greenery etc.).

Recommendations:

In order to achieve full compliance with the GIIP standards, when developing *the Addendum to the ESIA* it is recommended to:

- assess the aesthetic value of landscapes and visual Project impact;
- develop mitigation measures for improving the visual amenity of the Project site and adjacent areas (e.g. demolishing of old abandoned structures and moorings, planting greenery etc.).

5.7.4. Protected areas

Existing information

The Project site does not include any special protected natural areas which is confirmed by the Letter of the Ministry for Nature Resources and the Environment of



the Murmansk Region⁷⁸ and the Letter of the Ministry for of the Natural Resources of the Russian Federation⁷⁹. The List of Regional Protected Areas is provided in the Letter of Ministry for Environmental Resources Department of Murmansk Region⁸⁰.

According to the OVOS Report⁸¹, the nearest specially protected natural area (the regional nature monument “Sheepback rock at Lake Semenovskoe”, a geological profile) is at a distance of 4.5 km from the Project site.

As the legally recognised protected areas are located at a significant distance from the Project site, the Project is not expected to affect such areas, and pertinent impact prevention/mitigation measures are not required.

However, it should be noted that the Project site partly lies within the water bodies’ protective zones established for the Kola Bay and the Lavna River, which are areas where certain land use restrictions are in place.

Key gaps

- The OVOS Report and the PMOOS Volume does not provide sufficient detail on how it is planned to ensure Project’s compliance with special regime of water bodies’ protective zones imposed on several parcels of the Project site. Relevant measures should be clearly articulated in the Addendum to OVOS or in the Project’s ESIA.

Recommendations:

No future actions within ESIA addendum are needed. All the issues (is any) should be addressed on the national level.

5.8. Cultural Heritage

5.8.1. Tangible cultural heritage

Existing situation

The Report on Archaeological Studies⁸² in the area of proposed Lavna CTT describes the historical context and the actual state of the lands allocated for Lavna CTT construction as well as the results of the field studies. According to the Report, the following methodology of archaeological studies was used:

- preliminary achieve and bibliographic survey;

⁷⁸ The Letter of the Ministry for Nature Resources and the Environment of the Murmansk Region on the absence of PAs and TTP in the design territory

⁷⁹ The Letter of the Ministry for of the Natural Resources of the Russian Federation on the absence of PAs and TTP in the design territory

⁸⁰ The Letter of Ministry for Environmental Resources Department of Murmansk Region on the availability of protected areas in the Kola region

⁸¹ YamalTransStroy OJSC (2018). Environmental Impact Assessment. Lavna Coal Transshipment Facility at the Murmansk Sea Port. Design Documentation. Code 11-10/1-17-OOS8.2.

⁸² German, K.E. (2018). Report Based on the Results of the State Historical and Cultural Review of Scientific and Technical Documentation Containing Results of Studies to Identify Presence or Absence of Cultural Heritage Items Within the Lands Allocated for the Lavna Coal Transshipment Terminal.



- visual inspection of the area;
- inspection of the outcroppings;
- search of artefacts and/or their remains;
- test pitting.

The route was chosen in order to cover the whole site of the proposed Terminal.

According to the Report, no archaeological sites were discovered within the Lavna CTT's site.

A study of the marine area was also conducted in order to identify the presence of possible cultural heritage and unexploded ordinance. The scope of the study includes the following:

- underwater sea bottom survey by a certified diver using a metal detector;
- bottom depth measurements and preparing a topographic plan for the marine area.

According to the results of the archaeological study of the Lavna CTT's marine area:

- no archaeological items including sank vessels were found in the marine area;
- all the identified features are single artefacts or artefact groups dated 20th century.

The conclusion of the study says that no archaeological sites or unexploded ordinance were identified within the marine area dedicated for the Lavna CTT project.

Key gaps

- No information gaps related to the tangible cultural heritage were identified.

Recommendations

- No future actions are required.

5.8.2. Intangible cultural heritage

The presence of intangible cultural heritage was not considered in the OVOS. Although intangible cultural heritage is unlikely to be present in the Project's area of influence due to its history, additional studies are necessary to confirm this assumption.

Key gaps

- The presence of any intangible heritage within the Project's area of influence was not studied.

