seai SUSTAINABLE ENERGY AUTHORITY OF IRELAND

Rialtas na hÉireann
Government of Ireland

Hydropower

Manual of Consenting Procedures

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RPS

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Disclaimer

Sustainable Energy Authority of Ireland

SEAI is Ireland’s national energy authority investing in, and delivering, appropriate, effective and sustainable solutions to help Ireland’s transition to a clean energy future. We work with the public, businesses, communities and the Government to achieve this, through expertise, funding, educational programmes, policy advice, research and the development of new technologies.

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Abbreviations

Abbreviation	Definitions
A	Amps
AA	Appropriate Assessment
ARCs	Activities Requiring Consent
BCA	Building Control Authority
BCMS	Building Control Management System
CEF	Connecting Europe Facility
CEG	Clean Export Guarantee
CEMPs	Construction Environmental Management Plans
CER	Commission for Energy Regulation
CHP	Combined Heat and Power
CIÉ	Córas Iompair Éireann
COR	Certificate of Registration
CPPA	Corporate Power Purchase Agreements
CRU	Commission for Regulation of Utilities
DAC	Disability Access Certificate
DAFM	Department of Agriculture, Food and the Marine
DCCAE	Department of Communications, Climate Action and Environment
DS3	Delivering a Secure, Sustainable (electricity) System programme
DSO	Distribution System Operator
DUoS	Distribution Use of System
EC	European Commission
EcIA	Ecological Impact Assessment
ECP	Enduring Connection Policy
EEC	European Economic Community
EIA	Environmental Impact Assessment
EIAR	Environmental Impact Assessment Report
ELS	Export Limiting Scheme
EPA	Environmental Protection Agency
ESB	Electricity Supply Board
EU	European Union
GEP	Good Ecological Potential
GES	Good Ecological Status
IPC	Integrated Pollution Control
IROPI	Imperative Reasons of Overriding Public Interest'
kVA	Kilo-volt-amperes

Abbreviation	Definitions
LFL	Limited Felling Licence
LV	Low Voltage
LVIA	Landscape and Visual Impact Assessment
MACs	Maritime Area Consents
MARA	Maritime Area Planning Act
MEC	Maximum Export Capacity
MHLGH	Minister Housing Local Government and Heritage
MIC	Maximum Import Capacity
MULs	Maritime Usage Licences
MV	Medium Voltage
MW	Mega Watt
NBCO	National Building Control and Market Surveillance Office's
NC5	New Generator Connection Application
NHA	Natural Heritage Areas
NIS	Natura Impact Statement
NMS	National Monuments Service
NPF	National Planning Framework
NPWS	National Parks and Wildlife Service
OPW	Office of Public Works
ORESS	Offshore Renewable Electricity Support Scheme
pSPA	proposed Special Protection Areas
PV	Photovoltaic
RENEWFM	renewable energy projects, including the Renewable Energy Financing Mechanism
RESS	Renewable Electricity Support Scheme The Renewable Electricity Support Scheme
RSA	Road Safety Authority
SAC	Special Areas of Conservation
SEAI	Sustainable Energy Authority of Ireland
SEM	Single Electricity Market
SI	Statutory Instrument
SID	Strategic Infrastructure Development
SME	Small and Large enterprise
SPA	Special Protection Areas
SRESS	Small-Scale Renewable Electricity Support Scheme
TII	Transport Infrastructure Ireland
TSO	Transmission System Operator

Abbreviation	Definitions
TUoS	Transmission Use of System
VAT	Value-added tax
WFD	Water Framework Directive

1 Introduction

1.1 Purpose of this Guide

SEAI is the Single Point of Contact for guidance on the licensing and permitting requirements for renewable energy projects in Ireland. The aim of the initiative is to make it easier to find out what licences and permits may be required during the different stages of your hydropower renewable energy project. As part of this initiative, SEAI has produced an online tool. The online Licence and Permit finder tool is located at Renewable Energy Consenting | Single Point of Contact | SEAI. It allows you to search for licenses and permits that may be required for your project at relevant stages of development.

This manual has been produced to accompany the *SEAI Single Point of Contact Renewable Energy* online tool. It provides a more detailed overview of specific technological, legislative, and regulatory requirements in relation to the development of hydropower projects in Ireland. This manual provides guidance and assists users in identifying the applicable consents and licences that may be required for the design and construction phase, operations and maintenance phase, and project end-of-life procedures for hydropower projects. It is important to note that SEAI has no decision-making role within the consenting process itself, but is available to provide guidance and support in navigating and understanding the consenting process.

1.2 An Introduction to Hydropower

Ireland needs to improve its electricity generation and transition towards sustainable energy sources. Hydropower, such as pumped hydroelectric power stations, is a proven technology that can contribute to reaching these targets as a grid-scale renewable energy source.

Hydropower, also known as hydroelectric power, is a form of renewable energy that utilises water stored in dams and fast-flowing rivers to generate electricity in hydropower plants. Hydropower requires the source to be fairly close to the site of power usage or to the national grid.

There are three different types of hydropower:

- Micro-hydroelectric power;
- Impoundment; and,
- Pumped storage plant.

About 2.2% of Ireland's electricity generating capacity comes in the form of hydropower, which is expected to increase by 2030. Hydropower projects vary in scale and output, resulting in different scales of regulation needed for a specific project. Larger commercial projects will naturally have more complex consent requirements than smaller or microscale installations. However, the onus remains on the project owner/developer to ensure that any project, regardless of scale, is compliant with relevant legislation and regulations.

1.2.1 Micro-hydroelectric power

Small micro-hydroelectric power systems produce electricity for a domestic home, farm, or small community. Improvements in small turbines and generator technology mean that "micro" technology (under 100 kilowatts (kW)) hydro schemes are becoming a more attractive means of producing electricity[1].

The electricity generated from micro-hydroelectric power may be used directly on site or exported to receive a fixed payment from an Electricity Supplier for the electricity produced from the turbine. The likely range is from a few hundred watts to a minimum of 250 kW for commercial schemes.

Micro-hydroelectric schemes for domestic use would typically seek to generate a minimum of 5 kW. These

[1] *Small Scale Hydro Generation - Teagasc | Agriculture and Food Development Authority*

usually require much smaller capital investment as water can be piped between locations to create the desired/required head and flow rates. Steep courses of many small streams and rivers in rural Ireland lead to excellent head heights and flow rates, making these ideal for small or micro-hydroelectric installations. Grid connections for smaller electrical generators are not a significant problem, as the existing electrical distribution system is capable of accommodating such smaller electricity suppliers.

1.2.2 Impoundment Power

Impoundment hydroelectric power utilises a dam on a river to store water in a reservoir. Smaller hydroelectric power plants, on the other hand, use a small canal to channel the river water through a turbine. Water is then released from the reservoir through a turbine, rotating it, which then activates a generator to produce electricity. Examples of dammed power stations over 20MW in Ireland are: Ardnacrusha along the River Shannon (County Clare), Ballyshannon, on the River Erne (County Donegal), and Poulaphouca on Blessington Lakes (County Kildare).

1.2.3 Pumped Storage Plant

Pumped storage plants function in a similar fashion to battery storage. They create a storage system by pumping water to a higher elevation during periods of low electricity demand, then, during peak demand periods, release this water so it flows through a hydroelectric turbine when needed to generate electricity.

Pumped storage plants are typically located between two water reservoirs at different elevations, allowing them to generate power as water flows from one to the other. This system uses a considerable amount of power to pump water back into the upper reservoir to restore the generating capacity. A pumped storage plant is considered to be an energy user, with overall energy consumption being greater than that produced. Therefore, as the electricity produced from pumped storage has previously used electricity to pump water uphill, **pumped storage plants are not classed as renewable.**

An example of a pumped storage hydropower facility in Ireland is Turlough Hill, in County Wicklow, which has four turbines and a capacity to generate in the region of 292 MW of electricity. The government is anticipating that an additional 260 MW of pumped storage hydroelectricity capacity will be brought online by 2030, through a planned site in Nenagh, County Tipperary in 2028, which, when completed will have the capacity to store up to 260 MW of electricity which will approximately double the pumped storage capacity by the state[2].

1.3 Hydropower Energy Stages

The life cycle of a hydropower energy project has several phases. Initial assessments are carried out during the feasibility phase to determine the project's viability. This can also provide insight into which permits/licences will be required, as these can vary based on project type and specific location. The planning and permitting phases and the pre-construction phase are where licences/permits and any relevant advance requirements are determined for the project. These phases can overlap and occur simultaneously. Successful construction of the project is followed by commissioning, during which final tests are conducted.

Licences or permits may be required during the project's operation to ensure continuous maintenance is permitted. Finally, decommissioning a project will also require licencing/permitting, depending on whether the project will be removed, extended, or replaced. The following sections of this manual outline each phase of the life cycle, including relevant permits, licences, regulatory requirements, and schemes associated with each phase.

[2] *Pumped storage: Scope for further development – Energy Ireland*

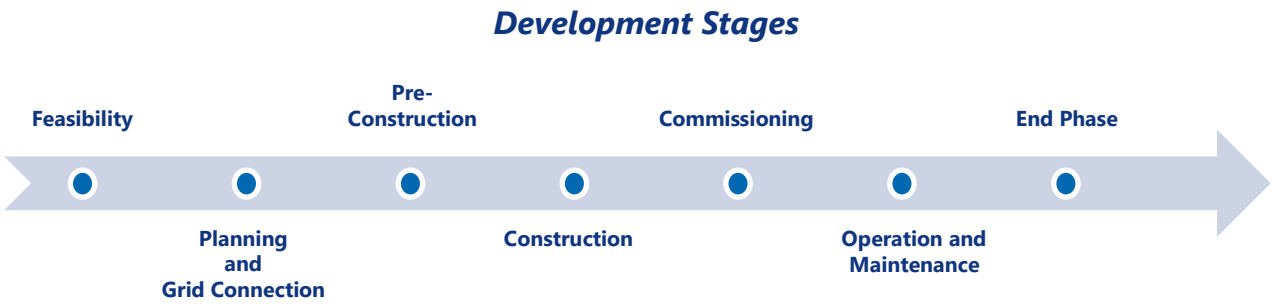

Figure 1: Hydropower Project – General Development Stages

2 Design and Construction Phase

2.1 Site Selection and Feasibility

The feasibility of hydropower stations depends on sites with good water resource potential, i.e., sites must meet specific requirements in order to be considered a potential location for hydroelectricity generation.

The SEAI has developed a **hydropower map** that shows potential hydro sources (594 sites) in Ireland, as well as existing hydro connections (65 sites)[3].

To ensure the project is financially viable, the following factors should be taken into consideration to ensure any hydropower projects produce sufficient energy.

- Environmental effect;
- Water Availability;
- Head of water[4];
- Water storage;
- Site accessibility;
- Grid Connection;
- Water Pollution; and
- Geological Investigation.

The outcome of feasibility assessments will aid in determining the necessary licences/permits for your project; therefore, it is important to consider the specific assessment needs of your project to ensure preparation for the planning and permitting phases.

It is important to develop a project plan that maps out all the stages needed to realise your project, moving toward design. A consent plan will be an important tool in understanding the potential timelines, the project milestones, and stages whereby permissions are required to proceed with various elements of your project, and allows you to plan accordingly.

2.2 Environmental Effect

An ecologically sensitive site, such as those within Natura 2000 sites, will require more careful environmental planning so as not to impact the conservation objectives and qualifying interests of protected sites. Even if the hydroelectric plant is outside a Natura 2000 site, it may still (by virtue of the reservoir or alteration of current downstream) impact Natura 2000 sites. The impact on migratory species such as lamprey (*Petromyzon marinus*), sea trout (*Salmo trutta trutta*), eels (*Anguilla anguilla*), and salmon (Salmo salar) can, if not properly addressed, result in project delays or refusal. There are currently 40 rivers or river tributaries in SACs (Special Areas of Conservation) in Ireland which have salmon as a qualifying interest. Therefore, it will be important to ensure that any hydroelectric scheme does not prevent access to important spawning grounds and does not damage them in any way.

The principal environmental impact of hydroelectric schemes is a result of damming rivers. Reservoirs slow water flow and flood river valleys. This can potentially result in stream beds becoming covered in a fine layer of mud and silt, potentially creating algal blooms in stagnant, warm water in the reservoir. Additionally, sudden releases of water from the bottom of the reservoir can alter water temperatures downstream. Apart from creating artificial barriers to migratory fish species, damming can alter the flow patterns of rivers, which

[3] Hydro Atlas

[4] *Head is the vertical distance the water falls between the reservoir and the turbine;* https://www.energy.gov/energysaver/planning-microhydropower-system

then removes seasonal variation and disrupts the seasonally dependent river ecosystems. A thorough environmental assessment of any project (particularly where dam construction is involved) is essential to ensure the viability of the project and to include necessary mitigation measures and controls.

2.3 Water Availability

Water availability is an essential requirement for hydropower. Water is needed to rotate the turbine blade to generate electricity. A sufficient quantity of water must be available to make a hydroelectric scheme viable; this determines the amount of power that you can produce. While vertical fall to the turbine from the reservoir is important to consider, replenishment rates of water used must be adequate to maintain electricity production. Therefore, in smaller installations with no dam or reservoir, seasonal flow will be important, as periods of drought may lead to low or no electricity production. The water catchment area influences the flow rate. Higher flow rates are typically associated with a lower head of water, which is discussed in **Section 2.4.**

2.4 Head of Water

The head, or the vertical distance the water falls to the turbine, is probably the most important factor for a good hydropower site. The power, and therefore energy output, from a site is proportional to head. The cost of a hydroelectric system is determined by the physical size of the structures and the turbine(s). As heads decrease and water volumes decrease (due to lower pressure and, consequently, lower velocities), the system becomes more expensive. The opposite is true as the head increases; the system gets physically smaller and costs less. At the same time, the power and energy production increase, making the return on investment higher. Therefore, where feasible, it is worthwhile increasing the head or elevation of the water intake.

Typically, a gross head of water of 2m with an average flow rate of 1.9m^3/s is deemed necessary to generate approximately 25 kW of power. Micro-generation hydroelectric schemes can function and are viable on a head of water as low as 1m.

2.5 Water storage

Alongside the availability of water, water is typically stored in a reservoir to provide a constant source of water to the turbine at a consistent high pressure. Micro-hydroelectric schemes can use natural flow in rivers or from a lake via a pipe, without the need to block or dam the river or lake outflow to generate electricity.

Where a reservoir is required, the dam will typically be the largest piece of infrastructure associated with the project. The reservoir created will need to be large enough to enable continued operation of the generators throughout the year. The size of a reservoir will depend on the replenishment rates of water and the amount of water required for generating, as well as any water lost through evaporation or allowed to flow past the dam to maintain river levels downstream.

