



An  
Bord  
Pleanála

## Inspector's Report PL08.248070

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<b>Development</b>	Construction of a small hydroelectric scheme and a turbine house connected to a 1.2km pipe.
<b>Location</b>	Slaght, Kilgarvan, Co. Kerry.
<b>Planning Authority</b>	Kerry County Council.
<b>Planning Authority Reg. Ref.</b>	16/1165
<b>Applicant(s)</b>	Rainpower Ltd.
<b>Type of Application</b>	Permission.
<b>Planning Authority Decision</b>	Refuse Permission.
<b>Type of Appeal</b>	First Party
<b>Appellant(s)</b>	Rainpower Ltd
<b>Observer(s)</b>	None
<b>Date of Site Inspection</b>	3 <sup>rd</sup> June 2017
<b>Inspector</b>	Fiona Fair.

## 1.0 Site Location and Description

- 1.1.1. The appeal site, with a stated approx. area of 2.48 ha, is located approx. 2Km north west of Kilgarvan in South County Kerry, north of the R569 regional road and approx. 8 Km to the east of Kenmare. The R569 links Kenmare and Cloonkeen. The surrounding area is of rural upland character and is sparsely populated, with one off housing and agricultural buildings. A piggery comprising numerous pig houses and silos is located approx. 300m from the eastern bank of the Owbeg River directly to the east of the proposed intake weir. There are also extensive wind energy developments visible, further to the north east, from this location
- 1.1.2. The site runs along the western bank of the Owbeg River, which drains into the Roughty River which in turn makes its way to the upper catchment of the Kenmare River which forms part of Kenmare River SAC. The Owbeg River has two impassable falls (Meeting Falls and Nancy Falls) within the proposed scheme area. Meelick Falls is located just upstream at the point of the proposed Intake Weir. The ground level / topography varies from approx. 40 m O.D towards the southern end of the site to 75 m O.D towards the centre of the site.
- 1.1.3. Access to the site is proposed via a local minor road which runs north from the R569 regional road to the site, it forms a junction with the R569 approx. 1.3 Km west from Kilgarvan village. Currently, access can be gained, to the location of the proposed intake Weir, via an existing agricultural field gate. The field through which it is proposed to access the site, at the location of the intake weir and to construct the site compound, comprises, improved agricultural grassland.
- 1.1.4. On my site visit I evidenced wet grassland, degraded lowland blanket bog with sections of gorse, reeds and heath vegetation. There are sections of dense woodland (wet willow, alder, ash, - semi natural broadleaved woodland is also evident incl. Oak/Birch/Holly) and hedgerow throughout the course of the River. In part, the banks of the river are steep along its course and the riparian zone is narrow along the length of the river, the steep terrain parts of the site were impenetrable and flooding was not evident.
- 1.1.5. The Owbeg River is categorised as an Eroding/Upland river. There are several waterfalls along the route. Two points along this river would be affected by the proposed development; the intake point and the outtake point. This river is

considered to be of national importance due to the presence of brown trout (Ecofact, 2012, Inis Environmental Consultants, 2013).

## 2.0 Proposed Development

2.1.1. The proposal comprises permission to construct a 1.2Mw hydroelectric scheme on the Owbeg river. The primary construction elements of the development are as follows:

- Construction of Site Access
- A service / access Road 1.3Km including building compound
- Installation of an underground 1400mm diameter Pipeline 1.2Km
- Construction of water Intake Weir including intake chamber
- Construction of a Turbine House / Power House (141 sq. m) including a water outfall race

2.1.2. It is proposed to abstract / divert part of the Owbeg River, upstream of Meelick bridge at Meelick falls, run it through a 1.2km pipe and pass it through an electric powerhouse (turbine house) before gradually introducing it back into the Owbeg River downstream.

2.1.3. This involves an approx. 30 m long Weir formed from cast in-situ concrete, a self-washing screen, a sluice gate and a motorised gate to ensure that the flood water does not rise more than 150mm above the Weir at a maximum flow of 15 m<sup>3</sup> per second, an Intake System, a Service Road off the Existing Road approx. 1.3Km and a turbine house including a water outfall.

2.1.4. It is stated that the purpose of the small hydroelectric scheme is to generate 1.2 Megawatts / 1200 kilo-watts / 3 million units of electricity per annum, enough electricity to power about 600 Irish homes per year.

2.1.5. It is stated that it would be connected directly to the national grid via the ESB Networks electricity supply system.