Recommendations

When developing the Addendum to the ESIA, it is recommended to:

- examine the presence of intangible cultural heritage within the Project's area of influence;
- if any intangible heritage is discovered develop measures to protect it from possible negative impacts associated with the Project.



5.8. **Indigenous people**

Existing information

The Murmansk Region is the area of the traditional residence of the Sámi. The Sámi (old name – Lopari) is the most western of the indigenous peoples of the Russian Federation. They are the ancient inhabitants of the Kola Peninsula. In the Kola District, there are nine Sami communities registered.

The settlements of Mezhdurechye and Mishukovo were founded in about 1938. The ethnic composition of the local communities was not presented in the OVOS Report; this information was also not available in open sources.

The presence of indigenous peoples' communities and traditional nature resource use practices in the vicinity of the Project site and associated facilities was not discussed in the OVOS Report. Although it is highly unlikely that traditional nature resource use is practiced there due to the local history, it is necessary to justify this statement.

Key gaps

- the absence of indigenous peoples' communities and traditional nature resource use in the vicinity of the Project site and associated facilities was not justified

Recommendations

When developing the Addendum to the ESIA, it is recommended to:

- justify the absence of indigenous peoples' communities and traditional nature resource use lands within the Project area of influence;

6. **SUPPLY CHAIN MANAGEMENT**

One of the Project's important aspects is the procurement of goods and contractor services including those to be provided by the General Contractor or EPC (Engineering, Procurement and Construction) Contractor. The Russian OVOS procedure does not include an assessment of environmental, health and safety, and social (ESHS) and impacts associated with the supply chain.

The organisational structure of Lavna Commercial Sea Port LLC does not provide information on who is responsible for dealing with contractors.

YamalTransStroy JSC has been appointed as the EPC Contractor that will be able to subcontract some works and services.

Key gaps

The documents provided do not include an assessment of ESHS risks and impacts associated with the Project's supply chain, which are within the reasonable control of the Company and Contractor. There is no information on how the structural and functional interaction is organised between STLC and Lavna Commercial Sea Port LLC and who is responsible for dealing with contractors and managing ESHS issues.

The capacity of local contractors that could be engaged to carry out some works has not been assessed.

Recommendations

The following actions are recommended to be taken to achieve compliance with GIIP:



- establish a management system and organisational structure of Lavna Commercial Sea Port LLC to provide an explicit indication of who is responsible for managing the interaction with the EPC Contractor and other contractors on management of ESHS risks and impacts;
- YamalTransStroy JSC is to introduce the Project-related ESHS management system and procedures for selecting and monitoring contractors and their ESHS performance;
- develop generic ESHS requirements to be incorporated in the standard contractor and subcontractor agreement;
- assess the capacity of local contractors and subcontractors to deliver specific services for the Project.

7. ASSOCIATED PROJECTS: ESIA GAP ANALYSIS

The implementation of the Lavna Coal Terminal Project is closely interrelated with the following three associated projects from a functional perspective:

- dredging operations and auxiliary fleet base construction including the on-site navigation system;
- public railroad connecting Vykhodnoy and Lavna Stations (46 km);
- access railroad from Lavna Station to the Terminal (2.3 km);

The public railroad is developed as part of the larger scale MTH project (see **Section 3.1**). It is intended to support the development of the coal and oil terminals on the west coast of the Kola Bay. The scope of the MTH Project may be expanded in the future to include new infrastructure components.

7.1. Bottom Dredging

Existing information

To provide the access of sea freighters to the proposed Lavna CTT bottom dredging works are planned in the Kola Bay, within the Project's marine area adjacent to the land-based Project site (**Figure 2**).

The bottom dredging operations is considered as a separate project. Under the Concession Agreement⁸³, the bottom dredging operations and auxiliary fleet base construction including the navigation system will be financed directly by the RF Government.

The bottom dredging works are carried out in the offshore part of the Project site, and their effects are considered in combination with those of site preparation works and other construction activities. The assessment of these impacts is provided in the OVOS Report and Environmental Monitoring Plan.

In 2019, the update of the Project design of dredging operations is planned. The new Environmental Engineering Studies will be done.