In the case of pumped storage, typically two reservoirs or lakes are used, with water pumped up to the higher reservoir during low electricity usage periods (when electricity is cheaper). This energy is used to pump the water uphill to a higher elevation, which can then be released to the lower lake or reservoir to generate electricity during periods of peak demand.

2.6 Site Accessibility

During the construction stage, and to a lesser degree for ongoing operation and maintenance, the site will need access for construction equipment, delivery vehicles and cranes, etc. This may require road/bridge/culvert reinforcement, site access road construction, felling of trees or overhanging branches, clearance of hedgerows, loss of verges, and removal of old walls/buildings (if necessary).

2.7 Grid Connection

Prior to construction, a grid connection study must take place to ensure that a new system can safely connect to the existing grid without causing issues. The grid connection available will determine the amount of energy the project can sell to the grid, which ultimately may result in the output of the generator being

reduced at times. This is known as network constraints or curtailment. High constraints on the network impact the viability of the project in economic terms. All generators greater than 1 MW in size can be constrained down by EirGrid.

For micro-hydroelectric schemes, grid connection is usually not an issue, but it will provide stability of supply for domestic and small business schemes and effectively store electricity for later use during periods when generation may be interrupted or insufficient to meet demands. Currently, generators less than 1 MW are not controllable by EirGrid and therefore do not experience constraints.

2.8 Water Pollution

Studies show that water is naturally corrosive, but this corrosivity can be increased by pollution from human activities such as agriculture, land conversion, urban and industrial discharge. This increased corrosivity has led to an increased cost of maintenance of hydro-mechanical facilities.

In addition to this, debris in the river may block and clog turbines, resulting in increased downtime for maintenance and repair and less electricity production. Severe algal blooms may clog turbines or reduce efficiency in electricity generation. Waters heavily laden with silt can result in erosion of turbine components, leading to higher costs in maintenance and repair.

It is essential to gain a proper assessment of the turbidity (sediment content), water quality, acidity, and debris in the river, which will serve to inform the financial viability of the project.

2.9 Geological Investigation

Geological structures such as faults, joints and bedding planes affect the stability of dams, and the behaviour of foundations and abutments. The porosity of rock and soils around the reservoir impacts the ability of the reservoir to hold water and the head of water available for electricity generation. Therefore, proper site investigation is imperative before a dam can be constructed to ensure it is not liable to movement or collapse and to ensure the water is retained in the reservoir.

2.10 Constraints Identification

A constraints identification and mapping exercise is a useful way to identify and visually present constraints that may exist for a certain site. This can show existing infrastructure and features, such as pipelines and cables, sensitive areas, houses, etc. This will allow hydropower energy developers to see where specific constraints exist visually, rank them, and allow for better siting of project infrastructure.

2.11 Routes to Market for Sale of Electricity

There are several options to consider when exploring potential avenues for selling electricity generated from a hydropower project.

2.11.1 Clean Export Guarantee (CEG)

The Clean Export Guarantee (CEG) tariff provides an opportunity for micro- and small-scale generators in Ireland to receive payment from their electricity supplier for all excess renewable electricity they export to the grid. This remuneration is intended to reflect the wholesale market value of the electricity.

Further information can be found on the CRU website: https://www.cru.ie/consumer-information/microgeneration/

2.11.2 Small-Scale Renewable Electricity Support Scheme (SRESS)

The Small-Scale Renewable Electricity Scheme (SRESS) is a non-auction renewable electricity initiative run by the Department of Environment, Climate and Communications. Designed specifically for community, farm, and SME projects with a capacity between 50kW and 6MW, SRESS offers a simpler, non-competitive route to market. It aims to facilitate community participation by providing an easier pathway compared to the competitive RESS auction process, allowing farmers, businesses, and others to maximise their involvement in

the energy transition.

Further information can be found by clicking on the following link: https://www.gov.ie/en/publication/96110-small-scale-generation/

Community projects are also supported through the SEAI Community Enabling Framework. Further details can be found by clicking on the following link: https://www.seai.ie/plan-your-energy-journey/for-your-community/enabling-framework

2.11.3 Renewable Electricity Support Scheme

The Renewable Electricity Support Scheme (RESS) is a government initiative introduced by the Department of Communications, Climate Action and Environment (DCCAE). Its primary goal is to promote the generation of renewable energy, such as hydropower, to help Ireland meet its domestic and European Union carbon reduction targets by the year 2030.

The scheme aims to create a more favourable environment for renewable energy projects and incentivise their development. It operates through a competitive auction system where companies involved in various renewable industries, such as hydropower, can participate.

The RESS Scheme provides solid financial stability to a renewable project, allowing for more solid private investment by guaranteeing a financial return on investment while simultaneously working to achieve better value for Irish electricity consumers.

Further information on the RESS process, including the latest auctions and up-to-date information, can be found by clicking on the link below.

https://www.gov.ie/en/publication/36d8d2-renewable-electricity-support-scheme/

2.11.4 Corporate Power Purchase Agreements (CPPA)

Another potential market route is through a Corporate Power Purchase Agreement (CPPA). This is an arrangement where a corporate entity, such as a company, procures renewable electricity directly from a generator through a contractual agreement. It serves as an alternative for projects excluded from ORESS, unsuccessful in ORESS, or where the ORESS terms and conditions are not commercially viable. Further information can be found using the link below.

https://www.gov.ie/en/publication/a0d2e-renewable-electricity-corporate-power-purchase-agreements-roadmap/

2.11.5 Merchant Market

The 'merchant' market or open market pricing is another option for the sale of electricity generated. However, the relatively lower price, volatility and associated risk are not a desirable source of income for early-stage renewable projects seeking financing. Ultimately, after government support or CPPA expires, most projects will likely end up operating in the merchant market.

2.12 Project Financing

Financing will need to be secured to develop a hydropower energy project. Financing may be secured in stages: to fund the early stages of concept development, followed by the planning and assessment stages, and the construction stage. There are various ways a renewable energy project can be funded, such as equity funding, grants, bank loans, or a combination. Typically, loans are required to be repaid prior to the end of the RESS fixed price, as this provides certainty for the lender, which helps to reduce the cost of borrowing through the reduced risk on investment. The European Union offers several funding mechanisms for renewable energy projects, including the Renewable Energy Financing Mechanism (RENEWFM), Horizon Europe, the Connecting Europe Facility (CEF), the Modernisation Fund, and the InvestEU Programme. These

programs offer various forms of financial support, including grants, loans, and guarantees, to promote clean energy and help achieve renewable energy targets across member states.

Further information can be found by clicking on the following link:
https://cinea.ec.europa.eu/programmes/renewable-energy-financing-mechanism_en

2.13 Enabling Tasks

After a potential project and site pass feasibility screening, enabling tasks must be undertaken to transition toward the planning and pre-construction phases. These tasks include:

- Land lease options/Purchasing;
- Options to access the site;
- Community engagement; and
- On-site sunlight monitoring.

Some of these may take place in conjunction with the planning phase.

It is important to consider the need for community engagement early in the process. New renewable energy developments, especially in proximity to residential dwellings, frequently encounter concerns from residents for a number of reasons, including concerns about the impact on visual amenity, conservation, glint and glare, etc. There may be valid concerns from residents that can be addressed early in the process, which can help avoid negative community interaction later on and foster community buy-in, including the community in the process before any statutory requirements are met. This early engagement has been shown to improve the acceptance of renewable energy developments in the surrounding area. Identifying key public stakeholders and community leaders is an important task to undertake as early as practicable.

2.14 Design Stage

When designing your project, it is necessary to take into account any relevant guidance documents pertaining to hydropower development in Ireland. In order to inform the design process, it may be necessary to conduct specific surveys such as geotechnical surveys, hydrogeological surveys and ecological surveys. Information gathered at this stage is vital to the design process and can significantly influence the siting of a hydropower station, as well as the design of the access road for construction or improvement works.

The project requirements will determine grid connection requirements, which, in consultation with the grid operator, may determine specific structural and design requirements. Grid connection requirements must be considered at an early stage to ensure your planning application encompasses all elements of your project. Design, therefore, occurs throughout the following phases.

2.15 Policy and Legislation

A crucial aspect of any renewable energy project is to understand the relevant EU, national, regional, and local planning policies and legislation that underpin a project's development. Some of the key policy and legislation documents that will need to be considered are set out below.

European Legislation and Policy:

- 2030 EU Climate and Energy Framework
- European Green Deal
- Renewable Energy Directive 2018/2001/EU
- EU Fit for 55 Package

National Legislation:

- Planning and Development Act 2000, as amended
- National Planning and Development Policy
- National Planning Framework (NPF)
- Climate Action Plans

Relevant Regional and Local Planning and Development Policies and Strategies:

- Regional Spatial and Economic Strategies
- County Development Plans

It is crucial to clearly demonstrate how a proposed project aligns with the relevant policies. Your planning and environmental advisors can provide guidance on all applicable legislation and policies relevant to your project.

2.16 Community Engagement

It is essential to consider the need for quality community engagement from the outset of the planning process. Common concerns raised generally relate to noise and visual impacts, including other environmental impacts. It is recommended that these concerns be addressed early in the process, as this can help to avoid negative community interaction at a later stage, as well as help to foster community acceptance. Identifying key public stakeholders and community leaders is an important task to undertake as early as practicable. This early engagement has been shown to improve the acceptance of renewable energy projects.

2.17 Planning and Environmental Assessments

When applying for planning permission for your project, the Planning Authority or your technical advisors should be able to provide guidance on the assessments that may be required to support your planning application. This will be dependent on the nature, extent, and location of your project.

Larger projects will likely require a full Environmental Impact Assessment Report (EIAR). This will be discussed further in the following sections. Smaller projects that do not meet EIA threshold criteria may still require other assessments or reports to be submitted to support your planning application, such as:

- Environmental Surveys
- Screening for EIA and/or Environmental Statement/Report and/or EIAR
- Appropriate Assessment (AA) Screening Report and/or a Natura Impact Statement (NIS) Report
- Water Framework Directive (WFD) Assessment
- Ecological Impact Assessment (EcIA)
- Archaeological & Built Heritage Impact Assessment
- Landscape and Visual Impact Assessment (LVIA)
- Flood Risk Assessment (FRA)
- Traffic Impact Assessment (TIA)
- Assessment of the Impact of the Maritime Usage Report
- Annex IV Risk Assessment

Consultation with the Planning Authority and project-specific scoping with your technical advisors is highly recommended.

When looking at the requirement for planning permission (see Section 2.18), it is important to carefully consider the location and siting of hydropower works. Installations in proximity to priority habitats or European-designated sites, such as Special Protection Areas for birds or Special Areas of Conservation, may not be suitable. Old barns, mature broadleaf forests and hedgerows, for example, may contain protected or priority species. If in doubt, it is best to seek ecological advice when siting a hydropower energy project.

2.17.1 Environmental Baseline Surveys

Large-scale projects such as hydropower energy developments will require several assessments to be carried out to support their statutory permit applications. The requirement for these assessments can be discussed with your technical advisors. Environmental baseline surveys will be required as part of the assessment process. These surveys provide vital information for the development of a project. In some cases, 2 years of survey data may be required. Environmental assessments are typically conducted in conjunction with the design process. The following sections provide a summary of the environmental assessments that are likely to be required.

2.17.2 Environmental Impact Assessment (EIA) Report

2.17.2.1 Overview

In accordance with Directive 2011/92/EU, as amended by Directive 2014/52/EU, projects that are likely to have significant effects on the environment by virtue of their nature, size, or location must be subject to an EIA. EIA stands for the process of carrying out an Environmental Impact Assessment. The Environmental Impact Assessment Report (EIAR) is the principal document on which the EIA process is based, which is prepared by the developer.

The EIAR must identify, describe, and assess likely significant effects, both direct and indirect, of the project on the environment. It is important to note that the EIA is an iterative process and should be integrated into the design process. Through considered design and site selection, it may be possible to avoid, prevent, or reduce adverse environmental impacts, which is a key requirement of the EIA process.

For a planning application, it is the responsibility of the relevant Planning Authority to carry out an assessment of the information provided in the EIAR and come to a reasoned conclusion on the project's impacts on the environment.

For further information in relation to EIAR, please refer to the following documents:

Guidelines on the information to be contained in Environmental Impact Assessment Reports May 2022

Guidelines for Planning Authorities and An Bord Pleanála on carrying out Environmental Impact Assessment (August 2018)

2.17.2.2 EIA Screening - Mandatory EIA Thresholds

EIA Screening is the process of deciding whether a development requires an EIA to be carried out. The EIA Screening exercise first assesses the development to ascertain if it is subject to Mandatory EIA, using classifications defined in the EIA Directive (projects listed in Annex I of the EIA Directive are subject to an EIA). If the project is not listed in Annex I, and no mandatory EIA is required, the EIA Screening process progresses to consider projects listed under Annex II of the EIA Directive. Projects listed in Annex II of the EIA Directive are subject to an EIA if (i) they exceed certain thresholds (set out in Annex II and by each Member State); or (ii) if they do not meet or exceed the threshold, but where the project is deemed likely to have significant environmental effects, with regards to the project's scale, nature, location, and context.

2.17.2.3 EIA Screening - Sub-threshold EIA

Proposed hydropower energy developments below the mandatory thresholds but which may be likely to have significant effects on the environment may also require an EIA and should therefore be screened for an

EIA to determine whether the project is likely to have a significant effect on the environment. These projects may be referred to as **"sub-threshold"** projects. In the case of sub-threshold development, it is advisable that Developers consult with the Planning Authority regarding the possible need for an EIAR.

Useful guidance can be found in the document below: Environmental Impact Assessment (EIA) Guidance for Consent Authorities regarding Sub-threshold Development Aug 2003.

2.17.2.4 EIA Scoping

Scoping is an important stage that takes place early in the EIA process. It provides an opportunity for both Developers and the Competent Authority to determine those key environmental impacts and issues of concern that are likely to be of the utmost importance to the Project proposal's decision-making and eliminates those that are less of a concern. In other words, Scoping defines the EIA Report's content and ensures that the environmental assessment is focused on the Project's most significant effects on the factors listed in Article 3 of the Directive, and that time and money are not spent on unnecessary examinations. It also reduces the likelihood that competent authorities will need to request additional information from Developers after the Environmental Report has been prepared and submitted.

The EIA scoping exercise should assist in identifying relevant data gaps which need to be filled by further field surveys. Surveys over a prolonged period (e.g. in some cases for periods of up to 2-3 years) may be required to inform some of the relevant baseline elements. This has implications for the timeframe within which the application for consent can be submitted.

