



# North Atlantic

## North Atlantic Wind to Hydrogen Project Waste Management Plan

Document ID: NA-P1-003

Date	Rev.	Created by	Reviewed By	Approved By
2025-03-26	0	Jenna Broders	Sean Gaulton Rhonda Hiscock	

## Revision History:

## Table of Contents

1. Introduction.....	1
1.1 Scope.....	1
1.2 Objectives .....	1
1.3 Document Control .....	2
1.3.1 Record Keeping.....	2
1.3.2 Review .....	2
2. Project Description.....	2
2.1 Construction, Operation and Maintenance Activities .....	4
2.1.1 Construction .....	4
2.1.2 Operation and Maintenance .....	4
2.2 Decommissioning and Rehabilitation Activities .....	4
3. Legal.....	5
4. Reference Documentation .....	5
5. Relevant Legislation and Reporting .....	5
6. Roles and Responsibilities.....	7
7. Waste Management.....	8
7.1 Waste Storage and Disposal .....	8
7.2 Non-Hazardous Waste .....	9
7.2.2 Domestic Waste .....	9
7.2.3 Carboard and Other Recycling .....	9
7.3 Hazardous Waste .....	10
7.3.1 Solid Hazardous Waste .....	10
7.3.2 Liquid Hazardous Waste.....	11
7.3.3 Permit and Approval .....	12
7.4 Miscellaneous Waste.....	13
7.4.1 Electronic Waste.....	13
7.5 Export of waste.....	13
8. Training.....	13

## List of Figures

Figure 2-1	The North Atlantic Wind-to-Hydrogen Project.....	3
------------	--	---

## List of Tables

Table 4-1	Internal Document Reference .....	5
Table 5-1	WMP Authorizations.....	6
Table 6-1	Roles and Responsibilities for personnel involved in the North Atlantic Wind to Hydrogen Project.....	7
Table 8-1	North Atlantic training requirements.....	14

## List of Acronyms and Abbreviations

BMP	Best Management Practice
CCME	Canada Council of Ministers of the Environment
CEPA	Canadian Environmental Protection Act
ERP	Emergency Response Plan
ha	hectares
HGP	Hydrogen Generation Plant
HP	Hydrogenation Plant
kV	Kilovolt
LOHC	Liquid Organic Hydrogen Carrier
MW	Megawatt
NARL	North Atlantic Refining Limited
NL DECC	Newfoundland and Labrador Department of Environment and Climate Change
NL EPA	Newfoundland and Labrador Environmental Protection Act
North Atlantic	North Atlantic Refining Corp.
O&M	Operations and Maintenance
OHS	Occupational Health and Safety
PA	Project Area
PPE	Personal Protective Equipment
TDG	Transportation of Dangerous Goods
UESI	Universal Environmental Service Incorporated
WDF	Waste Designation Forms
WHMIS	Workplace Hazardous Material Information System
WMP	Waste Management Plan

# 1. Introduction

---

North Atlantic Refining Corp. (North Atlantic) is committed to environmentally responsible operations. Waste generation is minimized through responsible environmental management, proper planning, employee training, and preventative maintenance.

This Waste Management Plan (WMP) is a living document for the North Atlantic Wind-to-Hydrogen Project (the Project). The WMP presents effective waste management activities, including but not limited to transportation and disposal, storage, roles and responsibilities, and training. This document is to be used in conjunction with the NARL Logistics WMP.

## 1.1 Scope

This WMP provides the processes and guidelines to be followed by all employees of North Atlantic to ensure the proper storage, handling and disposal of waste material. Compliance to the regulations, guidelines and approvals listed in Section 5 provide the basis for this plan. Contractors and sub-contractors will be encouraged to adopt the Plan.

The WMP identifies requirements and actions for the management of waste generated by the Project and applies to all components of the Project, including onshore wind energy generation, hydrogen production, dehydrogenation processing, derivative storage, and exporting. A Decommissioning and Rehabilitation Phase, outlining waste management details for end-of-life operations, will be completed and available six months after the start of operations.

