

## Requirements for Contractors and Service Providers on Environmental Matters

### Landsvirkjun's Environmental Policy (STE-0003)

Landsvirkjun is at the forefront of environmental and climate issues.

We respect the Icelandic landscape and natural environment and continually strive to optimise the use of resources and prevent waste. Emphasis is placed on understanding and minimising the environmental impact of our operations and preventing environmental incidents.

Landsvirkjun intends to achieve carbon neutrality and actively participates in the global response to climate change. We systematically work towards reducing our carbon emissions, supporting Iceland's commitment to the Paris Agreement, and responding to climate change-induced challenges and opportunities.

### Glossary

**Word use:** The word **Contractor** shall hereafter also refer to any Service Provider.

Symbols:

- General requirements
- Information submitted to Landsvirkjun
- + Response

## Requirements for Contractors and Service Providers

### 1 General requirements

#### 1.1 Introduction

Landsvirkjun is committed to acquiring knowledge on the environmental impact of its operations and to reduce any impact. All contractors and service providers involved in Landsvirkjun's operations must adhere to the company's environmental requirements. These requirements cover all construction, services and company operations. The requirements are not exhaustive but intended to act as guidelines. In many cases, the requirements exceed recognised legal and contractual obligations for contractors.

Landsvirkjun's policy provides contractors and service providers with appropriate information on environmental issues before work commences. Landsvirkjun believes this to be the best way to ensure that everyone who works for the Company has the necessary skills and knowledge to implement the Company's environmental policy.

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### 1.2 Requirements

- The Contractor shall appoint a responsible party and make them aware of the requirements outlined in this document before signing any contract.
- The Contractor shall obtain all necessary work permits for any work they execute for any Landsvirkjun project.
- Landsvirkjun will assess the need for and organise any environmental courses for the Contractor's employees before work commences.
- If Landsvirkjun should decide that an environmental course is necessary, then the Contractor shall ensure that their employees attend these courses.
- Participation in all courses shall be registered.

## 2 Energy use

### 2.1 Fossil fuel consumption and oils

#### 2.1.1 Introduction

Fossil fuels are used during operations to fuel vehicles, various machinery, equipment, drills and for back-up power. Fossil fuel combustion negatively impacts climate change, and Landsvirkjun has therefore decided to discontinue the use of fossil fuels by 2030. Landsvirkjun has subsequently set various objectives to reduce fossil fuel consumption during construction projects.

#### 2.1.2 Requirements

##### 2.1.2.1 Fuel consumption – climate change

- The Contractor shall minimise the consumption of fossil fuels by, amongst other things, using electricity or other sustainable fuel sources and shall submit a consumption plan before works commence.
- Should the project require the use of vehicles other than for transport to and from the worksite, then the Contractor shall ensure that at least 15% of the passenger vehicles and vans used during construction are either electric or powered by another type of sustainable fuel, unless otherwise specified.
- The Contractor shall subsequently submit to Landsvirkjun, an overview of actual fossil fuel consumption. This overview will include information on individual vehicle and machinery fuel consumption unless otherwise specified.
- All on-site machinery, e.g., drilling equipment/ gravel crushers, shall use electricity or other sustainable fuels unless otherwise specified by Landsvirkjun.
- Vehicles and mechanical equipment shall not be kept running idle.

#### 2.1.3 Pollution and leakages:

- The release of oil and oil products into water, groundwater or soil is prohibited.
- The spillage of fuel or oil (hydraulic oil and lubricants) during the filling of tanks, equipment, and machinery shall be prevented.