In the event that an EIA is required, the Developer can request a written scoping opinion from the Planning Authority on the information to be contained in the EIAR. This is an opportunity for the Planning Authority, the Developer and the Developer's technical advisers to discuss the scope and level of detail of the environmental information to be submitted in the EIAR.

2.17.2.5 Public Consultation

Public consultation is a key consideration for development projects, and it is important that stakeholders are brought into the process at an early stage. Public concerns raised through the consultation process may be brought into the EIA scoping and be addressed in the EIAR, as applicable. Public Information events may be held, where the project may present the plans and invite feedback from the local community. It will be necessary to set up a system to record such feedback or a website where key project documents may be viewed, such as Scoping Reports, the EIAR, maps and application documents. As part of the EIA process, it is necessary to place public notices informing the public when an application and EIAR have been submitted to the competent authorities.

2.17.2.6 Consultation with Prescribed Bodies

Prior to the submission of a planning application for a SID scale hydropower facility, there is a requirement for the Developer to notify a specified list of Prescribed Bodies about the proposal. Upon receipt of an application that is accompanied by an EIAR, there is a requirement for competent authorities to consult with authorities likely to be concerned by the project by reason of their specific environmental responsibilities or local and regional competences and to give them an opportunity to make submissions/observations on the information supplied by the developer and on the request for development consent.

2.17.2.7 EIA Assessment and Determination

Once the EIAR has been completed and the application documentation prepared, the application is submitted to the Competent Authority for assessment and determination. The applicant and the Competent Authority must comply with relevant statutory provisions that may apply in relation to documentation, public notices, consultation, and processing of the application. If, during the assessment, the Competent Authority determines that the information presented in an EIAR is not sufficient for it to make a determination, then the Developer may be asked to provide further information.

2.17.3 Appropriate Assessment (AA) under the Habitats and Birds Directives

The Habitats Directive (92/43/EEC) and the Birds Directive (2009/147/EC) seek to maintain, and where necessary, restore the favourable conservation status of designated natural habitats and species throughout member states. Designated Special Areas of Conservation (SAC), Special Protection Areas (SPA), candidate Special Areas of Conservation (SAC) and proposed Special Protection Areas (pSPA) are collectively known as European Sites. The most important ecological sites are designated as European Sites under provisions of Irish legislation transposing these Directives. Together, these sites form part of the Natura 2000 network of comparable sites throughout Ireland and other European Member States.

Article 6(3) of the Habitats Directive requires an AA of plans and projects that are likely to have significant effects on any European Site. A Competent Authority cannot agree to the plan or project until it has ascertained that it will not adversely affect the integrity of the site concerned.

2.17.3.1 Screening for Appropriate Assessment (Stage 1)

Under the Habitats Directive, it is the Competent Authority's responsibility to complete the Screening for AA and issue its determination whether an AA is required. To support this, the applicant must submit a Screening for AA Report. The report should include all supporting information necessary for the Competent Authority to reach a 'Screening for AA Determination', including the applicant's own conclusion/determination in relation to screening.

The Report should be completed to meet the requirements of the Habitats Directive, EU and National guidance documents, transposing legislation, and relevant domestic and European case law.

The Competent Authority will publish a Screening for AA Determination, which will either inform the applicant that their application has been 'screened-in' for AA or that it has been 'screened-out' and does not require a (Stage 2) AA to be carried out.

2.17.3.2 Appropriate Assessment (Stage 2)

If likely significant effects cannot be ruled out at the (Stage 1) Screening stage, the Competent Authority is required to carry out a (Stage 2) AA. To inform this process, the Applicant will have to prepare a Natura Impact Statement (NIS) Report. If the Applicant has already determined to their satisfaction that, in all likelihood, a Stage 2 AA will be required and has prepared a NIS Report in anticipation of being requested to do so, they may submit it at the initial application stage.

2.17.3.3 Alternative Solutions (Stage 3)

Stage 3 of the AA process arises wherever consideration must be given to alternative locations and processes that would avoid any impact identified in Stage 2. It is only required wherever any impact arising at Stage 2 cannot be avoided.

2.17.3.4 Imperative Reasons of Overriding Public Interest (Stage 4)

In the event that the AA concludes that adverse impacts upon the integrity of a European Site cannot be ruled out or that the integrity of such a European site will be adversely affected and where it has been demonstrated that there are no alternative solutions, Article 6(4) of the Habitats Directive allows for derogation for 'Imperative Reasons of Overriding Public Interest' (IROPI). There are limitations on the reasons applicable where priority habitats, as defined in the Directive, are affected.

IROPI is complex process where it must be shown that public interest clearly outweighs the long-term conservation interests of the protected site. These have only been sought and granted in very rare instances in Ireland and are only considered as a very last resort. Where it is considered that IROPI applies to an infrastructural project, a statement of the case is prepared by the competent authority and referred to the Minister for his/her consideration. The Minister will consider whether the compensatory measures proposed as part of the development are sufficient to ensure that the overall coherence of the Natura 2000 network is protected, and this may involve consultation with the European Commission. Once the Minister issues a

notice to the competent authority with respect to whether compensatory measures are sufficient or not, the competent authority will then determine the planning application.

2.17.4 Water Framework Directive (WFD) Assessment

Since 2000, the WFD [Directive 2000/60/EC of the European Parliament and of the Council of 23 October 2000 Establishing a Framework for Community Action in the Field of Water Policy] has been the main law for water protection in Europe. It applies to inland, transitional, and coastal waters in addition to groundwaters.

An objective of the WFD is to achieve the protection of aquatic ecology and habitats, drinking resources and bathing waters through river basin management planning and monitoring. This objective is summarised as Good Ecological Status (GES) and Good Ecological Potential (GEP) for artificial or heavily modified water bodies.

An assessment of how the hydropower project may impact relevant water bodies will need to be carried out before the submission of a planning application, and a WFD Assessment report should also accompany the application.

2.17.5 Ecological Impact Assessment (EcIA)

EcIA is *"a process of identifying, quantifying and evaluating potential effects of development-related or other proposed actions on habitats, species and ecosystems"*[5].

An EcIA can help competent authorities understand ecological issues to determine a project for consent. EcIA is not a statutory requirement on its own; however, if conducted under EIA, then it must follow EIA Regulations. EcIA is an evaluation process undertaken to support a range of assessments. An EcIA report (or the ecological chapter of an EIAR) should describe the significant effects of a project so that all interested parties understand the implications of what is proposed.

For further information in relation to EcIA, please refer to the following document: EcIA-Guidelines-v1.3-Sept-2024.pdf

2.17.6 Archaeological & Built Heritage Impact Assessment

An archaeological and built heritage impact assessment ensures that a development respects the area's cultural heritage, as outlined in the Planning and Development Act 2000 (as amended) and the National Monuments Act.

Further details about the assessment process and the several key stages involved are described here: Archaeological and Built Heritage Assessment | SEAI

2.17.7 Landscape and Visual Impact Assessment (LVIA)

LVIA is a tool used to identify and assess the significance of and the effects of change resulting from development on both the landscape as an environmental resource in its own right and on people's views and visual amenity. LVIA may be carried out either formally, as part of an Environmental Impact Assessment (EIA), or informally, as a contribution to the 'appraisal' of development proposals and planning applications. LVIA applies to all projects that may require a formal EIA, as well as to those that can be assessed informally.

Further information can be found here: guidelines-for-landscape-and-visual-impact-assessment-third-edition-2013.pdf

2.17.8 Flood Risk Assessment (FRA)

An FRA is the process of identifying, analysing, and evaluating the potential risks of flooding in an area. It

[5] *EcIA-Guidelines-v1.3-Sept-2024.pdf*

helps communities understand where floods may occur, how severe the floods could be, and what impact they can have on people, property, and the environment.

Planning authorities will introduce flood risk assessment as an integral and leading element of their development planning functions under the Planning Code, at the earliest practicable opportunity, in line with the requirements of the Guidelines, which can be found at the link below. Planning authorities will assess planning applications for development in accordance with the provisions of these Guidelines following the guidance of their own or any Office of Public Work (OPW) Strategic Flood Risk Assessment and the application of the sequential approach and, if necessary, the Justification Test required by these Guidelines.

Further information can be found here: www.gov.ie/The Planning System and Flood Risk Management - Guidelines for Planning Authorities

2.17.9 Traffic Impact Assessment

A TIA is a comprehensive review of all the potential transport impacts of a proposed development or re-development, with an agreed plan to mitigate any adverse consequences. All new developments will generate trips on the existing transport network, either by car, commercial vehicle, cycling, walking or public transport. In cases where a proposed development is of a size or type that would generate significant additional trips on adjoining transport infrastructure, this additional demand may necessitate changes to the road layout or public transport service.

It is essential that the developer or promoter should provide a full and detailed assessment of how the trips to and from the development might affect the transport network. The assessment should be an impartial description of the impacts of the proposed development and should outline both its positive and negative aspects.

Further information can be found here: TII - Traffic and Transport Assessment Guidelines

2.17.10 Assessment of the Impacts of the Maritime Usage Licence

MARA was established on 17th July 2023 and is responsible for consenting and enforcement functions and has a key role to play in the new streamlined consenting system in the maritime area. They are responsible for assessing applications for Maritime Area Consents (MACs) which will be required before developers in the maritime area can make a planning application. Maritime usages that require a MAC include:

- Offshore Renewable Energy Projects
- Telecommunication cables that land in the state
- Harbour/Port Development
- Coastal Protection works
- Waste Water pipes
- Bridges
- Capital dredging (dredging to a depth not previously dredged)
- Permanent slipways/jetties
- Flood Defence Schemes
- Piers
- Marina developments
- Wastewater Treatment and Disposal
- Discharge/Outfall pipe

MARA are also responsible for granting licences (Maritime Usage Licences (MULs) for certain activities in the maritime area, such as:

- Navigational and Maintenance Dredging
- Marine Environmental surveys for the purposes of scientific discovery and site investigations
- Installation or placement of navigational markers or aids to navigation not undertaken or authorised by the Commissioners of Irish Lights.
- Installation of non-permanent platforms or pontoons
- Depositing of any substance or object on or in the sea or seabed
- Removal of any substance or object from the sea or seabed
- Use of explosives
- Maintenance of any cable, pipeline, oil, gas or carbon storage facility/structure not provided for under any other statutory approval
- The harvesting of seaweed
- Any other activity that the Minister of Housing, Local Government and Heritage (MHLGH) may determine by regulation

It is important to note that unless the hydropower facility is below the high watermark which therefore is within MARAs jurisdiction as being within the maritime area, a MAC or a MUL do not apply here.

Further guidance can be found here, which includes MACs and MULs: General-Guidance-for-completing-an-application-for-a-MAC.pdf

The application form for a MUL is available at maritimeregulator.ie/apply. An application fee of €2,000 applies. If your application screens out for Appropriate Assessment, you will receive a refund of €1,000.

Information on applying for a MAC can be found here: Applying for a Maritime Area Consent - MARA - The Maritime Regulator

2.17.11 Annex IV Risk Assessment

A number of plant and animal species are legally protected in Ireland. Some of these species are included in a system of Strict Protection pursuant to the requirements of Articles 12, 13 and 16 of the Habitats Directive (92/43/EEC) and are sometimes referred to as 'Annex IV species'. Please see The table below lists Annex IV species in Ireland. An Annex IV risk assessment is undertaken to assess whether a proposed development or project is in accordance with the system of strict protection established for Annex IV species, under the European Union Habitats Directive (92/43/EEC), whether a derogation licence is required under this Directive, and if so, whether the criteria are met to enable the granting of such a licence.

Table 1: Annex IV Species

Annex IV Species	
Animals	**Plants**
All bat species	Killarney Fern
Otter	Slender Naiad
Natterjack Toad	Marsh Saxifrage
Kerry Slug	
Dolphins and Porpoises	

Annex IV Species
Whales
Marine Turtles

2.18 Planning Phase

Hydropower development requires planning permission from the local authority or An Bord Pleanála and a licence approval from the Environmental Protection Agency (EPA). In the case where the applicant does not own the lands where the development is proposed, a letter of consent from the landowner will be required.

Smaller micro-hydroelectric power projects involving the installation of 300 MW or less will require planning permission from the Local Authority. Projects involving the installation of over 300 MW will require permission from An Bord Pleanála.

As well as planning permission from the appropriate Planning Authority, licences and approval from the EPA are required. Mitigating measures such as a mesh screens and a fish ladder may need to be installed. A mesh screen simply stops larger items such as logs, plastic containers, bags, and larger fish from entering the intake for the turbine. It is the duty of an operator of a hydroelectric turbine to provide a grating or other efficient means to prevent young fish, such as salmon smolts, from entering turbines. Grating should be provided both downstream and upstream of the outfall and intake areas respectively.

A fish ladder is a structure on or around artificial barriers or dams to facilitate fishes' natural migration to or from spawning grounds. Most fish ladders enable fish to pass around dams by swimming and leaping up a series of relatively low steps into the waters above the dam[6]. Planning applications for hydropower projects should refer to the Eastern Regional Fisheries Board Requirements for the Protection of Fisheries Habitat during Construction and Development Works at River Sites, which gives guidance and important design information for hydroelectric schemes.

The Guidelines on the Construction & Operation of Small-Scale Hydro-Electric Schemes and Fisheries Consultation document provides further information on planning phases as well as environmental investigation and mitigation for micro-electric projects[7].

It is important to note that the new Planning and Development Act 2024 was signed into law in October 2024. This brings reforms to existing planning arrangements and associated planning regulations. However, it is not yet in effect. This is expected to take at least 18 months, and this will be supplemented and supported by updated planning regulations, which will take some time to be adopted.

2.18.1 The Planning Process

The process of applying for planning permission is outlined briefly below. Further information in relation to the planning process for hydropower projects can be found on the SEAI website. When applying for planning for your project, particular regard will need to be given to existing local and national policy, plans and guidelines concerning hydropower development in Ireland. Further information on Planning considerations can be found in the SEAI document *Community Toolkit - Planning Process*.

2.18.1.1 Pre-Application Consultation meetings

In advance of making your planning application, you will need to have a pre-application consultation meeting with the Planning Authority. This will give you the opportunity to introduce your project and put forward key information and details about your project, and seek the Planning Authority's guidance or opinions on certain matters. Indeed, there may be a need for a series of meetings, depending on the

[6] *https://www.teagasc.ie/rural-economy/rural-development/energy/technologies/hydropower/*

[7] *https://www.fisheriesireland.ie/sites/default/files/migrated/docman/hydro.pdf*

complexity of your project.

These meetings will allow you to steer your project and ensure you include sufficient details in your planning application to assist the Planning Authority in assessing your application.