## 1.2 Objectives

The objectives of this WMP include:

- Provide a summary of regulatory requirements.
- Establish the roles and responsibilities for waste management associated with the Project.
- Provide guidance to project personnel on the methods for collection, segregation, storage, and disposal of hazardous and non-hazardous waste stream associated with the Project.
- Provide documentation and reporting requirements for the regulatory bodies and to meet the needs of the Project.

## 1.3 Document Control

### 1.3.1 Record Keeping

All records related to the WMP will be maintained electronically for a minimum of seven years.

### 1.3.2 Review

The WMP will be reviewed annually, at a minimum, and updated where necessary.

## 2. Project Description

---

North Atlantic is proposing to develop, construct, and operate a Wind Farm, Hydrogen Generation Plant (HGP), and Hydrogenation Plant (HP) in the Placentia Bay and Trinity Bay regions (the Project). The Project, comprising 4,654 hectares (ha) of Crown land, will consist of a Wind Farm, a HGP and HP located adjacent to the Come By Chance Terminal. The Wind Farm will comprise 47 wind turbines, which will generate 324 megawatts (MW) of wind energy to power 30,000 tonnes per annum of hydrogen production at the HGP. The HGP will also be equipped to produce an additional 30,000 tonnes per annum of hydrogen for future expansions. Within the HGP, electricity and freshwater will feed electrolyzers that will extract hydrogen and oxygen from the water. The generated green hydrogen will be converted to a liquid organic hydrogen carrier (LOHC) in the neighbouring HP for export to Europe. Oxygen will be released to the atmosphere. The Project scope will include all standard components to operate a renewable energy facility, including an access road network, electrical collection system, a dedicated 138 kilovolt (kV) transmission line, substations, and office/maintenance buildings. Some existing Come By Chance Terminal infrastructure will also be utilized for the Project, including the jetty and four of the terminals 550,000-barrel storage tanks. Figure 2-1 provides an overview of the Project Layout.



**Figure 2-1 The North Atlantic Wind-to-Hydrogen Project.**

## 2.1 Construction, Operation and Maintenance Activities

Waste generated during the Construction and Operation and Maintenance (O&M) Phases of the Project, will be collected, transported and disposed of in accordance with this WMP and the existing NARL Logistics WMP.

### 2.1.1 Construction

The Construction Phase of the Project will involve site preparation and construction activities, including but not limited to:

- Civil works, including temporary accommodation facilities, site preparation, site clearing, grading, access roads.
- Wind Farm construction including wind turbine transportation and installation.
- Electrical infrastructure construction, including substations, collector system, and transmission lines installation.
- HGP and HP construction.
- Terminal Facility Upgrades, including retrofitting of existing crude tanks for LOHC storage and upgrades to the jetty.

### 2.1.2 Operation and Maintenance

The Project's O&M strategy will work to maximize wind energy generation and hydrogen production over the lifetime of the Project in a safe and environmentally acceptable manner.

## 2.2 Decommissioning and Rehabilitation Activities

The Project is expected to have a design life of approximately 30 years. During the end-of -design life, Decommissioning and Rehabilitation Phase activities will aim to restore the Project Area (PA) and typically include:

- Removal and appropriate disposal of all salvageable and non-salvageable equipment, materials, and supplies.

- Demolition and removal of all above-grade infrastructure including buildings and foundations.
- Removal and appropriate disposal of non-hazardous demolition debris.
- Re-contouring.
- Overburden and topsoil replacement.
- Natural revegetation.

## 3. Legal

---

This document reflects a commitment by North Atlantic to carry out the actions described and to report on results achieved.

## 4. Reference Documentation

---

**Table 4-1 Internal Document Reference.**

Document Number	Document Title
SOP-HSE-004	PPE Management
NA-P1-001	North Atlantic Wind-to-Hydrogen Emergency Response Plan (ERP)
ENV-M002	NARL Logistics LP: Environment Emergency (E2) Plan
LOGISTICS-M001	NARL Logistics LP: Oil Spill Emergency Response and Oil Spill Prevention Plan
-	NARL Logistics LP: WMP Outline
-	NARL Logistics LP: WMP
-	NARL Logistics LP Decommissioning and Restoration Plan

In the event of an emergency this document is to be used in conjunction with the North Atlantic Wind-to-Hydrogen Emergency Response Plan.