⁸³ Key Terms and Conditions of the Concession Agreement on Construction and Operation of the Murmansk Sea Port Infrastructure Facilities. Approved by the Executive Order of the RF Government of 1 October 2018 No. 2111-r.



To ensure compliance with the GIIP standards, this project should be considered as part of the Lavna CTT project. It is, therefore, essential to assess, prevent and/mitigate its potential impacts within the Project's ESIA.

Key gaps

- During the ESIA Gap Analysis the design and impact assessment documentation for bottom dredging works, relevant EHS approvals and permits, and materials of public hearings (if any conducted) were not provided to the Consultant. However, some information on bottom dredging is present in the OVOS Report (2018). The OVOS Report covers part of environmental impacts from bottom dredging, namely impact on aquatic geology, impact on sea water quality, acoustic impact from CCT operations and others).

Recommendations

It is recommended to

- review the ToR for EES for Dredging Operations Project and insure the sufficiency of the planning studies for meeting GIIP requirements;
- as a part of the Addendum to ESIA, provide the following assessments/actions:
 - based on the EES and Project design documentation, develop the baseline and impact assessment;
 - develop relevant prevention, mitigation or compensation measures in line with EU/Global standards and GIIP standards;
 - disclose information (as a part of ESIA disclosure) and provide meaningful consultations/

7.2. Vykhodnoy – Lavna Public Railroad

Existing information

The public railroad is developed is part of the MTH project and aims to facilitate the development of such major facilities as coal and oil terminals. The project is financed by the RF Government.

The railroad has a length of 46 km and involves the construction of three new stations, seven railroad bridges, a motorway bridge and four railroad overpasses, and the expansion of Vykhodnoy Station. The design documentation for all these components was developed by GiproTransProekt JSC; the public hearings were held to discuss it. The design of the Tuloma River bridge was revised in 2017 to the extent that the new OVOS process was required, and the public hearing was held on 10 February 2017 to discuss the revised design⁸⁴.

The first round of the public consultations revealed that residents in the railroad construction area did not support the project due to its environmental implications and

⁸⁴ Kola District Administration (2017). *Public Hearings on Environmental Impact Assessment for the Integrated Development of the Murmansk Transport Hub Project Were Held in Kola District // News // Kola District Administration's official website. Available at <https://akolr.gov-murman.ru/news/199782/>*



even organized a protest campaign in 2016⁸⁵. The project eventually received public support when the stakeholder comments had been addressed in the revised design.

The railroad construction commenced in 2015 and was expected to be completed in 2018. However, the completion date was shifted forward by two years due to the budget funding constraints.

According to the Concession Agreement between Lavna Commercial Sea Port LLC and the RF Government of 1 October 2018 Lavna Commercial Sea Port LLC is obliged to provide support, if possible, in the general transport operations of the railroad by raising additional funds for the public railroad construction project.

Key gaps

- During the ESIA Gap Analysis the Consultant was not provided with access to the design documentation containing necessary information to conduct assessment of environmental, social and potential cumulative effects of the public railroad construction.

Recommendations

When developing the Addendum to the ESIA, in order to achieve compliance with GIIP standards, it is recommended:

- request and review design and impact assessment documentation, relevant EHS approvals and permits, and materials of public hearings;
- identify and assess project-related environmental and social impacts in line with the GIIP standards; assess potential cumulative effects of the Lavna CTT and public railroad construction projects;
- assess the potential of the Lavna CTT project to influence the design decisions and the stakeholder engagement process on the public railroad construction project;
- where possible propose preventive or mitigation measures in line with the EU/Global standards and GIIP standard to address adverse project's impacts that cause public concerns.

7.3. Access Railroad from Lavna Station to the Terminal

Existing information

The coal will be transported to the Lavna CTT via the access railroad from the Lavna Station to the Coal Terminal. It will be a single-track railway line with a designed length of 2.3 km and a proposed speed limit of 40 km/h. The construction of the access railroad is financed by the Lavna Commercial Sea Port LLC.

In 2019, the update of the Project design documentation is planned; the construction permits to be received on this basis.

⁸⁵ We are against Vykhodnoy – Lavna Railroad [public group at VK.com]. Available at <https://vk.com/public115443162>



Key gaps

- During the ESIA Gap Analysis the Consultant was not provided with existing Project documentation for the access railroad.