Meetings may include;

- Overall concept and design, consultation to date, etc.
- EIAR Screening, EIAR Methodology and Scoping, if applicable
- Any other issue where clarity or guidance is required
- The required content of the planning pack
- The appropriate scale for various drawings

2.18.1.2 Planning Application

In order to make a valid planning application, you will likely require the services of a professional team of experts to guide you, particularly with the more complex projects. The planning application pack that is submitted as part of the application must contain the following documents at a minimum:

- Completed Planning Application Form and all associated appendices
- The Planning Application Fee
- A copy of the Site Notice and the Newspaper Notice
- All required drawings, plans, particulars and information. This may include survey reports, technical reports, as well as any environmental reports and assessments as advised by your professional advisors and the Planning Authority.

2.18.1.3 Public Consultation

As part of the assessment process, all applications and supporting documentation will be made available for public scrutiny both in soft copy and in hard copy. The public will have a specified period of time from the date of publication of the planning application notice to make a submission or observation in relation to the development and the documentation provided by the applicant to the Planning Authority.

2.18.1.4 Request for Additional Information

Where the Planning Authority considers the application or the EIAR to be inadequate in identifying or describing significant effects on the environment arising from the proposed development, it must require the applicant to submit further information within a specified period to ensure the completeness and quality of the EIAR and to facilitate the reaching of a reasoned conclusion of the significant effects on the environment of the proposed development. If deemed necessary by the Planning Authority, the applicant can also be required to provide a Clarification of Additional/Further Information.

2.18.1.5 Decision of the Planning Authority

The Planning Authority may grant or refuse a planning application, with or without conditions. Conditions may include agreeing on certain details post-consent, such as Construction Environmental Management Plans (CEMPs), method statements for particular works, noise limits, or restrictions on the timeframe permissible for construction works, for example.

2.18.1.6 Oral Hearing

Wherever the consideration of a planning application concerns An Bord Pleanála, the Board can decide to hold an oral hearing with or without someone requesting it. The Board normally decides to hold an oral hearing wherever it believes that doing so would be helpful to understand a particularly complex case. Oral hearings can also be held where the Board considers there to be significant national, regional or local issues

involved.

An oral hearing is a public meeting to allow relevant issues in a case to be discussed and examined in an open forum. Anyone can attend, but only participants who are taking part in the case can be involved in the discussion. Oral hearings are sometimes held to help a Planning Inspector gather more information on a planning case from relevant participants.

2.18.1.7 Judicial Review

A judicial review is a mechanism whereby a person can challenge decisions made by public bodies in the exercise of their duties. A judicial review is made through the High Court. A judicial review is not concerned with the merits of a particular decision but rather the lawfulness of how a decision was made. The aim of a judicial review is to ensure that public functions are carried out fairly.

In practical terms, what this can mean for a project promoter is that it may be used by the applicant to challenge a decision, such as the refusal of planning consent, if there were sufficient grounds to do so. A judicial review can also be taken against the grant of permission by a third party. Wherever a judicial review arises, it may lead to delays and project uncertainty until the judicial review process has concluded. Judicial review risks will need to be considered in any consent planning for a project.

Further information on the judicial review process can be found at:
https://www.citizensinformation.ie/en/government-in-ireland/how-government-works/standards-and-accountability/judicial-review-public-decisions/

2.19 Grid Connection

Prior to construction, a Grid Connection Offer must be obtained, which will allow for a hydropower installation to be connected to the national grid to supply energy. It is essential to note that to secure a grid connection offer, a project must obtain planning permission in advance of submitting a Grid Connection Application.

Further information on grid connections can be found at the links below:

- EirGrid Connection Process
- EirGrid Grid Connection Application
- ESB Networks Connection Process
- ESB Networks Generator Connections

Depending on the scale of your project, one or more of the grid connections/electrical licenses may be required. Further information is provided in the following sections.

2.19.1 EirGrid Grid Connection

Projects with a total export capacity of under 40 MW at a single location should initially apply to ESB Networks for a Distribution Connection. Projects with over 40 MW total export capacity at a single location should initially apply to EirGrid for a Transmission Connection.

When submitting a new application to EirGrid as Transmission System Operator (TSO), the application must be accompanied by all supporting documentation as requested, including two signed copies of the EirGrid standard confidentiality agreement and the first instalment of €7,000 (inclusive of VAT) of the application fee.

The total application fee is dependent on the size of the plant (taking into account the MEC[8] and MIC[9] values) and whether shallow connections work is involved in dealing with the required capacity.

For application forms for an EirGrid Enduring Connection Policy (ECP) and details of the application process, consult the EirGrid website, and any queries can be directed to OPMO@eirgrid.com.

2.19.2 Micro-Generation Grid Connection

Micro-Generation means the generation of electricity by equipment installed in homes or small businesses. Where this electricity originates from a renewable source, such as solar (i.e., photovoltaic "PV" panels), from small wind turbines, from hydro or from micro-renewable combined heat and power (CHP), then the electricity is regarded as renewable.

The term "Micro-Generation" is sometimes used to refer to generation capacity of up to 1,000 kW (i.e., 1 MW), though this broader range can include mini-scale and small-scale as well as micro-scale generation.

Micro-Generation installations are defined as follows:

- Only ***one customer*** is involved;
- Only ***one installation*** is involved; and
- Where multiple customers on the same housing scheme are involved, in planned [green field] multiple installations such as new housing schemes, where it is planned to have Micro-Generation or installed where there is a penetration level expected to reach 40% of the capacity in kVA of the existing MV/LV substation that supplies the estate or scheme.

To apply to install and connect a micro-generator, you must complete Form NC6 Microgeneration Notification. Submission to ESB Networks can be made by post (address on form) or email: networkservicesbureau@esb.ie. Further information can be found on ESB Networks: Connect a Micro-Generator.

2.19.3 Mini-Generation Grid Connection

Mini-Generation grid connections are for small-scale electricity generation primarily for self-consumption and are defined as a source of inverter-connected electrical energy and all associated equipment, in the following ranges:

- Greater than 25 A up to and including 72 A 1 at low voltage [230 V], when the DSO network connection is single-phase; and
- Greater than 16 A up to and including 72 A at low voltage [230 V/400 V], when the DSO network connection is three-phase.

Where multiple generating sources [of the same or varied technologies] are on the same site and share access to the same Distribution System Operator (DSO) network connection point, the aggregate rating shall not exceed:

- 72 A single-phase at low voltage, when the DSO network connection is single-phase; and
- 72 A per phase at low voltage, when the DSO network connection is three-phase.

To apply to install and connect a mini-generator, you must complete Form NC7 Minigeneration Notification.

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[8] The Maximum Export Capacity (MEC) is the maximum capacity that you can export to the Electricity Distribution System. MIC and MEC are measured in kilo Volt Amperes (kVA). 1kVA is roughly equivalent to 1 kW in most circumstances.

[9] The Maximum Import Capacity (MIC) is the upper limit on the total electrical demand you can place on the network system.

Submission to ESB Networks can be made by post (address on form) or email: dsominigeneration@esb.ie Further information can be found on ESB Networks: Connecting Mini Generation.

2.19.4 Small-Scale Grid Connection

Small-scale generation, similar to mini- and micro-generation, is primarily used for self-consumption purposes. However, it also includes differing generation types: Synchronous and Inverter-connected generation. (The maximum single-phase connection is 72 amps (≈17kVA)) The Installed Generator Capacity must be less than or equal to the MIC, in the following range:

- Inverter connected Installed Capacity greater than (72amps) ≈50kVA up to 200kVA three-phase
- Synchronous Installed Capacity greater than 6kVA up to 200kVA

To apply to install a Small Scale generator, you must complete either Form NC8 Small Scale Generation Application for inverter-connected generation, or Form NC5 Embedded Generation Facilities for synchronous-connected generation and submit to ESB Networks by post (address on form) or email: dsosmallscalegeneration@esb.ie.

Further information can be found on ESB Networks: Connecting Small Scale Generation.

2.19.5 ECP Category A Grid

The Enduring Connection Policy (ECP) process for grid connection applications is the current pathway for generators, storage, and other system services technology projects to connect to the electricity system.

ECP Category A is for generation, storage, and other system services technology projects (MEC[10] >0.5 MW). Applications for this grid connection offer will occur in batches, with application windows occurring annually.

An application fee applies for projects with MEC > 500 kW (0.5 MW), which is €2,000. Successful applicants will be prioritised by the largest renewable energy generation (first 25), then by planning permission grant date. Each batch application may set its own generation priorities.

A New Generator Connection Application (NC5) should be used where an applicant has identified their specific generator manufacturer detail and would like their technical study processed using the specified data provided by the applicant. NC5A is a shortened version of this form and may be used where the specific generator manufacturer detail is unknown at the time of application. Therefore, the technical study is completed using assumed data, and the applicant is required to provide their specific data a year in advance of energisation. Fully completed application forms can be sent via email with all relevant documentation to DSOGenerators@esb.ie.

2.19.6 ECP Category B

Enduring Connection Policy (ECP) Category B is open to the following projects:

- Small projects i.e., MEC greater than 6kW/11kW and less than or equal to 500kW.
- DS3[11] system services trial projects - up to 500kW; and

[10] The Maximum Export Capacity (MEC) is the maximum capacity that you can export to the Electricity Distribution System. MIC and MEC are measured in kilo Volt Amperes (kVA). 1kVA is roughly equivalent to 1 kW in most circumstances.

11 Delivering a Secure, Sustainable (electricity) System. The DS3 programme aims to ensure the secure and safe operation of the electricity system with increasing amounts of variable non-synchronous generation, such as wind and solar. To achieve this aim, the TSO needs to obtain specific DS3 system services from generators and market participants.

- Auto producers[12].

Applicants who have an existing application which has been received complete (along with the appropriate application fee) by the Systems Operators will be processed throughout the calendar year. These applicants will be prioritised based on when the existing application was received in its entirety. Where any relevant details pertaining to their project have changed, the existing applicants must submit a new application form under ECP-2.1 for the same site location (grid coordinates) and technology type. The applicants may apply to reduce their MEC.

A New Generator Connection Application (NC5) should be used where an applicant has identified their specific generator manufacturer detail and would like their technical study processed using the specified data provided by the applicant.

NC5A is a shortened version of this form and may be used where the specific generator manufacturer detail is unknown at the time of application. Therefore, the technical study is completed using assumed data, and the applicant is required to provide their specific data a year in advance of energisation.

Fully completed application forms can be sent via email with all relevant documentation to: DSOGenerators@esb.ie.

2.19.7 ECP Category C

Enduring Connection Policy (ECP) Category C is open to the following projects:

- Community-Led Projects where MEC greater than 0.5 MW and less than or equal to 5 MW; and
- Community-Led Projects meeting the 100% community-owned status, as outlined in the ECP-2 Clarification Note (CRU/21/069).

Category C (Community-led) applicants must be 100% community-owned and can apply on an ongoing basis throughout the calendar year. Once the application fee deposit has been paid and the applications have been accepted, the Distribution System Operator (DSO) (ESB Networks) will conduct a detailed study and confirm the connection method and connection cost. This will be issued as a 'connection assessment'.

Community-led renewable energy projects will also not need planning permission prior to applying for a grid connection. Planning permission will, however, be required before a grid connection offer is issued.

A New Generator Connection Application (NC5) should be used where an applicant has identified their specific generator manufacturer detail and would like their technical study processed using the specified data provided by the applicant.

NC5A is a shortened version of this form and may be used where the specific generator manufacturer detail is unknown at the time of application. Therefore, the technical study is completed using assumed data, and the applicant is required to provide their specific data a year in advance of energisation.

Community-led projects must include a Declaration Form with their application.

Fully completed application forms can be sent via email with all relevant documentation to DSOGenerators@esb.ie.

[12] A person who has entered into a Connection Agreement with the DSO or TSO and generates and consumes electricity in a Single Premises, or on whose behalf another person generates electricity in the Single Premises, essentially for the first person's own consumption in that Single Premises.

2.19.8 Licence to Supply

A Licence to Supply is a mandatory licence for anyone wishing to supply electricity to final customers (a final customer is defined as a customer purchasing electricity for their own use[13]), it is applied for through the Commission for Regulation of Utilities (CRU), (Section 14(1)(b), (c) or (d) of Electricity Regulation Act 1999, as amended).

The CRU grants, revokes, and enforces these licences. The current fee for the licence to supply is €254 and can be applied for through the CRU application form. An Electricity Supply Licence will be valid for 15 years.

For further information and details on supporting documentation, please refer to the CRU Electricity Supply website: https://www.cru.ie/regulations-policy/licences/electricity-supply/

2.19.9 Licence to Generate

For generators with an installed capacity of ≤1 MW, no authorisation is required, and construction is authorised under S.I. No. 460 (2022).[14]

For generators with an installed capacity between 1 MW and 10 MW, a Notification of Intention to Construct or Reconstruct, and/or to Generate Electricity, from a Generation Station not exceeding 10 MW is required. This is the same form as the Authorisation to Construct.

For generators with a greater installed capacity, a Licence to Generate Application Form is required. There are separate application forms for capacity <40 MW and >40 MW.

Before applying for a licence, all new applicants or those with novel or complex applications should schedule a pre-submission meeting with the CRU. To contact the CRU for a pre-submission meeting, use licensing@cru.ie.

Importantly, there are dual application forms for <40 MW and >40 MW applications where an Authorisation to Construct and a Licence to Generate can be applied for together.

2.19.10 Wayleave Consent: Section 48 to Lay Electric Cables

Wayleave Consent: Section 48 refers to the power to lay electric cables (Section 48 of Electricity Regulation Act 1999, as amended) is granted to: lay electric cables across or under any street, road, railway or tramway, and the right to break up any street, road, railway, or tramway for that purpose. This licence is separate from other agreements, such as the Road Opening Licence.

The Section 48 wayleave consent is applied for through the CRU, see Section 48 Application Form. At present, there is no application fee. It should be noted that letters of consent from the landowners, in addition to a copy of their connection offer, are required as part of the application. If the land that is affected is a tramway or railway, consent will also be required from CIÉ. A photocopy of the route map is also required to be submitted along with the application.

Applications should be submitted at least two months prior to when the applicant intends to use the consent. The CRU will acknowledge only fully completed applications within 10 working days of receiving them. Once the CRU acknowledge an initial application, the CRU will review it, and a contact will be made if the CRU requires clarification or additional information. For further information or queries related to Section 48, please contact the CRU at: consentapplication@cru.ie.