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- The maintenance of mechanical equipment and vehicles shall be carried out in an appropriate area, equipped with anti-pollution equipment.
- Equipment/machinery shall be appropriately maintained to prevent drips/leaks/spills and unnecessary smoke or soot emissions.
- Oil spills shall be reported to Landsvirkjun within 24 hours.
- The Contractor shall submit to Landsvirkjun a written environmental incident response plan. All spills over 50 litres must be reported to a Landsvirkjun representative and the appropriate authorities.
- The Contractor shall submit a plan for machine condition monitoring at the onset of construction.
- + All machinery and vehicles with a fuel tank containing more than 100 litres shall be equipped with absorption mats or other approved equipment to contain oil spills.
- + Soil contaminated by oil shall be removed immediately and delivered to a recognised waste disposal specialist or treated according to instructions provided by the relevant public health and environment authority.
- Biodegradable oils (oils that break down easily and do not harm water biota) shall be used in sensitive water environments or other environments identified by Landsvirkjun as sensitive environments.

### 2.1.4 Oil tanks and procurement

- The Contractor shall acquire the necessary work permits for operating oil tanks, oil tank equipment and storage.
- Oil tanks shall be kept in areas where they do not threaten the ecosystem or water sources.
- Anti-pollution, collision, fire, and accident equipment shall be available during the operation of oil storage facilities.
- Fuelling shall be conducted on flat concrete areas over drip pans.
- The oil volume in oil tanks shall depend on the size of the oil leakage sump.
- Oil leakage sumps shall be installed in all fixed fuel tanks.
- All drivers shall carry an ADR licence to transport more than 400 litres of petrol or 1000 litres of diesel.
- The responsible party for the fuel tank shall register the size and location of fuel tanks and use written work procedures on tank inspections.

## 2.2 Electricity and hot water

### 2.2.1 Introduction

Landsvirkjun intends to discontinue its use of fossil fuels by 2030 and increase its use of electricity and geothermal energy in all operational areas. Contractors have access to a predetermined amount of free electricity, where available. Energy consumption must be monitored, and sustainable utilisation ensured. Limiting consumption and energy-saving awareness reduces waste, environmental impact, and construction costs.

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### 2.2.2 Requirements

- Renewable energy sources such as electricity and hot water shall be utilised responsibly to prevent waste.
- A record of hot water consumption for all projects shall be kept and subsequently submitted to Landsvirkjun. Directions for the use of hot water in geothermal areas shall be provided by Landsvirkjun.
- An electricity consumption record shall be kept for all projects and subsequently submitted to Landsvirkjun.

## 3 Hazard labelling

### 3.1 Introduction

Preference shall be given to certified environmentally friendly goods with ecological labellings, such as the Nordic Swan and the European Flower or comparable labelling.



Hazard labelled substances must never be released into the environment and should only be used when necessary. Hazard labelled substances can have a damaging effect on human health, wildlife, and the environment. They can have a toxic effect on aquatic organisms and can have a long-term negative impact on river biota. Examples of hazard labelled substances that are harmful to the environment include oils, hydraulic oil, paint, fuel, glue, tar remover, water-repellent sprays, and varnish. The transportation of substances, leakages from storage units, the use of or refilling of a device or container and fire can pose a risk to the environment.

### 3.2 Requirements

- Preference should be given to environmentally certified products, e.g., paints and other hazard labelled substances, in cooperation with the buyer.
- The Contractor shall submit a list of hazard labelled substances used on-site, to be approved by the client, before transporting these to the site.
- A risk assessment on the handling, storage and disposal of hazard labelled substances shall be submitted before work commences.
- The Contractor must request specific permission from Landsvirkjun to use any carcinogenic, reproductively toxic, or mutagenic substances.
- Any use of substances subject to the restrictions outlined by REACH (e.g. substances mentioned in Appendices XIV & XVII - REACH) is prohibited.
- The substances list shall be updated to include any new hazard labelled substances used on-site during the construction period.
- Safety data sheets (cf. relevant regulations) shall be available on-site for hazard labelled substances.
- The handling and use of these substances must be in accordance with safety data sheets, and safety equipment shall be available.