Recommendations

When developing the Addendum to the ESIA, in order to achieve compliance with GIIP standards, it is recommended:

- review design and impact assessment documentation, relevant EHS approvals and permits, and materials of public hearings (if any conducted);
- identify and assess project-related environmental and social impacts in line with the GIIP standards;
- where possible propose preventive or mitigation measures in line with the EU/Global standards and GIIP standard to address adverse project's impacts; special attention should be given to impacts that cause public concerns;
- engage with project stakeholders, namely, identify project stakeholders, conduct meaningful consultation with them, and disclose relevant project-related E&S information.



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ANNEX 1. SELECTED ILO CONVENTIONS RATIFIED BY THE RUSSIAN FEDERATION

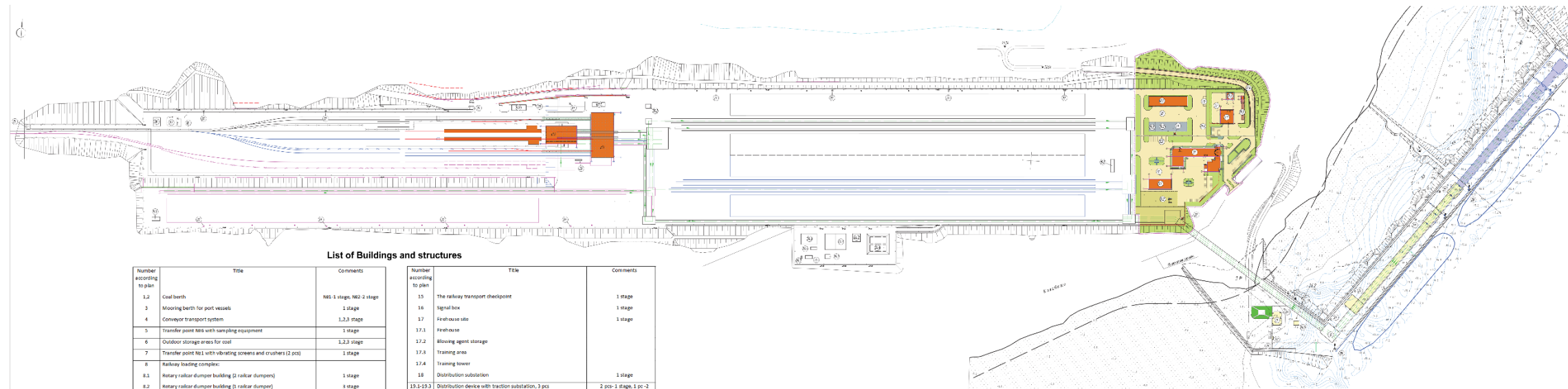
- Convention No. 14 Weekly Rest (Industry) Convention (1921);
Convention No. 15 Minimum Age (Trimmers and Stokers) Convention (1921);
Convention No. 16 Medical Examination of Young Persons (Sea) Convention, (1921);
Convention No. 27 Marking of Weight (Packages Transported by Vessels) Convention (1929);
Convention No. 29 Forced Labour Convention (1930);
Convention No. 32 Protection against Accidents (Dockers) Convention (Revised) (1932);
Convention No. 47 Forty-Hour Week Convention (1935);
Convention No. 52 Holidays with Pay Convention (1936);
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Convention No. 150 Labour Administration Convention (1978);



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- Convention No. 182 Worst Forms of Child Labour Convention (1999)