## 5. Relevant Legislation and Reporting

---

North Atlantic is responsible for meeting all applicable legislation, policies, and guidelines for the Project. The waste streams that will be handled, stored, and disposed will be tracked and reported. Prior to transferring any hazardous waste, a generator request will have to be approved from an appropriate facility. Waste manifests will be kept for the transportation of all waste removed from the PA.

Regulators that will require waste management logs, will be sent annual updates, or as required, under specific permits. All contractors will also provide waste manifests to North Atlantic for tracking and reporting purposes. Table 5-1 provides a list of authorizations applicable to the North Atlantic WMP.

**Table 5-1 WMP Authorizations.**

	<b>Authorizations</b>
Federal	<ul style="list-style-type: none"> <li>• CCME Environmental Codes of Practice for Aboveground and Underground Storage Tank Systems Containing Petroleum and Allied Petroleum Products</li> <li>• <b>Canadian Centre for Occupational Health and Safety (OHS) Act</b></li> <li>• <b>Canadian Environmental Protection Act (CEPA)</b></li> <li>• Cross-Border Movement of Hazardous Waste and Hazardous Recyclable Material Regulations</li> <li>• <b>Fisheries Act</b></li> <li>• <b>Transportation of Dangerous Goods Act</b></li> <li>• National Fire Code of Canada</li> <li>• Workplace Hazardous Materials Information System (WHMIS)</li> </ul>
Provincial	<ul style="list-style-type: none"> <li>• Air Pollution Control Regulations, 2022</li> <li>• Accredited Laboratory Policy</li> <li>• Best Management Practices (BMPs) for the Storage of Waste Dangerous Good/Hazardous Waste at Business Sites</li> <li>• <b>Dangerous Goods Transportation Act</b></li> <li>• Effluent Discharge Schedule Determination Policy</li> <li>• Environmental Control Waste and Sewage Regulations</li> <li>• Leachable Toxic Testing and Disposal Guidance Document</li> <li>• <b>Newfoundland and Labrador Environmental Protection Act (NL EPA)</b></li> <li>• <b>OHS Act</b></li> <li>• OHS Regulations</li> <li>• Precipitation Drainage of Dykes Areas Guidance Document</li> <li>• Storage and Handling of Gasoline and Associated Products Regulations</li> <li>• Used Oil and Used Glycol Control Regulations</li> <li>• Waste Diversion Regulations</li> <li>• Waste Management Regulations</li> <li>• <b>Water Resources Act</b></li> <li>• <b>Waste Material Disposal Act</b></li> </ul>
Municipal	The Project will follow local municipal bylaws and the <b>Urban and Rural Planning Act</b> for any waste handling, storage and/or disposal taking place within the municipal boundaries
Other	<ul style="list-style-type: none"> <li>• Atlantic PIRI Soil Quality Guidelines</li> <li>• International Convention for the Prevention of Pollution from Ships</li> <li>• International Maritime Dangerous Goods Code</li> <li>• International Air Transport Associations</li> </ul>

## 6. Roles and Responsibilities

Project members work effectively together only when they understand their roles and responsibilities with respect to Project Waste management. Table 6-1 provides the roles and responsibilities of Project personnel.