2.1.6. The nature of the development requires the construction process to happen in different phases. It is proposed to carry out the work during the summer period when the flow in the Owbeg River is as low as ½m<sup>3</sup> per second. A Construction

Environment Management Plan (CEMP) has been developed to minimise disruption and it is stated that instream works will take place during May to September only, which is outside the Salmonid fish spawning seasons.

#### 2.1.7. Site Access

Site access will be formed from the public road to the proposed location of the water intake point. This would facilitate the passage of materials, equipment and plant. Traffic would be managed at the access point to accommodate restricted sightlines.

#### 2.1.8. Construction Compound Area

It is proposed to strip the peat / topsoil and form a Construction Compound approximately 50m x 50m, this will include Toilets and Offices and Amenities for the Construction Staff which will be approximately 10 people maximum. The peat / topsoil removed from the Compound will be mounded up around the compound to form a barrier with the remainder of the site.

#### 2.1.9. New Site Roads and Drainage Works

Once the Construction Compound is formed the road would be constructed. This road would be approximately 1.3 km long and it is proposed to strip the peat from the top of the underlying ground and mound it up on either side of the road to form embankments and to separate the run-off from the fields from the road. The pipeline will also be laid at the same time as the access road and the excess material from the pipe trench will be added to the embankment mounds on either side of the access road.

There are approximately seven different catchment areas where the run-off from the fields need to cross the access road to enable it to drain into the River. A pipe system has been designed to carry the outflow to the River which will include concrete pipes of different sizes to match the calculated flow. The location of each of these crossings is shown on Drawing PL06 in Attachment 3 of the CEMP. A clean water drainage channel would be installed along the upslope edge of the proposed access road to prevent clean water from entering the construction area, minimising the risk of silt and contamination of water runoff flowing downhill towards the construction area.

The access road would also have a dirty water drain between the road and the mound on the downslope side of the road which will catch the run-off from the road.

The dirty water drain would have silt traps / check dams spaced at intervals depending on the road gradient to catch any silt and to reduce the flow to prevent scouring, protecting the formation of the access road. The drainage channel would flow into settlement ponds prior to discharge.

Once the road is excavated and the drainage is laid, it is proposed to lay approximately 300mm – 500mm of crushed stone over a geotextile membrane to form the access road.

#### 2.1.10. Water Intake

The proposal is to build the Intake Screen near the existing waterfall on the Owbeg River. Under normal flow conditions, the River divides into two sections and creates a waterfall at both of these locations. In between these two locations there is a protruding rock which diverts the flow in this area. It is proposed at the outset to divert the water from the left hand side by building a Cofferdam at the top of the falls. The water at this point is only approximately 200mm deep and it is proposed to drill in 25mm holes into the rock and to install 32mm round steel bars to support timber planking, visqueen and sand bags. This would stop the flow on the left hand side of the falls.

It is then proposed to form a Cofferdam on the right hand channel to stop the flow going down the right hand channel. This means that this section of the works then becomes dry and a further Cofferdam is erected on the lower end to stop any of the River water going backwards up the channel.

When all the works are completed, the Cofferdams would be removed. When the Turbines are being commissioned, the Sluice Penstock would be closed and the water would build up behind the New Dam and Screen which will then allow some of the water to be diverted through the Screen down the new pipeline.

#### 2.1.11. Pipeline

The 1400mm diameter pipe which connects the water intake to the turbine house would be laid as part of the road construction and backfilled as the road proceeds from the site entrance to the turbine house. The crown of the 1400mm diameter pipe would be laid approximately 1 metre below the existing ground level which will allow all of the existing land drains and streams to flow over this pipe and drain naturally once again to the River. The excess material from the construction of the access road and the pipe would be mounded on each side of the road to form a natural

barrier between the construction site and the existing land. These mounds would be grassed and resewn to ensure they remain stable.

#### 2.1.12. Turbine House

The turbine house would be accessed by the new access road. The level of the turbine house would be above the level of the River, but the water race from the turbine house would be constructed at the same level as the invert of the River.

The following reports and documents were submitted with the application:

- An Ecological Impact Statement (EIS) (Nov. 2016)
- Natura Impact Statement (NIS) (Nov. 2016)
- Effects on Human Beings Report
- Hydrology Report (June 2016)
- Hydrology Overview Report (September 2014)
- Two Fish Survey Reports (2012 & 2014)
- Archaeological Impact Assessment including a pre-development archaeological testing report and metal detector survey of the river areas of the proposal. Archaeological Test Trenching (May 2016)
- Construction Environmental Management Plan (CEMP)
- Five letters of consent from landowners
- Certificate of Incorporation, dated Nov 2011.
- Letter from IFI dated 22 October 2015.