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[13] *Article 2(3) of the Directive (EU) 2019/944 of the European Parliament and of the Council of 5 June 2019 on common rules for the internal market in electricity (recast)*

[14] *S.I. No. 460/2022 – Electricity Regulation Act 1999 (Section 14 (1A)) Order 2022*

Recommended Reading on Section 48 Applications is:

- Guidance Note on Section 48 and Section 49 Applications

2.19.11 Wayleave Consent: Section 49 to Lay Electric Cables

Wayleave Consent: Section 49 refers to the power to lay electric lines (Section 49 of the Electricity Regulation Act 1999, as amended), which is granted to lay lines across or under any land not being a street, road, railway, or tramway.

The Section 48 wayleave consent is applied for through the Commission for Regulation of Utilities (CRU), see section 49 application form. At present, there is no application fee.

Should the electric lines be required to go through private land, a yearly agreement has to be reached between the asset owner and the landowner for the duration of the project. It should be noted that letters of consent from the landowners, in addition to a copy of their connection offer, are required as part of the application. A photocopy of the route map is also required to be submitted along with the application.

Applications should be submitted at least two months prior to when the applicant intends to use the consent. The CRU will acknowledge only fully completed applications within 10 working days of receiving them. Once the CRU acknowledge an initial application, the CRU will review it, and a contact will be made if the CRU requires clarification or additional information.

For further information or queries related to Section 49, please contact the CRU at: consentapplication@cru.ie.

2.19.12 Notification of Intention to Construct or Reconstruct, and/or to Generate Electricity from a Generation Station not exceeding 10 MW.

Under the Electricity Regulation Act 1999 (Section14(1A)) Order 2022, it is necessary to apply to the Commission for Regulation of Utilities (CRU) prior to commencing works to construct or reconstruct and or to generate electricity from a generation station not exceeding 10 MW.

Before applying for a licence, all new applicants or applicants with novel or complex applications should apply for a pre-submission meeting with the CRU. To contact the CRU for a pre-submission meeting use: licensing@cru.ie.

Prior to the meeting, it would be beneficial to the applicant to review the application: Generators not exceeding 10 MW application form.

2.19.13 Authorisation to Construct or Reconstruct a Generating Station

This authorisation allows a person to construct or reconstruct a generating station, which is applied for through the Commission for Regulation of Utilities (CRU) (Section 16 of the Electricity Regulation Act 1999, as amended). It is an offence to construct or reconstruct a generating station for the purpose of supply to final customers without the required authorisation. An exception to this is where the proposed generation station has a capacity of less than or equal to 1 MW.

There are two separate applications for authorisation to construct or reconstruct generating stations that are less than 40 MW, or exceed 40 MW. If you are applying for both a Licence and Authorisation at the same time, use a Dual application form (less than 40 MW or exceeds 40 MW).

Before applying for a licence, all new applicants or applicants with novel or complex applications should apply for a pre-submission meeting with the CRU. To contact the CRU for a pre-submission meeting use: licensing@cru.ie.

For further information and details on supporting documentation and the most up-to-date fee requirements, please refer to the CRU guidance notes on the Authorisation to Construct.

2.19.14 Transmission Use of System (TUoS) Agreement

This is a mandatory agreement that is required to obtain access to Transmission Use of System (TUoS) and transport electricity to and/or from the generation plant through the transmission system. This is regulated under Section 14(1)(b), (c), (d) or (h) of the Electricity Regulation Act 1999, and Section 34 of the Electricity Regulation Act 1999, as amended.

Suppliers and generators seeking to use the Transmission System will be required, prior to using the Transmission System, to enter into a Transmission Use of System Agreement (TUoS) with EirGrid Group. This agreement must be in place before a supplier or generator can participate in the Single Electricity Market (SEM)

2.19.15 Distribution Use of System (DUoS) Agreement

To obtain access to a distribution system and transport electricity to and/or from the generation plant through the distribution system an application must be made to ESB networks (Section 14(1)(b), (c), (d) or (h) of Electricity Regulation Act 1999, and Section 34 of Electricity Regulation Act 1999). Following on from the connection application, an initial payment is required. A DUoS charge is a fee that ESB Networks charges your Electricity Supplier for use of the Electricity Distribution System.

Details of Charges for Connection to the Distribution System, approved by CER, are available on the ESB Networks Website .

For further Information on the process for connection of demand customers to the distribution system, please refer to: https://www.esbnetworks.ie/docs/default-source/publications/guide-to-the-process-for-connection-of-demand-customers-to-the-distribution-system.pdf

2.20 Pre-Construction Phase

In preparation for construction, some permits may need to be obtained in advance of works, or there may be conditions of a permit, such as planning permission, that must be complied with in advance of construction works commencing. This section includes those permits potentially required in advance of construction commencing, depending on the specifics of your project. Some of the permits listed in this section may in reality only be obtained during the construction phase, in advance of a specific activity to be undertaken by the contractor, and some permits or licences will need to be obtained prior the commencement of construction works. This will depend on how the works are scheduled for your project. A project *Permits, Licence Consents and Notifications Register* is a useful way of scheduling and tracking your permit requirements.

2.20.1 Appointment of Construction Contracts

Specialist contractors will need to be appointed to deliver the development. There are two broad categories of contracting options:

1. Turnkey contracting, which sees a single company overseeing all hydro turbines, electrical and civil engineering works, or separate contracting, where individual aspects are contracted out to specific companies, and
2. Sub-contract the electrical and civil engineering works to companies that would be deemed appropriate for the installation of their equipment.

Typically, where hydropower projects follow the turnkey route, the turbine provider will lead and subcontract the electrical and civil engineering works to companies that would be deemed appropriate for the installation of their equipment.

Maintenance contracts are also usually agreed at this point, where required.

In some cases, it will be the Developer's responsibility to ensure the correct permits and licences are in place

to allow the contractor to undertake their work. In other cases, it will be the Contractor's responsibility to ensure the relevant permits and licences are in place to undertake their work packages. This needs to be made clear and set out in contracts to ensure there is no oversight.

Small micro-hydroelectric power projects, such as for single domestic dwellings or businesses would generally go by separate contracting.

2.20.2 Planning Permission Amendment and Conditions

Pre-construction, some conditions within the planning permission applied by the Local Authority or An Bord Pleanála must be sufficiently discharged (formal applications process where details requested are provided to comply), where required. This may include the likes of providing more specific details of design or similar details. Failure to discharge planning conditions as specified by the conditions of a planning permission may result in enforcement action.

Due to the requirement of needing planning permission and a grid connection offer to successfully enter an RESS auction, followed by securing funding, which can all take an extended period of time, there is a possibility that an amendment may be required to the consented development agreed with the Local Authority, as the design may have alterations or technological improvements.

2.20.3 Commencement Notice/7-Day Notice

In accordance with the Building Control Regulations, you are obliged to submit a *Commencement Notice* or a *7-Day Notice Application Form* with a *Seven Day Statutory Declaration* prior to commencement of the development to the Building Control Section of the Local Planning Authority, giving notice of the intention to start work.

A Commencement Notice must be received by the Building Control Authority not less than 14 days and not more than 28 days before you wish to commence.

Additional documentation may be required to be submitted with the completed Commencement Notice, and this should be completed online on the National BCMS (Building Control Management System). An online system (BCMS) for lodging commencement notices and 7 Day Notices and complying with the various new requirements is available at www.localgov.ie.

The fees relating to a 7-day notice are set out in the table below.

Table 2: Breakdown of the current rates and fees for a 7-Day Notice Application

Submission of a 7-Day Notice in Respect of:	Current Rate of Fees
(a) Work in connection with the construction or extension of a building	€250, or €5.80 for each square metre of floor area being provided, whichever is the greater
(b) Work in connection with -	
(i) the material alteration of the interior of a building	€250, or €5.80 for each square metre of relevant floor area, whichever is the greater
(ii) the material alteration of the external surfaces of a building	€250
(iii) a combination of (i) and (ii) above	€250, or €5.80 for each square metre of relevant floor area, whichever is the greater
(c) A building in which a material change of use takes place	€250, or €5.80 for each square metre of relevant floor area, whichever is the greater
(d) Works or a building, where the building concerned will be used as an agricultural building	€130, or €1.60 for each square metre in excess of 300 square metres of -

Submission of a 7-Day Notice in Respect of:	Current Rate of Fees
	(i) gross floor area being provided,
	Or
	(ii) relevant floor area
	As the case may be, whichever is the greater

2.20.4 Licenses, Permits, and Certificates

The following licences are suggested licences only. They will be updated in accordance with the approved guidance and legislation when it comes into force.

2.20.4.1 Road Opening/Closing Licence

For any works in a public area, to dig up a public road, footpath or grass verge, an Application for a T2-T3 Road Opening Licence is required. Works could relate to:

- Water/Sewer Connections;
- Lowering of footpaths;
- Footpath reconstruction; and
- Pipelaying

Applications for Road Opening Licenses can be applied through MapRoad Licencing, the national system for the management and processing of roadworks applications. To apply for access to the MapRoad Licencing system, a Registration Form must first be submitted to the Road Management Office.

If works relate to more than 1 road/street or involve a length >200m or are complex by involving rail crossings, bridges, or sites of engineering difficulty, an accompanying T1 Notification of Intent to Perform Large or Complex Road Works is required.

At times, a temporary road closure is needed in conjunction with a road opening licence or for other works. To comply with statutory requirements, an Application for a Temporary Road Closure should be submitted in advance to the relevant Local Authority. Local Authorities vary in the amount of advanced time an application should be submitted prior to works commencing. Check with the relevant authority to ensure the application is submitted within the required timeframe.

In conjunction with the above licences the following licences should also be applied for where works take place on or near public roads or pathways: a Hoarding/Scaffolding Licence and a Signage licence. A hoarding/scaffolding licence is required to facilitate building works and to ensure safety for the public. Completed application forms must be submitted to the relevant Local Authority. A Signage licence is also required to authorise the use of advertisement signs/structures on public roads (aka Directional Signs). Completed application forms must be submitted for assessment.

It will be necessary to check with the relevant local authority to determine the current fees for the various permit applications.

Recommended Reading in relation to Road Opening/Closing Licences is:

- MapRoad Licencing User Tutorials
- MapRoad Licencing FAQs

2.20.4.2 Abnormal Loads Permit (Permit for Specialised Vehicles)

A 'Special Permit' is required for any haulage vehicles which are considered to be either: Wide, Long or Heavy and travelling on the roads within the relevant County Council administrative area. These vehicles may be required when transporting larger components by road. Completed **application forms must be submitted 7 days prior to the commencement of the journey.**

There are two types of permits, depending on the location and sizing, both of which can also be required.

An Abnormal Load Permit is required for any vehicle that exceeds the maximum height, length, width, and weight as permitted in S.I. No. 5/2003 Road Traffic (Construction and Use of Vehicles Regulations). For full specifications on exceeded maximums, see the RSA Guidelines on Maximum Weights and Dimensions of Mechanically Propelled Vehicles and Trailers, Including Manoeuvrability Criteria. Applications must be made directly to the relevant Local Authority of the development and where vehicles will be passing through. The permit can have a maximum validity of 12 months or can be time/occasion limited upon granting by the Local Authority.

If transport not exceeding 27.4m in length and 4.3m in width takes place on major 'inter-urban' routes or to Cork, Rosslare or Ringaskiddy Ports, an additional Permit for Specialised Vehicles is required. This is issued by An Garda Síochána. Further information can be found in the Garda Guidelines for Operators (Movement of Abnormal Loads).

It is essential to consult both the relevant Local Authority regarding the application process and An Garda Síochána.

2.20.4.3 Section 50 Licence for the Construction, Replacement or Alteration of Bridges and Culverts

A Section 50 Licence is required when applying for consent to replace or alter a bridge or culvert, which is applied for through the Commissioners of Public Works.

Section 50 of the Arterial Drainage Act, 1945 requires that:

> *"No Local Authority, no railway company, canal company or other similar body, and no industrial concern shall construct any new bridge or alter, reconstruct, or restore any existing bridge over any watercourse without the consent of the Commissioners or otherwise than in accordance with plans previously approved of by the Commissioners*."

The Office of Public Works is responsible for the implementation of the regulations in the Arterial Drainage Act, 1945, including Section 50.

Please refer to the OPW Guide to Applying for Consent under Section 50 of the Arterial Drainage Act, 1945 for further information on the requirements and considerations for making the application.

Recommended Reading in relation to Section 50 Licences is:

- Consent Requirements – Construction/Alteration of Watercourse Infrastructure

2.20.4.4 Section 254 Licence (Items on Public Roads)

A Section 254 Licence applies to all appliances, cables, signs, street furniture or other items on public roads. You will need to apply to the relevant Local Planning Authority to place on, under, over or along a public road numerous items or equipment, including the following, which may be relevant to a hydro-electric project:

- A fence, scaffold or hoarding;
- A cable, wire or pipeline;

- Overground electronic communications infrastructure and any associated physical infrastructure such as A telephone pole or cabinet; or
- Any other appliance, apparatus or structure specified in regulations made by the Minister for Housing, Planning and Local Government or by an Act of the Oireachtas that requires a licence.

To apply for a Licence, you will need to complete the application form and submit that form to the Planning Authority along with:

- A Site Location Map - 1:2,500 scale;
- A Site Layout Plan showing location of proposed appliance(s)/apparatus(s)/structure(s);
- Drawing(s) to scale of proposed appliance(s)/apparatus(s)/structure(s);
- The appropriate licence fee;
- Copy of Insurance Confirmation indemnifying the relevant County Council against claims arising out of any accidents to persons or property;
- Written legal consent of the landowner; and
- A copy of the site notice.

2.20.4.5 Fire Safety Certificate

A Fire Safety Certificate is required where the applicant proposes a new building, a new building extension, material alterations to an existing building or a change of use of an existing building. The application is made through the National Building Control and Market Surveillance Office's (NBCO) Building Control Management System (BCMS). If the building or works comply with the requirements of Part B of the Second Schedule of the Building Regulations 1997, the NBCO will issue a Fire Safety Certificate.

A Fire Safety Certificate application should be made by a Fire Safety Consultant, Architect or Engineer who is familiar with the Building Regulations and the procedure for applying for a Fire Safety Certificate. The fees for the application vary based on the type of application required (normal, 7-day notice or regularisation application).

A valid Fire Safety Certificate application must include:

- A completed application form;
- Relevant fire safety drawings in duplicate;
- A fire safety report in duplicate;
- Site location maps in duplicate; and
- The appropriate fee.

Please refer to Part II of the Building Control Regulations for further information and exemptions. Additional documentation may be required to be submitted with the completed Commencement Notice/7 Day Notice, and this should be completed online on the National Building Control Management System (BCMS). The online BCMS also contains detailed information about specific exemptions, requirements, and outlines the steps of the application process.