**Table 6-1 Roles and Responsibilities for personnel involved in the North Atlantic Wind to Hydrogen Project.**

Role	Responsibilities
Managers and Supervisors	<ul style="list-style-type: none"> <li>• Ensure staff, contractors, suppliers and visitors have been properly trained in the Project Waste Management Expectations and Procedures.</li> <li>• Provide resources and personnel to successfully execute the WMP.</li> <li>• Oversee all Project Construction and O&amp;M Phases, and ensure activities are conducted in line with environmental and waste management objectives, minimizing waste generation as much as reasonably possible.</li> <li>• Coordinate annual review of the WMP with all required teams and revise as required</li> <li>• Oversee daily waste management activities, and coordinate waste management activities to ensure operational best practices.</li> <li>• Ensure waste management resources are effectively utilized.</li> </ul>
Logistics Coordinator	<ul style="list-style-type: none"> <li>• Ensure correct handling, segregation, and storage of waste.</li> <li>• Prepare waste documentation and waste description.</li> <li>• Coordinate Shipments with Waste Management Contractors and advise the receivers of shipment quantity and classifications.</li> <li>• Report any health and safety issues with respect to the WMP</li> <li>• Conduct routine monitoring and audits of waste management procedures</li> <li>• Ensure correct documentation is in place</li> </ul>
Waste Management Coordinator	<ul style="list-style-type: none"> <li>• Ensure compliance with all applicable legislation and regulations.</li> <li>• Ensure compliance with all applicable requirements for transportation of dangerous goods.</li> <li>• Transfer waste documentation to relevant third parties or waste disposal contractors.</li> <li>• Maintain records and communicate waste management issues to Managers.</li> </ul>
All Site Staff and Contractors	<ul style="list-style-type: none"> <li>• Follow the WMP and know the waste management requirements specific to area or type of work.</li> <li>• Complete required Training in handling hazardous materials.</li> <li>• Notify Operations Manager or Construction Manager of environmental or unsafe waste management practices.</li> </ul>

## 7. Waste Management

---

There are three primary categories of waste streams associated with the Project:

- Non-Hazardous Waste.
- Hazardous Waste.
- Miscellaneous Waste.

This WMP will detail the requirements for storage, sampling and testing, and disposal for each type. North Atlantic will implement the principles of the 3 R's and will strive to reduce, reuse and recycle whenever possible.

### 7.1 Waste Storage and Disposal

North Atlantic will ensure that all hazardous, non-hazardous and other waste streams are stored in appropriate containers and at suitable locations. Storage areas must adhere to the following requirements:

- Appropriate signage.
- Adequate ventilation is provided via normal airflow.
- Suitable fire extinguisher is present.
- All hazardous waste is stored below eye level.
- Waste containers must be in good standards and labelled. Containers must be inspected at least once a month for labeling, container conditions, leaks and/or overflows.
- Waste containers must not be opened, handled, or stored in a manner that may rupture the container or cause leaks.
- Waste must never be left in areas accessible to the public.
- If for any reason North Atlantic is unable to comply with these waste management requirements, the Environmental coordinator will be contacted for immediate guidance.

All waste generated at the PA will be collected, segregated, labelled, and temporarily stored until transported for reuse, recycling or disposal. Before handling any waste, it is imperative to think safety first. It is the requirement for all site personnel to be aware of the hazards and risks associated with the chemical, material or product they intend to use. Waste handlers shall be certified with WHMIS,

Transportation of Dangerous Goods (TDG), and compliant with training outlined in the Hazardous Material Training Plan.

All hazardous waste streams must be shipped to an approved hazardous waste disposal facility. Hazardous waste can be sent to a receiver or hazardous waste management facility located outside of Newfoundland and Labrador (NL) only where the receiver or facility has been registered in the receiving province to accept that waste.

## **7.2 Non-Hazardous Waste**

### **7.2.2 Domestic Waste**

Domestic waste is non-hazardous and can be appropriately managed through disposal to landfill. Domestic waste includes food and beverage waste, packaging, cardboard, paper and paper products. The Project will have industry standard dumpsters located throughout the PA for storage of domestic garbage. Dumpsters will be emptied once every two weeks by a licensed contractor and transported to the Robin Hood Bay Waste Management facility. Any contractor utilized for this purpose must provide, in advance, their Certificate of Approval from the Government of NL, authorizing the collection and transportation of waste material from Eastern Newfoundland to the disposal facility.

Metal items will be segregated in an industrial bin and transported to NewCo metals in St. John's for recycling.

#### **7.2.2.1 Food Waste and Packaging**

Most food wastes will be generated in the lunchroom areas of the work site. All food waste will be collected and disposed of in an enclosed secure and covered collection bin to reduce odor and minimize the attraction of wildlife. Gathering and transporting this waste will be the responsibility of North Atlantic and its representatives. Littering around the PA is strictly prohibited and consequences will be enforced. Organic waste will be included with waste transported to the Robin Hood Bay Waste Management Facility.