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- The transfer of hazard labelled substances into other containers is prohibited unless the packaging is suitable for the material and marked in accordance with the applicable requirements.
- Hazard labelled substances shall be stored in predetermined areas.
- A licence must be acquired for the use of toxic substances. Toxic substances must be kept in a locked storage area.
- The discharge of toxic or hazardous substances such as oil products and turpentine into drain or sewage systems is prohibited.
- All unused or residual hazard labelled substances shall be removed from the site on completion of the works unless otherwise specified in the work permit.
- All residual substances and containers/packaging for hazard labelled substances shall be removed from the site.
- Hazard labelled waste must be handed over to recognised waste disposal experts. Contractors shall submit confirmation to Landsvirkju's representative. Copies or receipts must be retained for confirmation and verification purposes.

## 4 Waste

### 4.1 Sorted waste

#### 4.1.1 Introduction

All used items ultimately become waste. Landsvirkjun has set a goal to achieve full waste recycling by 2030, by reintegrating all waste materials back into the resource cycle. The most significant factor in minimising the negative impact of waste is reducing both its volume and production of waste. If waste is generated, every effort should be made to reintroduce the materials to the cycle of resources. All waste must be sorted for recycling and reuse wherever possible to prevent unnecessary waste and pollution. Unsorted waste is incinerated or sent to landfills, both of which cause GHG emissions.

Construction and demolition waste must be classified into the following categories:

- Timber
- Metals
- Glass
- Plastic
- Cardboard
- Paper
- Gypsum
- Hazardous/toxic substances
- Soil and excavation
- Kitchen waste for groundwork
- Unsorted waste

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### 4.1.2 Requirements

- The contractor shall strive to reuse materials as much as possible. In cases of demolition, materials should be handled to facilitate potential reuse.
- The Contractor shall actively avoid, reduce, reuse, and recycle any waste.
- A waste management plan must be submitted by The Contractor to Landsvirkjun before construction commences.
- The Contractor is responsible for removing any waste created on-site by The Contractor unless otherwise specified.
- Waste must be contained properly to prevent waste accumulation and wind-carried waste.
- Containers should be appropriately labelled by waste category. Waste should be regularly removed from containers to prevent overfilling. Where applicable, ensure that containers are closed or have the option to do so.
- Contractors should not leave behind or use any of Landsvirkjun's waste containers for waste disposal unless explicitly agreed or specified in the work permit.
- All waste must be handed over to a recognised waste disposal expert. Contractors are required to submit a record of the type of waste, amount and disposal method to a Landsvirkjun representative. Copies or receipts must be retained for confirmation and verification purposes.
- Landsvirkjun must give specific approval for the disposal of any leftover substances or waste (e.g., timber and metal) to anyone other than a recognised waste disposal expert.

## 4.2 Hazardous waste

### 4.2.1 Introduction

Hazardous waste is defined as any residual hazardous waste, including all containers and packaging. This type of waste can be flammable, toxic, carcinogenic, corrosive, cause irritation, have serious health effects and can be harmful to the environment. Hazardous waste spills can result in environmental pollution, negatively affect ecosystems and nearby water bodies. Therefore, use of hazardous materials must be kept to a minimum. Mixing and transporting hazardous substances with general waste to a landfill can contaminate soil and water.

### 4.2.2 Requirements

- Hazardous substances must not be mixed with other waste and must be stored in a safe area to prevent environmental pollution.
- Hazardous material transferred to a container, such as a bottle, must be properly labelled with relevant information regarding their hazardous properties (e.g., flammable, irritant) and the type of substance (e.g., oil, paint, solvent).
- Any contractor or service provider in doubt whether a substance is considered hazardous waste should seek advice from recognised waste recipient, the

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regional public health and environment authority or the Environmental Agency of Iceland.