2.20.4.6 Disability Access Certificate

A Disability Access Certificate is required in specific types of development set out in Building Control (Amendment) Regulations (S.I. No. 526/2018) Article 20D, Part 4. Regarding a hydropower development, there may be specific instances where accompanying structures, such as a converter station, require this certificate.

It is best practice to apply for your Disability Access Certificate at the same time you are applying for your Fire Safety Certificate (see **Section 2.20.4.5**). If both applications are prepared at the same time by the same person, the drawings can be coordinated prior to submission. A Disability Access Certificate application should be made by an appropriate consultant, architect or engineer who is familiar with the Building Regulations and the procedure for applying for a disability access certificate. The application is made through the National Building Control and Market Surveillance Office's (NBCO) Building Control Management System (BCMS).

A valid Fire Safety Certificate application must include:

- A completed application form;
- Relevant fire safety drawings in duplicate;
- A disability access report in duplicate;
- Site location maps in duplicate; and
- Providing the application is lodged at the same time as the Fire Safety Certificate application, a €500 fee applies. Otherwise, it's currently €800 per building.

To determine if your project may be exempt from the necessity of obtaining a disability access certificate, please refer to the Manual for the Reuse of Existing Buildings.

2.20.4.7 Certificate of Registration

A Certificate of Registration (COR) is required for waste activities set out in Part II of the Third Schedule of the Waste Management (Facility Permit and Registration) Regulations 2007, (S.I. No. 821 of 2007) as amended.

An application must be submitted to the relevant Local Authority. If an AA is required, submissions must also be made with the EPA. To aid in rapid determination, if the project or development requires a Certificate of Registration, please refer to the following Decision tree.

The EPA has literature and guidance on waste disposal and licencing requirements. It is also required to provide guidance on determining the need for permitting, and information can be requested via the following email address: licensing@epa.ie.

Recommended Reading in relation to CORs is:

- EPA: Certificate of Registration (COR)

2.20.4.8 Waste Disposal Licence/Permit

Waste disposal and recovery activities in Ireland require authorisation in accordance with the Waste Management Act 1996 as amended. To determine if the activity that is being carried out requires a waste licence please refer to the EPA services. A waste licence is a single licence which deals with emissions from an activity and the environmental management of the facility. Waste licences are issued through the EPA. It is also required to provide guidance on determining the need for permitting, and information can be requested via email: licensing@epa.ie.

Recommended Reading in relation to Waste Disposal Licence/Permit is:

- EPA - Determining who needs a waste licence
- EPA – How to apply for a licence

2.20.4.9 *Tree Licensing*

2.20.4.9.1 Felling Licence

As part of site works, the felling of trees for site clearance, cable installation, access, or maintenance, a Felling Licence may be required. This is administered by the Forest Service, which operates under the Department of Agriculture, Food and the Marine (DAFM).

Where a project involves a large area of forestry and or felling of several trees, this often triggers the requirement for replacement trees of suitable species or a mix thereof to be planted on "*bare plantable lands*" elsewhere via an Afforestation Licence; please see **Section 2.20.4.9.2** for further information.

A valid licence must be obtained before any felling commences unless such works fall under exempted categories.

Exemptions from securing a Felling Licence apply to the following common scenarios:

- A tree in an urban area, provided it is not under a protection order;
- A tree within 30m of a building, but excluding any building built after the trees were planted;
- A tree less than 5 years of age that came about through natural regeneration and removed from a field as part of the normal maintenance of agricultural land - but not where the tree is standing in a hedgerow;
- A tree uprooted in a nursery for transplantation;
- A tree of the willow or poplar species planted and maintained solely for fuel under a short rotation coppice;
- A tree outside a forest within 10m of a public road and which, in the opinion of the owner is dangerous to persons using the public road because of its age or condition;
- A tree outside a forest of the hawthorn or blackthorn species;
- A tree outside a forest in a hedgerow and felled for the purposes of its trimming, provided that the tree does not exceed 20cms in diameter when measured 1.3m from the ground;
- A tree outside a forest, the removal of which is specified in a grant of planning permission;
- A tree outside a forest on an agricultural holding removed by the owner for use on that holding, provided:
    1. It does not form part of a decorative avenue or ring of trees;
    2. Its volume does not exceed $3m^3$;
    3. The removal of trees for use on the farm does not exceed $15m^3$ in any period of 12 months.

It should be noted that the three above exemptions do not apply in all circumstances, for example, when trees are more than 150 years old or are close to certain protected structures, monuments, archaeological sites, or specific environmentally sensitive areas. If you live in an urban area, you may need to contact the Local Authority to see if there is a Tree Preservation Order (TPO) on the tree. TPOs may apply to other significant or important trees, so it is important to check. For further details on these exemptions, please refer to: Tree Felling Guidance Ireland.

Certain bodies are exempted from the requirement for a felling licence, these include but are not limited to:

- Bord Gáis (Section 27, Gas Act, 1976);
- Aer Rianta (Section 46, Air Navigation and Transport (Amendment) Act, 1998);
- CIÉ or any other railway undertaking (Section 49, Transport (Railway Infrastructure) Act, 2001);

- CIÉ (Section 15, Transport (Dublin Light Rail) Act, 1996);
- Any telephone/mobile network operator (Section 58, Communications Regulation Act, 2002);
- The ESB (Section 45, Electricity Regulation Act, 1999);
- National Parks and Wildlife Service (NPWS) (Section 72, Wildlife (Amendment) Act, 2000);
- Minister for Defence (Section 7, Defence (Amendment) Act, 1987); and
- Inland Fisheries Act (Section 59, Inland Fisheries Act, 2010).

At present, each licence application costs €20. A tree felling licence, once granted, is valid for a period of 10 years and can be extended up to 5 further years. Applications should be sent alongside accompanying maps to by email to: felling.forestservice@agriculture.gov.ie.

Please see the sections below on the specific examples of licensing works and how to apply. Further guidance, application templates, and information can be found at DAFM Tree Felling Licences.

The required felling licences should be applied for as early as possible. This will minimise delays by giving the Forest Service timely notice of the full felling requirements. It also lessens the risk of commitments being made by the developer before the licences are granted. However, it should be noted that under the Forestry Act, 1946, the validity of an LFL is currently limited to 2 years. As soon as planning permission is granted for the development by the Local Authority or An Bord Pleanála, a copy of the full planning permission should be submitted to support the felling licence application(s).

Licences must be secured before felling can take place. It should be noted that it can take up to 12 months to secure the necessary approvals from the Forest Service. The Forestry Division's Tree felling and management website contains the most up-to-date information, including the felling licence application form and guidance notes.

Teagasc also has additional useful information on the legal requirements for felling, as well as guidance and sample applications.

Recommended Reading in relation to Felling Licences and associated requirements is:

- Teagasc: Legal requirements for afforestation
- DAFM: Forestry Standards Manual

2.20.4.10 Afforestation Licence

An Afforestation Licence "*provides the permission to plant all or part of the areas specified, and the areas planted meet scheme requirements*". This is necessary for all afforestation projects where the area involved is greater than 0.1 hectares (or approximately 0.25 acres). Afforestation is defined in the Forestry Act 2014 as, "*the conversion of land to a forest with a minimum area of 0.1 hectares and tree crown cover of more than 20 per cent of the total area, or the potential to achieve this cover at maturity*". Forest land is defined as land under trees with a minimum area of 0.1 hectare and tree crown cover of more than 20% of the total area (or the potential to achieve this cover at maturity).

This licence is necessary when a developer seeks to replant trees which were felled during a site development. As part of a Felling Licence application, afforestation plans can also be set out and therefore requests for both licences can be made together. For the proposed afforestation of alternative lands, approval must be obtained before the associated felling licence can be granted. Proposed alternative land, which must be suitable land that has never been the subject of afforestation in the past, should be submitted for afforestation approval as early as possible, ideally at the same time as the Felling Licence application is submitted.

All afforestation projects (whether availing of a grant or not) must obtain prior written approval from the

Department of Agriculture, Food, and the Marine (DAFM) termed 'Technical Approval'. A Technical Approval confirms that the proposed forest detailed in the application complies with the silvicultural (control of the growth, quality and needs of the forest, of particular importance for timber production) and environmental requirements. This approval provides permission to plant all or part of the areas specified in the application. Grant-aided projects require a supplementary 'Financial approval' in conjunction with technical approval. This financial approval must be obtained before work can commence.

Afforestation Applications should be sent alongside accompanying maps to the Forestry Division of the DAFM by email to: felling.forestservice@agriculture.gov.ie.

Please refer to the sections below for specific examples of licensing works and instructions on how to apply. Further guidance, application templates, and information can be found at DAFM Tree Felling Licences.

Recommended Reading in relation to Afforestation Licences can be found at: Teagasc: Felling and Reforestation Policy

2.20.4.11 Activities Requiring Consent including Natural Heritage Areas (NHAs)

Activities Requiring Consent (ARCs) ARCs are specific activities which have the potential to damage European Sites i.e. Natura 2000 Sites. While ARCs are not prohibited activities, consent must be granted by the Minister for Housing, Local Government and Heritage or by another relevant public authority prior to works commencing. A list of 39 ARCs has been published, ranging from ploughing and harrowing to clearing vegetation or landfilling. This prior consent requirement ensures that the Minister (or the relevant competent authority) carries out the necessary environmental assessment to determine if the activity can take place and if any conditions should be attached to any consent given.

Prior to designating a new site as an Special Areas of Conservation (SAC) or Special Protection Area (SPA), information on the ARC(s) (if any) attached to the site will be communicated to the landowner (and where known, the relevant occupier or user of the land)) in the form of a 'site pack' along with a public notification. SACs and SPAs are afforded protection from the time of public notification of the intention to designate the site.

For Natural Heritage Areas (NHA), certain works will require consent. Permission to carry out these works on an NHA is required (under Regulation 19 of the Wildlife (Amendment) Act 2000). The works which require the consent of the Minister are found at Schedule 2 of the statutory instrument designating the relevant NHA.

For further information, guidance, and application forms, please see: NPWS Activities Requiring Consent.

2.20.4.12 Ecological Consents, Notifiable Actions/ Consents/ Derogations Licences

If you are intending to develop on or in an area where wildlife could be impacted, consent may be required. Such consent may be in the form of notifiable actions or licences. Further permission may then be required in exceptional cases (e.g., the species is threatened or in poor condition), when handling or movement of the protected species is necessary.

For the full breakdown and detail on the various activities that constitute a notifiable action for listed habitats and species, please refer to the National Parks and Wildlife Service (NPWS) page here: https://www.npws.ie/farmers-and-landowners/notifiable-actions/listed-habitats-and-species.

2.20.4.13 Derogation Licence

A derogation licence may be required when removing vegetation in preparation for tree felling/afforestation. Derogation licences are licences to disturb or interfere with protected plant and animal species. A number of plant and animal species are legally protected in Ireland. Some of these species are included in a system of Strict Protection pursuant to the requirements of Articles 12, 13 and 16 of the Habitats Directive (92/43/EEC) and are sometimes referred to as Annex IV species. The list of Annex IV species which occur in Ireland and its

waters is set out in the table below. The European Commission Guidance document[15] on the strict protection of animal species of Community interest under the Habitats Directive 92/43/EEC (October 2021) should also be consulted for further information.

The National Parks and Wildlife Service (NPWS) is the responsible body for administering Annex IV protection for Ireland. Applications must be submitted directly to the NPWS and require an accompanying Ecologist's Report. Application Forms for Derogation Licences can be found at NPWS: Application for Derogation Licence and should be submitted to: wildlifelicence@npws.gov.ie.

Recommended Reading in relation to Derogation Licences is:

- Guidance on the Strict Protection of Certain Animal and Plant Species under the Habitats Directive in Ireland
- Guidance on the Strict Protection of Animal Species
- Notifiable Actions for Listed Habitats and Species

Table 3: Annex IV Species

Annex IV Species	
Animals	**Plants**
All bat species	Killarney Fern
Otter	Slender Naiad
Natterjack Toad	Marsh Saxifrage
Kerry Slug	
Dolphins and Porpoises	
Whales	
Marine Turtles	

2.20.4.14 Derogation Licence to Disturb Bats or their Breeding or Resting Places

At present, there are nine confirmed resident bat species in Ireland. All bats are listed on Annex IV of the EU Habitats Directive. Under the Irish law that implements this directive, both the bats themselves and their roosts are protected; as such, it is an offence to disturb or interfere with them without an appropriate licence. If any bat species is suspected to inhabit a structure (e.g., trees, bat boxes, buildings, stone bridges, etc.) in any area proposed for development, a derogation licence to disturb bats, their breeding or resting places may be required by the granting authority[16].

Even when planning permission is granted, the wildlife legislation applies. **Works which would capture or kill them, damage or destroy their roosts or disturb them at important parts of their life cycle cannot take place without obtaining a *second derogation licence*.** This licence is issued when planning permission is given under Regulation 54 of the Regulations, and strict criteria must be met before such a licence can be approved. 'Bat Mitigation Guidelines for Ireland'[17] should also be referred to when carrying out works which may disturb them.

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[15] *European Commission Guidance document. Available online at: https://environment.ec.europa.eu/topics/nature-and-biodiversity/habitats-directive_en*

[16] *National Parks and Wildlife Service (NPWS), under EC (Birds and Natural Habitats) Regulations 2011-2021.*

[17] *NPWS Bat Mitigation Guidelines for Ireland. Available online at: https://www.npws.ie/sites/default/files/publications/pdf/IWM134.pdf*

2.20.4.15 Derogation Licence to Disturb Otters or their Breeding or Resting Places

Otters are listed on Annex IV of the EU Habitats Directive. Under the Irish law that implements this directive, both the otters themselves and their holts are protected; as such, it is an offence to disturb or interfere with them without an appropriate licence. If an otter species is suspected to inhabit a structure (e.g., banks or culverts, etc.) in any area proposed for development, a derogation licence to disturb otters, their breeding or resting places may be required by the granting authority[18].

Even when planning permission is granted, the wildlife legislation applies. **Works which would capture or kill them, damage or destroy their roosts or disturb them at important parts of their life cycle cannot take place without obtaining a *second derogation licence*.** This licence is issued when planning permission is given under Regulation 54 of the Regulations, and strict criteria must be met before such a licence can be approved. 'Guidelines for the Treatment of Otters Prior to the Construction of National Road Schemes'[19] should also be referred to when carrying out works which may disturb them.