### **7.2.3 Carboard and Other Recycling**

Carboard recycling will be generated from packaging of material delivered to the PA. Plastic bottles and aluminum cans will be generated in the lunchroom areas of the work site. Recyclables will be collected and disposed of in an enclosed secure and covered collection bin, divided by cardboard and containers.

Recyclables will be progressively removed from the PA and appropriately transported and disposed of at the Robin Hood Bay recycling facility in St. John's

## 7.3 Hazardous Waste

The Project may generate waste that is potentially hazardous to human health and/or the environment. Hazardous waste is a product, substance or organism that is intended for disposal or recycling, including storage prior to disposal or recycling and that:

- (a) Is listed in Schedules 2 and 7 of the Cross-border Movement of Hazardous Waste and Hazardous Recyclable Material Regulations (SOR/2021-25);
- (b) Is included in any of Classes 2 to 6 and 8 and 9 of the Transportation of Dangerous Goods Regulations under the **Transportation of dangerous Goods Act**, 1992; or
- (c) Exhibits a hazard classification of a gas, a flammable liquid, an oxidizer or a substance that is dangerously reactive, toxic, infectious, corrosive or environmentally hazardous.

### 7.3.1 Solid Hazardous Waste

Solid hazardous waste likely to be generated by North Atlantic includes tank bottoms, oily debris and possibly hydrocarbon oil contaminated soil. Large volumes of this material will be stored in roll off bins, designed for this purpose. In the case of tank bottoms, the bins will be stored near the tank that is being cleaned to minimize risk related to transport and located within the tank berm where possible.

Containers holding oily debris and contaminated soil will be stored on concrete pads in the area. These containers will typically be smaller drums due to the limited volume generated. All containers holding hazardous waste will be clearly labeled according to the requirements of WHMIS. Waste will be stored in accordance with the Department of Environment and Conservation Pollution Prevention Department Guidance Document, GD-PPD-077, "Best Management Practices for the Storage of Waste Dangerous Good/Hazardous Waste at Business Sites".

Transport and disposal of solid hazardous waste will be performed by a contractor approved to transport and dispose of the specific waste type. When possible, treatment of petroleum contaminated soil will occur at the local Universal Environmental Services Incorporated (UESI) facility to minimize the risks and emissions associated with the transport of hazardous waste. It is recognized that UESI has limited treatment capacity and approvals, subsequently materials such as tank bottoms and oily debris will require off-island treatment and disposal by a contractor approved for this specific type of waste.

Sampling and testing of certain types of hazardous waste will be required, particularly for tank bottoms, to determine the waste disposal method. In such cases, a representative sample will be obtained and sent to an ISO 17025 certified laboratory to test for key properties. This will typically include but is not limited to, total hydrocarbons, metals, and leachable metals.

### **7.3.1.1 Chemical Waste**

Chemical waste stream that may be generated during the Project can include

- Batteries.
- Solvents, Cleaners, paints, epoxies, and adhesives.
- Aerosol cans.
- Portland cement.
- Concrete additives.
- Packaging for chemicals.

When necessary, empty containers for solvents, paints, epoxies, adhesives, and aerosol cans will be collected and stored in suitable labelled disposal containers until they can be shipped to an offsite disposal facility.

### **7.3.1.2 Biomedical Waste**

For purposes of the WMP, biomedical wastes that are classified as hazardous include medical sharps such as needles. People who need to administer their own medication shall place used needles in an approved receptacle labelled “Sharps”, to be located in designated areas on the PA. These receptacles will be collected and removed from the PA to a licensed offsite facility for final disposal.

## **7.3.2 Liquid Hazardous Waste**

Liquid hazardous waste generated by North Atlantic could include:

- Used oil.
- Contaminated or expired chemicals that are no longer suitable for use.
- Hydraulic fluid.
- Lubricants.
- Coolants.
- Oily rags / absorbent pads.

- Contaminated soils, snow and ice.

Hazardous waste is categorized as a liquid if the material fails the slump test as per CSA A23-25C. These wastes will be segregated, as necessary, to render the individual waste streams suitable for reuse. Special precautions will be exercised when handling these materials since the improper release or disposal could adversely affect the surrounding environment. Personnel handling wastes will be required to have specific training and utilize Personal Protective Equipment (PPE) to ensure safe handling and disposal. Refer to the Hazardous Material Training Plan for more information.