ANNEX 2. GENERAL LAYOUT OF THE OF THE LAVNA COAL TRANSSHIPMENT TERMINAL



List of Buildings and structures

| Number according to plan | Title | Comments | Number according to plan | Title | Comments |
|--------------------------|--|---------------------------------------|--------------------------|---|---|
| 1.2 | Coal berth | NB1 1 stage, NB2 2 stage | 15 | The railway transport development | 1 stage |
| 3 | Mooring berth for port vessels | 1 stage | 16 | Signal box | 1 stage |
| 4 | Conveyor transport system | 1,2,3 stage | 17 | Firehouse site | 1 stage |
| 5 | Transfer point NB1 with sampling equipment | 1 stage | 17.1 | Firehouse | |
| 6 | Outdoor storage areas for coal | 1,2,3 stage | 17.2 | Blowing agent storage | |
| 7 | Transfer point NB1 with vibrating screens and crushers (2 pcs) | 1 stage | 17.3 | Tramming area | |
| 8 | Railway loading complex: | | 17.4 | Tramming tower | 1 stage |
| 8.1 | Rotary railcar dumper building (2 railcar dumpers) | 1 stage | 18 | Distribution substation | 1 stage |
| 8.2 | Rotary railcar dumper building (1 railcar dumper) | 1 stage | 19.1-19.3 | Distribution device with traction substation, 3 pcs | 2 pcs-1 stage, 1 pc-2 stage, 4 pcs-3 stage |
| 8.3 | Thieving equipment, 2 pcs | 1pc-1 stage, 1pc-2 stage | 20.1-20.5 | Traction substation, 5 pcs | 1 |
| 8.4 | Hanger for the transborder, 1 pcs | 1pc-1 stage, 1pc-2 stage, 1pc-3 stage | 21 | Floodlight tower, 23 pcs | 18 pcs-1 stage, 1 pc-2 stage, 4 pcs-3 stage |
| 8.5 | Humping tracks for loaded and empty railcars | 1,2,3 stage | 22 | Container laboratory for coal chemical analysis | 1 stage |
| 8.6 | Unloading station for damaged railcars | 1 stage | 23 | Modular compressor station of container type | 1 stage |
| 9 | Dust collection equipment | 1 stage | 24 | Surface wastewater treatment facilities | 1 stage |
| 10 | Mechanical repair workshop and logistics warehouse: | | 24.1 | Reception tank, 2 pcs | |
| 10.1 | Repair warehouse | 2 stage | 24.2 | Pumping filtration station with fire protection pumping room | |
| 10.2, 10.3 | Outdoor storage area | 1 stage | 24.3 | Sludge dewatering area | |
| 10.4 | Surface wheeled vehicles parking | 1 stage | 24.4 | Leachate tank | |
| 11 | Storage area | 1 stage | 24.5 | Purified water tank for production and fire safety needs, 2 pcs | |
| 11.1 | Vehicle garage | | 25 | Biological treatment station for domestic sewage | 1 stage |
| 11.2 | Fueling station | | 26.1-26.3 | Domestic sewage pumping station, 3 pcs | 1 stage |
| 11.3 | Surface vehicle parking | | 27 | Local domestic sewage treatment facilities | 1 stage |
| 12 | Administrative building with central control point and carmen | 1 stage | 28 | Port navigation sign, 2 pcs | 2pc-1 stage, 1pc-2 stage |
| 13 | State border crossing point | 1 stage | 29 | The area of temporary storage of production waste | 1 stage |
| 14 | Security checkpoint | 11 stage | 30 | Solid waste collection site, 3 pcs | 1 stage |
| | | | 31 | Administrative building | 1 stage |



ANNEX 3. LIST OF REVIEWED PROJECT-RELATED DOCUMENTATION

- SoyuzMorNIIProekt OJSC (2007). Construction Management Plan // Lavna Coal Transshipment Facility at the Murmansk Sea Port. Feasibility Study (TEO). Volume 12.
- Key Terms and Conditions of the Concession Agreement on Construction and Operation of the Murmansk Sea Port Infrastructure Facilities. Approved by the Executive Order of the RF Government of 1 October 2018 No. 2111-r.
- YamalTransStroy JSC (2018). Lavna Coal Transshipment Facility at the Murmansk Sea Port. Design Documentation:
 - Section 8: List of Environmental Protection Measures (PMOOS):
 - Part 1, Volume 8.1: Report on Estimation of Damage to Water Resources, Biological resources and their Habitats 11-10/1-17-00C8.1;
 - Part 2, Volume 8.2: Environmental Impact Assessment (OVOS). 11-10/1-17-OOC8.2;
 - Part 2, Volume 8.2.1: Environmental impact Assessment (OVOS). Book 1. Narrative Part. 11-10/1-17-OOS8.2.1;
 - Part 2, Volume 8.2.2: Environmental impact Assessment (OVOS). Book 2. Annexes. Graphical Part. 11-10/1-17-OOS8.2.2;
 - Part 3, Volume 8.3.1: The List of Environmental Protection Measures (PMOOS). Book 1. Narrative Part. 11-10/1-17-OOS8.3.1;
 - Part 3. Volume 8.3.2: The List of Environmental Protection Measures (PMOOS). Book 2. Annexes. Graphical Part. 11-10/1-17-OOS8.3.2;
 - EcoSfera JSC (2018). Dispersion Modelling of Suspended Solids and Bottom Sediments and calculation of parameters required for impact assessment on water and biological resources. Report;
 - Part 2. Reports on the Engineering Surveys for the Lavna Coal Transshipment Terminal at the Murmansk Sea Port:
 - Book 4: YamalTransStroy JSC (2018). Environmental Engineering Survey Programme. 11-10/1-17-PII1.4. Volume 1.4;
 - Book 5.1: PI PetroKhimTekhnologiya JSC (2018). Report on the Geotechnical and Hydrometeorological Studies. Explanatory Note. 11-10/1-17-IE2.5.1. Volume 2.5.1;
 - Book 5.2: PI PetroKhimTekhnologiya JSC (2018). Report on the Geotechnical and Hydrometeorological Studies. Annexes. 11-10/1-17-IE2.5.2. Volume 2.5.2;