2.20.4.16 Licence To Take or Interfere with Protected Plant Species for Scientific, Educational, or Other Such Purposes

As per the Flora (Protection) Order (2022), If any protected plant species is known/found/noted to be present in an area that is proposed to be developed, a licence to interfere with these species is required Under Section 21 of the Wildlife Act. Under Section 21, it is an offence for a person to cut, pick, uproot or otherwise take, purchase, sell or be in possession of any plant whether whole or part, of a species mentioned in the Order, or wilfully to alter, damage, destroy or interfere with the habitat of such a species, except under licence of the Minister, and then, strictly for scientific, educational or other such purposes.

A licence to take or interfere with protected plant species for scientific, educational, or other such purposes can be applied for through the granting authority, the National Parks and Wildlife Service (NPWS). In the absence of any viable alternative, licences are granted where no significant damage will be caused to the conservation status of the species and where the adverse impact on the local population of the species is kept to a minimum. Applications will only be considered if a licence is required for scientific, educational or other such purposes.

See https://www.npws.ie/licencesandconsents/disturbance/protected-plant-species for further information.

2.20.4.17 Capture/Kill Protected Wild Animals for Education or Scientific Purposes Licence

A '*Capture/Kill Protected Wild Animals for Education or Scientific Purposes Licence*' is required for all survey and monitoring of all protected species, ***even where animals will not be handled*** (under Section 23 and Section 34 of the Wildlife Act 1976 (as amended).

Although the application form/licence refers to 'capture or killing of protected wild animals', licences are required to investigate sites where protected species are found. Due to the various protected species' status as threatened and or in poor condition, it is only in exceptional cases that handling, or movement of animals is licenced. Licences will only be granted if the licenced activity will result in no significant adverse impact on the conservation of the species. For example, if the freshwater pearl mussel is suspected to occur in an aquatic habitat impacted by a development, this licence would be required to potentially translocate this species to an appropriate location. The decision to grant the licence will be made by the wildlife licence unit through the National Parks and Wildlife Service (NPWS).

Licencing is managed by the NPWS and applications must be sent to: wildlifelicence@npws.gov.ie. Further guidance and application forms can be found at NPWS: Capture/Kill Protected Wild Animals for Educational

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[18] *National Parks and Wildlife Service (NPWS), under EC (Birds and Natural Habitats) Regulations 2011-2021.*

[19] *Guidelines for the Treatment of Otters Prior to the Construction of National Road Schemes. NRA, 2008.*

or Scientific Purposes.

2.20.4.18 Licence To Photograph or Film a Protected Wild Animal or Bird

In general, a licence is not required for photography/filming of protected wild animals or birds provided that there will be no risk of disturbance to the breeding place of any animal, a nest containing eggs or unflown young of any bird. However, **if you intend to photograph a protected wild animal or bird on or near the breeding place of such an animal or bird, you should apply for this licence**.

For a person to take or make photographic, video or other pictures of a protected wild animal of a species specified in the licence, on or near the breeding place of such an animal, a licence may be issued by the Minister (Under Section 23 (6)(b) of the Wildlife Act, 1976 (as amended)). Applications for permissions are made on a standard application form (Licence to Photograph/Film a Protected Wild Animal) and submitted to the wildlife licence unit of the National Parks and Wildlife Service.

For a person to take or make photographic, video or other pictures of a protected bird of a species specified in the licence, or a wild bird of a species specified in the licence on or near a nest containing eggs or unflown young, a licence may be issued by the Minister (Section 22 (9)(f) of the Wildlife Act, 1976 (as amended)). Applications for permissions are made on a standard application form (Licence to Photograph or Film a Protected Wild Bird) and submitted to the wildlife licence unit of the National Parks and Wildlife Service.

Animal species protected under the Wildlife Act are listed in the table below.

Table 4: Current list of protected animal species in Ireland

Mammals			Amphibians	Reptiles	Fish	Invertebrates
All Bat Species	Otter	All Seal species	Natterjack Toad	Common Lizard	Basking Shark	Freshwater crayfish
Badger	Pine Marten	All Whale species	Common Frog	Leatherback turtle		Freshwater pearl mussel
All Deer Species	Red Squirrel	All Dolphin species	Common Newt			Kerry slug
All Hare Species	Pygmy Shrew	All Porpoise species				
Hedgehog	Stoat					

2.20.4.19 Licence To Interfere with or Destroy the Breeding Places of Any Wild Animals

If you intend to develop an area known for its breeding places of wild animals, a licence 'To Interfere with or Destroy the Breeding Places of Any Wild Animals' may be required to proceed. A licence may be required from the granting authority, National Parks and Wildlife Service (NPWS) (Section 23 (5) (d) of the Wildlife Act 1976 as amended), the legislation states that any person who wilfully interferes with or destroys the breeding place or resting place of any protected wild animal, shall be guilty of an offence.

See https://www.npws.ie/licences-disturb-or-interfere-protected-plant-and-animal-species for further information.

2.20.4.20 Removal of Invasive Alien Species

Under the EC Birds and Natural Habitats Regulations 2001 (SI 477 of 2011), it is an offence to release, allow to disperse or escape, breed, propagate, import, transport, sell, or advertise species listed on Schedule 3 of the regulations without a Licence. The two regulations that deal specifically with this scheduled list of species are:

- Regulation 49: Prohibition of introduction and dispersal of certain listed species;
- Regulation 50: makes it an offence to or to intend to import, buy, sell, breed, transport and distribute listed animal or plant species or vector material; and

- Regulation 74: which sets out transitional provisions related to the commencement of Regulations 49 and 50

The following activities are expressly prohibited:

- Dumping invasive species cuttings in the countryside;
- Planting or otherwise causing to grow in the wild (hence the landowner should be careful not to cause further spread);
- Disposing of invasive species at a landfill site without first informing the landfill site that the waste contains invasive species material (this action requires an appropriate licence); and
- Moving soil which contains specific invasive species in the Republic of Ireland unless under a licence from the National Parks and Wildlife Service (NPWS).

At any stage of a project, where invasive alien plant species are encountered, a licence for the removal/movement of invasive species from the site is required. A request for licencing must be sent to: wildlifelicence@npws.gov.ie. If herbicides or pesticides have been used, the contaminated materials may be classed as a hazardous waste or non-hazardous waste and will be required to be appropriately disposed of at an appropriately licenced facility, check with the relevant local authority on available facilities.

When submitting your application for a licence, it should include:

- Detailed methods of removal, transportation and treatment of the species;
- Information on the bio-security measures;
- Management plan; and
- Timeframe for carrying out the work.

Recommended Reading regarding the Removal of Invasive Alien Species is:

- National Biodiversity Data Centre: Invasive Alien Species in Ireland
- NPWS: EU Regulation on Invasive Alien Species

2.20.4.21 Ministerial Consent for works at/near a National Monument

Where works may occur at or near a national monument, consent must be granted prior to the Minister for Housing, Local Government and Heritage. Section 14 of the National Monuments Act 1930 (as amended) requires that the consent of the Minister is required for archaeological works at or near a national monument in the ownership or guardianship of the Minister or a local authority or to which a preservation order applies. A minimum of two months' written notice is required by the applicant. The Minister is required to consult with the Director of the National Museum of Ireland in relation to such an application for consent.

Consents of this nature must be requested through the National Monuments Service at: nationalmonuments@housing.gov.ie.

Further guidance and forms are available at NMS: Ministerial Consent – National Monuments

2.20.4.22 Detection Device Consent (Archaeological)

Consent to use a detection device may be required when digging for foundations in the vicinity of a known heritage site to rule out or determine if there are further archaeological objects of interest.

The use of metal detection devices is not permitted without consent on archaeological sites or to search for archaeological objects. The National Monuments Service grants detection devices consents, and a request for such consents must be submitted to: nationalmonuments@housing.gov.ie. Further guidance is available at NMS: Detection Device Consent.

2.20.4.23 Excavation Licence (Archaeological)

An excavation licence consent is required before digging at a heritage site can commence. Section 26 of the National Monuments Act 1930 (as amended) requires that excavations for archaeological purposes must be carried out by archaeologists acting under an excavation licence. An Excavation Licence will likely be accompanied by an Excavation Risk Assessment process, as Construction Regulations require contractors to guard against the dangers from a fall or dislodgement of material in an excavation.

An excavation licence can only be held by an appropriately experienced and competent Archaeologist who is competent in archaeological excavation techniques, and conversant with Irish archaeology.

The Safety, Health and Welfare at Work Act 2005 requires a risk assessment to be performed by contractors before undertaking excavation work.

2.20.4.24 Water Abstraction Registration

To abstract is to remove or divert water from a lake, river, stream, spring, groundwater well, borehole or estuary. By law, if you abstract 25 m^3 (25,000 litres) of water or more per day, you must register this abstraction with the Environmental Protection Authority (EPA) (e.g., used for dust suppression). Although not a licence (which is under development), failure to register can incur a Class A fine (a fine not exceeding €5,000). Requirements are set out in the Water Environment (abstractions and Associated Impoundments) Bill 2022.

The development of a register of water abstractions is a requirement of EU law under the Water Framework Directive (2000/60/EC). New abstractions must be registered within one month of the start of the abstraction. If you reported your water abstraction to a public authority (such as your Local Authority) in the past, you must also register your water abstraction with the EPA.

Temporary abstraction of 25 m^3 (25,000 litres) of water or more per day must be registered, unless the abstraction is a one-off occurrence with a duration of no more than 24 hours that is not going to be repeated at any regular or irregular interval. For all other temporary abstractions, a point of abstraction must be identified, and the maximum abstraction should be used when registering. When a one-off temporary abstraction ceases, it should be deregistered. This will be required for water abstraction to feed an industrial process or to dewater a groundwater body to facilitate a deep excavation during construction.

If you have any queries regarding this licence, you can contact the EPA at edenabstractionsupport@epa.ie. Further information on abstraction and registration can be found at: EPA: Water Abstraction Regulations.

2.20.4.25 Surface Water Discharge Licence

Securing a discharge of effluent to waters, this licence allows for the discharge of trade effluent or sewage to a water body or groundwater after appropriate treatment. These licences are administered by Local Authorities, and there are a number of exemptions which include the following:

- Discharges to tidal waters from vessels or marine structures;
- Discharges from a sewer owned by, vested in or controlled by a Water Services Authority; and
- Discharges subject to Integrated Pollution Control (IPC) licensing by the EPA.

Legal requirements are based on the Water Pollution Acts, 1977 and 1990. This requirement will only apply to industrial facilities with water or fluid discharge into the environment outside of the sewage system, as such, this would only be applicable to hydroelectric systems, where waters are uncontaminated.

If the activity causing the discharge does not fall under the remit of the First Schedule of the Environmental Protection Agency Act, 1992 (as amended by the Protection of the Environment Act, 2003) an application for a licence must be made to the Local Authority in whose functional area, the discharge is to occur.

Effluent discharges for which a discharge licence must be obtained are as follows:

- All trade effluent discharges to surface water;
- All trade effluent discharges to groundwater;
- All domestic wastewater discharges to surface water; and
- All discharges of domestic wastewater greater than $5m^3$ /day which is discharged to (groundwater) from a septic tank or other disposal unit by means of a percolation area, soakage pit or other method.

2.20.4.26 White-Clawed Crayfish Licence

For streams, rivers and lakes where white-clawed crayfish are known to be present, if there is potential for the area to be impacted by a proposed development or project, a '*White-Clawed Crayfish Licence*' will be required to survey and or remove this species to an appropriate location.

A '*White-Clawed Crayfish Licence*' is granted by the wildlife licence unit through the National Parks and Wildlife Service (NPWS), under Sections 23 and 24, Wildlife Act 1976 (as amended). The permit allows the survey, capture, temporary confinement and translocation of white-clawed crayfish.

Licencing is managed by the NPWS and applications must be sent to: wildlifelicence@npws.gov.ie. Further guidance specific to crayfish and application forms can be found at: NPWS: Capture/Kill Protected Wild Animals for Educational or Scientific Purposes.

See the survey licence conditions for White-Clawed Crayfish for further information.

2.21 Construction Phase

2.21.1 Outline of Construction

The scale and the location of each project will depend on the different components necessary for hydropower projects. All common hydro power developments will be composed of a generator, turbine, penstock (a valve to control water intake) and wicket gates (adjustable vanes which control the flow of water to the turbines). In certain circumstances, depending on the location, construction works will be limited to certain months of the year due to environmental concerns, such as to prevent disturbance of salmonids.

Construction works are likely to commence by setting up site compounds and establishing equipment and material set-down areas, waste management infrastructure, site offices and welfare facilities. Further geotechnical site investigations may also be necessary at this point.

Once safe access has been established to the site, the contractors will begin with site preparation works, clearing, levelling and preparing the ground for the installation of any required foundations for the equipment and structures associated with the hydropower energy facility.

Off-site grid connection works are typically carried out concurrently with on-site construction of the hydropower energy facility. These can typically include upgrades to existing ESB Networks or EirGrid substations or even the construction of a new substation. All other works are scheduled to be completed simultaneously with the grid connection works, ready to be energised for pre-commissioning and final commissioning.

Throughout the construction stage, the project is monitored by various specialists to ensure it is constructed safely, correctly and in compliance with the planning conditions and grid requirements. This can include community liaison officers, ecologists, archaeologists, etc., alongside construction monitoring carried out by various engineers to ensure the project is constructed in accordance with the relevant specifications and standards, approved design and contracts.

Depending on the scale and complexity of the hydropower energy project, various permits may be required during the construction phase. Maintaining compliance with the permits granted to the project is crucial. The

following sections outline the permits, licences, and compliance requirements which may be applicable to your project.

2.21.2 Planning Permission Conditions

Upon a grant of planning permission, there will almost certainly be planning conditions imposed by the Planning Authority, which may cover a range of matters.

There will likely be conditions that will cover matters during construction, such as working hours, which specify the acceptable window of time when construction may take place, or other conditions in relation to noise from construction, dust generated, wheel washing, etc. These conditions must be strictly adhered to, as if a project is found to be in breach of conditions, a Local Authority may initiate enforcement proceedings.

The Planning Authority may deploy Site Inspectors to ensure compliance with planning conditions and other site matters under which the Local Authority has jurisdiction.

2.21.3 Commissioning

Once planning permission is obtained and construction is complete, commissioning of the hydropower scheme will take place. The Planning Authority, or An Bord Pleanála, may impose conditions in relation to commissioning the scheme, depending on location, size of the project, and any environmental concerns.

A sample of what a condition might look like in relation to the commissioning of a hydropower project is shown below:

"On completion of the construction phase of the development and commissioning of the hydropower system, the applicant shall undertake an ecological survey including a macroinvertebrate (Q value) survey of the river watercourse downstream in the uptake to the mill race. On commissioning of the hydropower scheme, the applicant shall submit a detailed proposal of the survey, for the formal written approval of the Planning Authority. The initial survey shall be completed within 30 months of the date of commissioning of the hydropower scheme and a specific report on the survey shall be submitted to both the Planning Authority and the regional office of Inland Fisheries Ireland[20]".