Any used oil will be stored in amounts less than 205 L and will adhere to the requirements of the Used Oil and Used Glycol Regulations, 2015. Liquid hazardous waste will be stored on designated concrete pads to be sited throughout the PA. Handlers are to ensure that only compatible materials are stored together.

Any contaminated soil, snow or ice will be cleaned up immediately, in accordance with a site-specific plan to be developed in coordination with NARL Logistics Oil Spill Emergency Response and Oil Spill Prevention Plant (LOGISITICS – M001). Minor spills on contaminated soil, snow or ice will be sealed in labelled steel drums and stored in the hazardous waste storage area to await backhaul to an approved facility. Larger spills will also follow the site-specific protocol and remediation of areas will occur promptly.

Transport and disposal of liquid hazardous waste will be performed by a contractor approved to handle and dispose of the specific waste type. Testing is not anticipated to be needed for liquid waste and will rely on information contained in the Safety Data Sheet and working knowledge.

### **7.3.3 Permit and Approval**

Disposal of hazardous waste material in a municipal or regional waste disposal site is not permitted in the Province of NL. Consequently, such material will require transport to a licenced facility, possibly out of Province.

Hazardous material is transported off site by a hazardous waste transporter holding a Certificate of Approval issued by the provincial NL Department of Environment and Climate Change (NL DECC). To minimize risk and emissions associated with hazardous waste transport, local facilities are utilized whenever possible. Universal Environmental Services Inc., located near the NARL Logistics Terminal, is used for hazardous waste disposal services within their approved scope. When there is no facility on the island to treat a particular type of hazardous waste, it will be transported out of the province for treatment or disposal. Interprovincial transport of hazardous waste will require completion of a moving document with copies forwarded to NL DECC.

As a generator of hazardous waste, North Atlantic has a waste generator number issued by NL DECC.

## 7.4 Miscellaneous Waste

### 7.4.1 Electronic Waste

North Atlantic recognizes that recycling of e-waste keeps potentially harmful substances out of landfills. E-waste such as computers, monitors, and printers will be disposed of by an approved vendor with a focus on recycling metal components. Typically, e-waste will be delivered to the drop-off location at Rodway's Printing and Office Supplies in Clarenville.

## 7.5 Export of waste

In the event that waste is exported out of Canada for recycling or disposal, a federal permit to do so will be obtained from Environment and Climate Change Canada. All application and reporting requirements will be adhered to in accordance with the regulatory process and approval conditions.

## 8. Training

---

North Atlantic and its contractors will ensure that employees receive adequate training and be familiar with the ERP requirements. Regular training and drills will be conducted to prepare personnel and to test the viability of the plan.

North Atlantic, through its approved contractor, provides training to the operator(s) of the facility which is required to operate safely and to comply with the provincial requirements. Site specific training is provided, where the operator(s) will learn how to properly operate the equipment and the safety systems and will be trained on the emergency response procedures for the facility. In addition to the training requirement for emergency outlined in Table 8-1 North Atlantic employees and contractors who handle hazardous waste and liquid industrial waste at the PA are to receive waste management training related to the WMP covering the following topics:

- Definition of hazardous waste and liquid industrial materials on site.
- Emergency contacts and muster points.
- Basic orientation and training related to compliance with waste management practices and policies.
- Waste designation Forms (WDF).

- Adding hazardous waste and liquid industrial water into containers.
- Labeling containers and storage areas.
- Hazardous waste and liquid industrial waste storage and secondary containment.
- Responding to spills or other emergencies.
- WHMIS.
- TDG.

**Table 8-1     North Atlantic training requirements.**

Training	Position	Frequency
Emergency Response Plan – Awareness	All	On Hire
Emergency Response Plan – Full Simulation	Emergency Response Team	Every 5 years
Emergency Response Plan – Tabletop	Emergency Response Team	Annually

Please see the Hazardous Material Training Plan and the Wind-to-Hydrogen Emergency Response Plan for additional North Atlantic Personnel Training.