- Volume 2.6: Actual Archeology Research Centre LLC (2018). Report on Archaeological Studies in the Form of Historical and Cultural Scientific Archaeological Survey (Exploration) in order to Conduct State Historical and Cultural Examination of the Land and Marine Area for the Lavna Coal Transshipment Terminal at the Murmansk Commercial Sea Port. 11-10 / 1-17-NAO2.6.
- German, K.E. (2018). Report Based on the Results of the State Historical and Cultural Review of Scientific and Technical Documentation Containing Results of Studies to Identify Presence or Absence of Cultural Heritage Items Within the Lands Allocated For the Lavna Coal Transshipment Terminal.
- Volume 2.7.2: Forpost-Murman JSC (2018). Report on the Unexploded Ordinance Survey. Marine area. 11-10/1-17-VOP7.2.
- General layout of the Lavna Coal Transshipment Terminal at the Murmansk Sea Port,
- The organizational management structure of Lavna Commercial Sea Port LLC
- Presentation of the Lavna coal handling complex at the seaport of Murmansk. STLC, August, 2018
- Information on the Lavna coal transshipment terminal construction project in the Murmansk Sea Port. STLC, October, 2018
- Initial Permitting Documentation on the Project.
 - Conclusion of the Federal Agency for Fisheries “On coordination of the implementation of activities within the framework of the project documentation“ Lavna Coal Transshipment Terminal” in the Murmansk Sea Port”. № 4987-ПС/УО2 от 18.05.2018
 - Construction Permit No. RU51513307-12 (as amended) of the Lavna Coal Transshipment Terminal in the Murmansk Sea Port. Signed by the Head of the Kola District Administration dated August 02, 2018, valid until July 22, 2020.
- Title documents for land use: Rental contracts for plots 24-25, 184-185, 900-910, 1276, 3494, 3495; Certificate of state registration of ownership №51 АБ 112363 and 51 АБ 112176
- Letters of Authorized Bodies
 - Letter of the Committee of Veterenary № 14-03/273-AK from 23.01.2018. On the absence of cattle burials
 - Letter of the RosPotrebNadzor Governance for Murmansk Oblat 04/526-18-32 from 15.01.2018. On the absence of cattle burials
 - Letter of the Committee for Culture and Arts for Murmansk Oblast №12-05/3557-CE from 15.11.2017 On information provision
 - Letter of the the Committee for Culture and Arts for Murmansk Oblast №12-05/847-CE from 13.03.2018. on the absence/presence of the cultural heritage in the project area