Commissioning involves a series of electrical testing, mechanical testing, performance evaluations and corrections reporting. The purpose is to ensure the equipment has been correctly installed and will operate safely and efficiently.

Provided a project passes the commissioning stage, it will then enter its operational stage and begin to produce electricity for consumption or sale.

[20] EPA Catchments Unit: Water Quality Q-value results for Rivers Surveyed in 2022: https://www.catchments.ie/epa-publishes-water-quality-q-value-results-for-rivers-surveyed-in-2022/

3 Operating and Maintenance Phase

For small micro-hydroelectric power plants, the turbines should be inspected once a year, with the annual cost not being more than 1-2% of the scheme. River schemes will have a 'trash rack' which is designed to prevent debris from reaching the turbine; this will need to be inspected and cleaned on a regular basis. Turbines will typically last for about 25 years, with generators lasting about 10-15 years. Larger hydropower turbines have a longer operational life of up to 50 years.

Other operational maintenance that may occur includes standard costs of environmental impact mitigation, such as the installation of fish conservation measures, including fish ladders.

A list of suppliers for ongoing maintenance and repairs for hydropower in Ireland includes:

- Fingleton White & Co. Ltd;
- Wind Water Solar Energy Systems Ltd; and
- Water-Power Services.

Further information can be found on the Irish Hydropower Association website.[21]

3.1 Recurring Licences

Some licences and consents may not have a duration that covers the entire lifespan of a hydropower project, and may require further attention from the owner/operator. This may be because of the legislative basis for the consents, or as a change of legal circumstance, or an environmental change over time.

Depending on the placement of the project, the following licences and or additional licences may or may not be required for the safe operation and maintenance of the site. It is the responsibility of the owner/operator of the hydropower site to keep up to date/abreast of the relevant necessary licences.

3.1.1 Wayleave Consent: Section 48 to Lay Electric Cables

Wayleave Consent: Section 48 refers to the power to lay electric cables (Section 48 of the Electricity Regulation Act 1999, as amended). It is granted to lay electric cables across or under any street, road, railway or tramway, and the right to break up any street, road, railway or tramway for that purpose. This licence is separate from other agreements, such as the Road Opening Licence.

Please refer to **Section 2.19.10** for further information about Wayleave Consent: Section 48.

3.1.2 Wayleave Consent: Section 49 to Lay Electric Cables

Wayleave Consent: Section 49 refers to the power to lay electric lines (Section 49 of the Electricity Regulation Act 1999, as amended). This is granted to lay lines across or under any land not being a street, road, railway, or tramway.

Should the electric lines be required to go through private land, a yearly agreement has to be reached between the asset owner and the landowner for the duration of the project. This is a separate requirement from the Section 49 application.

Please refer to **Section 2.19.11**Error! Reference source not found. for further information about Wayleave C onsent: Section 49.

3.1.3 Abnormal Loads Permit (Permit for Specialised Vehicles)

A 'Special Permit' is required for any haulage vehicles which are considered to be either: Wide, Long or Heavy and travelling on the roads within the relevant County Council administrative area. These vehicles may be

[21] IHA: Home Page (irishhydro.com)

required when transporting larger components by road following deconstruction. Completed application forms must be submitted 7 days prior to the commencement of the journey.

Please refer to **Section 2.20.4.2** for further information about Abnormal Load Permits.

3.1.4 Certificate of Registration

The waste activities that require a certificate of registration are listed in Part II of the Third Schedule of the Waste Management (Facility Permit and Registration) Regulations 2007, (S.I. No. 821 of 2007) as amended.

When these activities are carried out by individuals or organisations that are not local authorities, certificates of registration are granted by the Local Authority in whose area the activity will be carried out.

See this **Section 2.20.4.7** for further information about the Certificate of Registration.

3.1.5 Waste Disposal Licence/Permit

Waste disposal and recovery activities in Ireland require authorisation in accordance with the Waste Management Act 1996 as amended. To determine if the activity that is being carried out requires a waste licence please refer to the EPA services. A waste licence is a single licence which deals with emissions from an activity and the environmental management of the facility. Waste licences are issued through the EPA.

Please refer to **Section 2.20.4.82.20.4.8** for further information about Waste Disposal Licences and Permits.

3.1.6 Disability Access Certificate

A revised Disability Access Certificate (DAC) is required where a significant revision is made to the design or works or a material alteration to or a material change of use of a building in respect of which a DAC has been granted by a Building Control Authority, which is the Local Authority for the respective area.

Please refer to **Section 2.20.4.6** for further information about Disability Access Certificates.

3.1.7 Ecological Consents, Notifiable Actions/Consents/Derogations Licences

If you are intending to develop in an area where wildlife could be impacted, consent may be required. Such consent may be in the form of notifiable actions or licences. Further permission may then be required in exceptional cases (e.g., species is threatened or in poor condition), when handling or movement of the protected species is necessary.

For the full breakdown and details on the various activities that constitute a notifiable action for listed habitats and species, please refer to the NPWS page.

3.1.8 Derogation Licence

Over the course of operation, there may be a need to interfere with a protected species if they happen to be interrupting the safe and efficient operation of the hydroelectric installation. As such, a Derogation Licence would be required.

Please refer to **Section 2.20.4.13** for further information about Derogation Licences.

3.1.9 Capture/Kill Protected Wild Animals for Education or Scientific Purposes Licence

A '*Capture/Kill Protected Wild Animals for Education or Scientific Purposes Licence*' is required for all survey and monitoring of all protected species, ***even where animals will not be handled*** (under Section 23 and Section 34 of the Wildlife Act 1976 (as amended).

For further information, please refer **Section 2.20.4.17.**

3.1.10 Licence To Take or Interfere with Protected Plant Species for Scientific, Educational, or Other Such Purposes

As per the Flora (Protection) Order (2022), if any protected plant species is known/found/noted to be present in an area that is proposed to be developed, a licence to interfere with these species is required under Section 21 of the Wildlife Act.

For further information, please refer **Section 2.20.4.16**.

3.1.11 White-Clawed Crayfish Licence

For streams, rivers and lakes where white-clawed crayfish are known to be present, if there is potential for the area to be impacted by a proposed development or project, a '*White-Clawed Crayfish Licence*' will be required to survey and or remove this species to an appropriate location.

For further information, please refer to **Section 2.20.4.26**

3.1.12 Licence To Interfere with or Destroy the Breeding Places of Any Wild Animals

Similar to the case of Derogation Licences, during operation of a hydroelectric installation, it may become necessary to interfere with or destroy the breeding place of wild animals, thus requiring an associated licence.

Please refer to **Section 2.20.4.19** for further information about Licences to Interfere with or Destroy the Breeding Places of Any Wild Animals.

3.1.13 Derogation Licence to Disturb Otters or their Breeding or Resting Places

Otters are listed on Annex IV of the EU Habitats Directive. Under the Irish law that implements this directive, both the otters themselves and their holts are protected; as such, it is an offence to disturb or interfere with them without an appropriate licence.

Please refer to **Section 2.20.4.15** for further information about Derogation Licences to Disturb Otters or their Breeding or Resting Places.

3.1.14 Licence for the Removal of Invasive Alien Species

Under the EC Birds and Natural Habitats Regulations 2001 SI 477 of 2011, it is an offence to release or allow to disperse or escape, to breed, propagate, import, transport, sell or advertise species listed on Schedule 3 of the regulations without a Licence.

Please refer to **Section 2.20.4.202.20.4.20** for further information about a licence for the Removal of Invasive Alien Species.

4 End Phase

4.1 Decommissioning

Decommissioning refers to the cessation of energy production and the dismantling and removal of all equipment and infrastructure associated with the hydroelectric project.

4.1.1 Planning Considerations

Depending on the circumstances of each project, the original planning permission may contain a condition specifying that any further works on the site require further planning permission to be obtained. Before embarking on the decommissioning of a hydropower project, please check all relevant planning permission documents from previous applications.

4.1.2 Previously Exempted development

Micro-hydropower installations that did not require planning permission for construction, having been classed as exempted development, do not require planning permission for decommissioning. If there are any concerns regarding whether planning permission is required for replacement, repairs, or upgrades to hydropower projects, you may contact your Local Authority and request a Section 5 Declaration, in which it will be determined if your works are exempt from planning permission or not.

4.1.3 Previously Consented Development

Typically, projects that have been constructed following the procurement of planning permission, from either the Local Authority or An Bord Pleanála, will deal with decommissioning by condition. This means that within the conditions attached to the planning permission, it will directly set out how to carry out decommissioning and restoration of the site to its original condition. This is typically ordered after a set period of operation, and thus, the decommissioning of the installation does not require further consent, as it has been provided for under the original application. If, however, you wish to conduct works not specified within the original permission, planning consent will be required for those works. A sample of what a condition might look like in relation to decommissioning is shown below:

> *"Within 6 months of the cessation of energy generation, or a period of 30 years and 6 months following completion of construction, whichever is the sooner, all foundations/anchors, access roads and infrastructure associated with the hydro-electric scheme shall be dismantled and removed from the site and the site restored to its original condition, unless planning permission has been granted for the retention of the hydro-electric scheme for a further period, prior to the expiration of the 30 year period."*

Please note that there may be other conditions specified regarding the end of a project's lifespan, so please review relevant permissions carefully.

4.1.4 Licences

The decommissioning phase of a project may require reapplication for licences applied for during the pre-construction phase, along with the acquisition of additional licences.

4.1.4.1 Notice to Close and Application to Terminate Connection Agreement

Notice of intention to stop/change electricity generation is a mandatory requirement as part of the grid connection agreement.

The requested termination date must be in line with Grid Code requirements. For generators less than 50 MW, the date must be at least two years after the deemed complete application date. For generators greater than 50 MW installed capacity, the date must be at least three years after the deemed complete application date.

For further information on the steps required for a valid notice to close and application to termination of the connection agreement, please refer to the EirGrid Group Plant Closure Process.

4.1.4.2 Extension

Renewable energy technology, as with any other infrastructure, has a lifetime which has been determined to be the maximum allowable period of operation for the equipment. This is generally advised by the manufacturer of the equipment. However, a lifetime may also be determined through planning permission, by condition. It is recommended to operate hydropower infrastructure and equipment in accordance with the manufacturer's instructions to ensure safe operations. After the expiration of this period, it is recommended that the equipment be decommissioned, replaced, or upgraded. In these circumstances, the installed equipment may be deemed suitable for continued service beyond the assigned lifetime.

4.2 Lifespan Extension

Generally, manufacturers of hydroelectric equipment will specify an operational lifespan for the equipment. This means the period after which the manufacturer recommends it be decommissioned or replaced. Sometimes the lifespan of an installation may be set by other bodies, such as the consenting Local Authority, which may specify, through planning permission conditions, a lifespan of an installation. Unless specified by a statutory body, it is up to the owner to determine the lifespan of the installation ultimately. However, it is recommended to have due regard to the manufacturer's instructions.

4.2.1 Planning

For smaller-scale projects, including those that were exempt from development and those that required planning permission at installation, there will likely not be any specific conditions in relation to the lifespan of the installation. Exempted development installations are only limited by the lifespan of the technology itself. The installation may remain in place for as long as the property owner wishes. For installations that required planning permission for construction, there may be a condition attached in relation to the lifespan of the installation. If there is, this must be complied with; however, if not, the property owner may leave the installation in place according to their own wishes.

Regarding larger-scale projects, it is more likely that lifespan extension will be dealt with by condition, meaning that within the conditions attached to the original planning permission, it will directly set out how to carry out a lifespan extension. Typically, this will specify that further planning consent is required. If there is no specific condition, you may not require planning permission. If you have any doubts whether planning permission is required, you may contact your Local Authority and request a Section 5 Declaration, in which it will be determined if your works are exempt from planning permission or not.

4.2.2 Licences

As project extension entails the use of the equipment for a slightly longer period of time, the licences would fall under the operation and maintenance remit. For further information on operation and maintenance licences, please refer back to **Section 3** of this document.

4.3 Re-Powering

Re-powering means retrofitting and upgrading existing renewable energy installations with better equipment and technology to improve the efficiency of the installation while also allowing for an extended lifespan (given the newer infrastructure installed). This may also necessitate the upgrading of associated ancillary equipment such as transformers or inverters, cables and or substations. For hydropower projects, re-powering would likely see automation control and digitised upgrades, replacing or modernising the generators and turbines. A common goal of repowering with hydric-electric plants is to bring about an increase in the installed capacity and/or output of an existing plant.

4.3.1 Planning

From a planning perspective, it is best to approach considering re-powering hydro power projects as a new project, and so it would be useful to utilise the *SEAI Single Point of Contact Renewable Energy* online tool for guidance, in addition to complying with the planning regulations.

For hydroelectric, re-powering would likely see the replacement of turbines, which would be upgraded to

ones that are more energy efficient, allowing for more energy to be produced using the same volume of water. This may also necessitate the upgrading of associated ancillary equipment such as transformers or inverters.

4.3.2 Licences

With the exception of certain certificates that will likely not require renewal (e.g., disability access certificate- unless the floor plan of the building changes), it is likely that the remaining licences will require renewal or reapplication. It is recommended that you consult with the various granting authorities regarding the re-powering of your project and seek advice as to whether renewal/reapplication is required.

5 Other useful resources

Eastern Regional Fisheries Board Requirements for the Protection of Fisheries Habitat during Construction and Development Works at River Sites: Eastern Regional Fisheries Board (fishingireland.net)

Guidelines on the Construction & Operation of Small-Scale Hydro-Electric Schemes and Fisheries – Consultation Document (2005): june05final.pdf (fisheriesireland.ie)

Irish Hydropower Association: http://www.irishhydro.com/index.html Sustainable Energy Authority of Ireland – Hydro Power Map: https://www.seai.ie/technologies/seai-maps/hydro-power-map/

The Fisheries (Consolidation) Act 1959 (as amended): https://www.irishstatutebook.ie/eli/1959/act/14/enacted/en/html

The Fisheries (Amendment) Act 1999 (N. 35 of 1999): https://www.irishstatutebook.ie/eli/1999/act/35/enacted/en/html

The Freshwater Fish Directive – Council Directive on the quality of fresh waters needing protection or improvement in order to support fish life (78/659/EC) as transposed into Irish law under the E.C. (Quality of Salmonid Waters) Regulations 1988 (S.I. No. 293 of 1988): https://www.irishstatutebook.ie/eli/1988/si/293/made/en/print

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