- Contractors shall not leave behind or use any of Landsvirkjun's hazardous waste containers for the purpose of disposing of any hazardous waste unless otherwise agreed or specified in the work permit.
- Hazardous waste must be handed over to a recognised waste disposal expert. Contractors are required to regularly submit confirmation to Landsvirkju's representative. Copies or receipts must be retained for confirmation and verification purposes.

## 5 Effluents

### 5.1 Introduction

Effluents at construction sites and in Landsvirkjun's other operational areas can be traced to various activities such as tunnelling, wells, drilling sites, workshops, storage facilities, power stations and work camps. The insufficient clean-up of effluents and sewage can mean that oil, tar, tar removers and other pollutants are not separated from otherwise harmless effluents, therefore potentially polluting the environment. The appropriate cleaning equipment such as oil separators, sediment, and septic tanks, shall be made available. The discharge of oil products, fuel, organic solvents or other pollutants into drainage or sewage systems is prohibited.

### 5.2 Requirements

- The discharge of toxic or hazardous substances such as oil products and turpentine into drain or sewage systems, is prohibited.
- The Contractor shall acquire the necessary permits for the installation of any sumps (fat, sewage, oil etc.) during the project period unless otherwise specified. The Contractor shall also be responsible for their operation.
- Oil separators, sedimentation and septic tanks shall have sufficient capacity for the purposes intended, supported by calculations and monitoring.
- The unplanned surface discharge of water or cuttings into the environment is prohibited.
- Water discharged into the natural water channel (from drilling, tunnel excavation and other work) shall not contain particles larger than 75 µm in diameter. The relevant municipal health authorities shall assess the situation, introduce more stringent requirements, or approve the work procedures. Landsvirkjun can also include detailed provisions on the handling of effluents in the relevant tender documents or work contracts.
- A monitoring plan for effluents and an inspection plan for oil separators, sediment and septic tanks shall be submitted to a Landsvirkjun representative.
- Tanks shall be emptied by a recognised disposal expert. Contractors shall submit confirmation to Landsvirkjun's representative. Copies or receipts must be retained for confirmation and verification purposes.



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### 6 Water utilisation

#### 6.1 Groundwater utilisation - cold water

##### 6.1.1 Introduction

Water is used for human consumption in work camps and for cooling purposes. Water extraction can compromise the water source if extraction exceeds the water source's natural ability to replenish itself. Excess water consumption can result in water shortages and can also negatively impact vegetation and wildlife. Water can become polluted by released condensate and separated water, oil, hazardous substances, and effluents.

##### 6.1.2 Requirements

- Contractors should use water conservatively to mitigate any adverse effects on the ecosystem.
- Groundwater must be protected from pollution caused by construction or operations.
- A groundwater utilisation plan must be submitted to Landsvirkjun for approval where necessary.

### 7 Procurement

#### 7.1 Introduction

Procurement procedures should encourage the purchase of certified environmentally friendly goods with ecological labels, such as the Nordic Swan, European Flower, or equivalent certifications. Environmentally friendly procurement involves choosing goods and services that are less likely to have adverse effects on the environment and human health. Environmentally friendly goods should have similar or lower life cycle costs than other comparable goods and services.

#### 7.2 Requirements

- Eco-friendly vehicles and machinery shall be used whenever possible.
- Goods and services with the lowest carbon footprint shall be purchased.
- Procurement processes for hazardous substances should minimise the use of these products and therefore minimise any impact on the environment during construction.
- Environmentally friendly goods with reliable ecological labelling, such as the Nordic Swan, European Flower or comparable labelling, should be chosen whenever possible.
- A carbon footprint confirmation, based on an EPD sheet following ISO 14025 or similar standards, must be submitted to assess and confirm the carbon footprint of concrete and steel.