- Letter of the Ministry for Nature Resource and Environment № 30-05/10733-ДА from 22.12.2017. confirming that the calculation of the hunting resources is not conducted in the project area.
- Letter of the Министерства рыбного и сельского хозяйства Мурманской области № 13-02/282-МГ from 01.02.2018 on the fishery and fish reproduction sites within the project area
- Letter of the Murmansk Region Ministry of Natural Resources and the Environment No. 30-02/10905-DR of 28 December 2017 On Federal -Level Nature Protected Areas within the Kola District.
- Letter of the Administration of the Kola District in the Murmansk Region № 02-12/96-26 of 12 January 2018 On the Absence of the Special Protected Areas and Areas of Traditional Nature Resource Use within the Project Area.
- Letter of the RF Ministry of Natural Resources and the Environment No. 12-47/7415 of 16 March 2018 On the Absence of the Federal Special Protected Areas within the Project Area.
- Confirmation Letter from Orko-Invest JSC №145 from 15.03.2018. on Acceptance of the Class IV wastes to the city landfill
- Confirmation Letter from Orko-Invest JSC №109 from 26.02.2018. on acceptance of the 3-5 class wastes to the city landfill
- Letter of Rosprirodnadzor for Murmansk Oblast № 03/4680 from 18.12.2017. on the presence of licensed landfills
- Certificate of the Murmansk Hydrometeorology and Environmental Monitoring Department No. 50/1452 from 03.28.2018. About background concentrations of pollutants in the city of Murmansk
- Public Hearings Materials:
 - Registration log of participants at the public hearings on the EIA Materials [the OVOS Report] for the Project of 20 March 2018;
 - Register of comments and suggestions on the EIA Materials [the OVOS Report] for the Project, 2018;
 - Minutes of public hearings on the EIA Materials [the OVOS Report] for the Project of 20 March 2018;
 - Announcements on the public hearings in newspapers:
 - The Vecherniy Murmansk of 13 February 2018;
 - The Kolskoye Slovo of 15 February 2018
 - The Rossiyskaya Gazeta of 14 February 2018;



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ANNEX 4. INFORMATION ON LAND PLOTS USED BY LAVNA COMMERCIAL SEA PORT LLC

| Cadastré Number | Area, m ² | Owner |
|--|----------------------|---------------------------|
| 51:01:0802001:0001 | 38,000 | Kola District |
| 51:01:1101002:0001 | 76,500 | Kola District |
| 51:01:2207003:0002 | 90,064 | Kola District |
| 51:01:0802001:0008 | 5,400 | Kola District |
| 51:01:0802001:0013 | 127,262 | Kola District |
| 51:01:0802001:0014 | 579,667 | Kola District |
| 51:01:0802001:0015 | 198,255 | Kola District |
| 51:01:1101002:0023 | 338,500 | Kola District |
| 51:01:1101002:0024 | 16,870 | Kola District |
| 51:01:1101002:0025 | 9,478 | Kola District |
| 51:01:0802001:0017 | 115,636 | Kola District |
| 51:01:0802001:0019 | 51,821 | Kola District |
| 51:01:0802001:172 | 43,384 | Kola District |
| 51:01:0803001:139 | 85,516 | Kola District |
| Kola District sub-total | 1,776,353 | |
| 51:01:0801002:11 | 31,998 | Mezhdurechye Municipality |
| 51:01:0801003:8 | 5,000 | Mezhdurechye Municipality |
| Mezhdurechye Municipality sub-total | 36,998 | |
| 51:01:0802001:0020 | 19,998 | Federal land |
| 51:01:0802001:0021 | 41,967 | Federal land |
| Federal land sub-total | 61,965 | |
| Sub-total for leased land | 1,875,316 | |
| 51:01:0802001:006 | 22,776 | Lavna |
| 51:01:0802001:007 | 32,023 | Lavna |
| Sub-total for land owned by Lavna LLC | 54,799 | |
| Total area | 1,930,115 | |



Land Lease Agreement for Plot 900
Land Lease Agreement for Plot 901
Land Lease Agreement for Plot 903
Land Lease Agreement for Plot 904
Land Lease Agreement for Plot 905
Land Lease Agreement for Plot 906
Land Lease Agreement for Plot 907
Land Lease Agreement for Plot 908
Land Lease Agreement for Plot 909
Land Lease Agreement for Plot 910
Land Lease Agreement for Plot 1276
Land Lease Agreement for Plot 3494
Land Lease Agreement for Plot 3495
Land Lease Agreement for Plot 24
Land Lease Agreement for Plot 25
Land Lease Agreement for Plot 184
Land Lease Agreement for Plot 185
Land Ownership Registration Certificate 51 AB 112363
Land Ownership Registration Certificate 51 AB 112176