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### 8 Land use, ecosystems, and society

#### 8.1 Ground disturbance

##### 8.1.1 Introduction

Ground disturbance caused by the construction of structures, material extraction and material disposal (spoil areas) unavoidably affect the physical landscape and geological formations. The Contractor must minimize any negative impact on vegetation, geological formations and visual aesthetics. Any ground disturbance outside the construction site is strictly prohibited, and the scale of construction should be kept to a minimum. Areas disturbed during construction shall be cleaned up and restored to a state that harmonizes with the surrounding environment. Long-term negative impacts, such as soil erosion, must be proactively prevented.

##### 8.1.2 Requirements

- All off-site disturbance, including material extraction and material disposal, is prohibited.
- A work permit must be provided by Landsvirkjun before construction commences. The permit should include a description of the project's scale, and the demarcation of the construction site.
- The Contractor shall ensure that all on-site work remains within the demarcated area, by taking the necessary action, such as marking the demarcated area.
- Landsvirkjun can require that machinery that could cause land disturbance be equipped with warning systems that would notify the operator of the boundaries of demarcated areas.
- Off-road driving is prohibited.

#### 8.2 Ecosystem

##### 8.2.1 Introduction

Construction work can affect various parts of the ecosystem, including fish migration, population size, habitats, bird-nesting areas, vegetation, reindeer behaviour during calving periods, the choice of grazing land and nutrition. Noise from machinery, equipment, drills, active wells, and explosives can disturb wildlife, especially during the spring period.

##### 8.2.2 Requirements

- Work procedures should be executed in such a way as to prevent environmental incidents such as oil leakages and the distribution of plastics or other harmful substances which could negatively impact the environment. The use of plastic fibres in sprayed concrete and plastic casing for explosives is therefore prohibited.
- The Contractor shall ensure that plastics are not ripped open and distributed into the environment by water or wind.

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- Appropriate work procedures should be used for noisy construction work, e.g., hammer drilling, high-pressure water pumps, chiselling or explosive work.
- Clear work procedures on the responsible treatment of nature and its ecosystems shall be in place, and off-road driving shall be prevented. Work should be organised according to the season, considering nesting, migration, calving periods and other aspects.

### 8.3 Visual impact and landscaping

#### 8.3.1 Introduction

Visual impact is defined as any changes to the physical landscape that affect the human experience of that area, including new structures or any disturbance to the landscape caused by construction or research. The impact can vary depending on landscape characteristics and land use.

#### 8.3.2 Requirements

- The provisions outlined by Landsvirkjun's project specifications on structures, material extraction sites, spoil areas and worksites for work camps and other facilities must be fulfilled.
- Construction sites should be kept tidy.
- The design of structures and landscape shall be in accordance with Landsvirkjun's policy.
- The Contractor shall ensure that the worksite is clean, well-organised and cleaned daily or more frequently, if necessary.
- Work camps shall be kept clean.
- Storage areas shall be well-organised and protected from weather and collapse.

### 8.4 Society

#### 8.4.1 Introduction

All contractual work shall be carried out in such a manner as to reflect Landsvirkjun's policies and requirements in all its operations. The effects of Landsvirkjun's construction projects vary. Some projects have little or no impact, whereas others can affect the entire country. Noise can affect inhabited areas, recreational activities, and the tourist experience. Landsvirkjun's power production areas are located close to nature reserves such as national parks, which should not be disturbed by operations. Landsvirkjun is committed to working in consensus with local communities and stakeholders. Contractors are expected to do the same.

#### 8.4.2 Requirements

- Participation in cooperative projects with local communities is expected, in accordance with Landsvirkjun's instructions.
- Vehicles travelling near local communities shall abide by the legal speed limit.
- Roads and rambling and riding tracks shall be kept clean and unhindered.

## Requirements for Contractors and Service Providers on Environmental Matters

- Appropriate work procedures should be used for noisy construction work, e.g., hammer drilling, high-pressure water pumps, chiselling or explosive work.
- Construction shall be organised in such a manner as to minimise any disturbance to sheep grazing and sheep herding.
- Contractors are responsible for any sheep fencing within the construction site and shall prevent sheep from reaching fenced off areas.