### 3.0 **Planning Authority Decision**

#### 3.1. **Decision**

Planning permission was refused for two number reasons, summarised as follows:

1. Proposal would result in a high risk to water quality of the Owbeg River.  
Therefore, the development would be contrary to Objective NE-15 of the Kerry County Development Plan 2015 – 2021 and would contravene the EU Water Framework Directive.

2. The p.a. is not satisfied that the proposed development would not have a negative impact on water quality of the Owbeg River and on habitats / species in the environs of the proposed development, a number of which are Annex II species including salmon. The proposed development would be contrary to Objective NR-23 of the Kerry County Development Plan 2015 – 2021, which states that it is the objective of Kerry County Council to 'support the protection of water quality, key habitat and other natural resources requirements necessary to safeguard coastal, estuarine and freshwater fisheries.'

### 3.2. Planning Authority Reports

#### 3.2.1. Planning Reports

3.2.2. **The Planners Report** sets out that environmental issues are of concern based on the negative report from the Environment Department. The AA screening report concludes that the potential for significant effects to Natura 2000 sites cannot be ruled out. The report recommends a 'refusal of permission in this case due to a high risk of negative impact on the current water quality of the Owbeg River'.

3.2.3. **County Archaeologist:** No objection

3.2.4. **Environment Section:** Recommends Refusal of the proposed development due to a high risk of negative impact on the current water quality of the Owbeg River.

3.2.5. **Bio Diversity Officer:** Further information requested with respect to (i) how dewatering would be undertaken and measures to manage water on site, (ii) the EclA lists several mitigation measures which will be in agreement with IFI or 'should be' undertaken. This is not sufficient. All details of the project should be in agreement with IFI and provided in the application (iii) monitoring procedures (iv) signs of Otter use (v) further detail required of bryophyte survey.

3.2.6. Other reports:

3.2.7. **HSE:** Report sets out no observations or comments.

3.2.8. **Inland Fisheries Ireland (I.F.I):** Requests Additional Information with respect to: (i) Intake / River Weir and Compensation notch (ii) water return point at power house (iii) provision for flush flows (iv) Flow monitoring (v) Cement wash sites.

- 3.2.9. **An Taisce:** Report sets out that the river is important for angling and it is essential that no water pollution arises from the proposed development or that fish mortality occurs because of fish entering the turbines. All proposed mitigation measures should be included as planning conditions and strictly adhered to. The catchment of the Owbeg is close to Mangerton Mountain, which is one of the wettest places in Ireland. The scheme should be designed to cope with exceptionally high rainfall events, which appear to be becoming more common due to climate change.
- 3.2.10. **Inspectors Note:** An Bord Pleanála Requested reports from the Development Application Unit – ‘Department of Arts, Heritage, Regional, Rural and Gaeltacht Affairs’ and The Heritage Council. No reports were forthcoming.

### 3.3. **Third Party Observations**

A number of objections were submitted to the planning authority. Concerns raised are summarised as follows:

- Loss of views
- Health and safety, deep water
- Visual Impact
- Negative impact upon residential amenity
- Negative impacts upon fish stocks and rights of way
- Negative impact upon livestock
- Negative impact from construction phase
- Flooding and drainage concerns
- Negative impact upon landscape and erosion of natural habitats

## 4.0 **Planning History**

- 4.1. **Reg. Ref. 14/803** Application Withdrawn following a request for A.I. Permission was sought for the same development as currently proposed, by Rainpower Ltd.

Adjoining Planning History of relevance to the east of the appeal site



- 4.2. **PL08.243129 / Reg. Ref. 13/790** Ten year Permission Refused (2014) for development of a wind farm consisting of 9 no. turbines and ancillary works approx. a Km to the east of the subject appeal site within the Mangerton Mountain and Owbaun River Valley Landscape Character Area. An EIS and NIS included. Townlands of Derrincullig, Cappanlivane, Curraglass South
- 4.3. See Appendix attached to this report for a summary of five hydroelectric power schemes of similar nature and scale dealt with by An Bord Pleanála, date back to early 2000.

## 5.0 Policy Context

### 5.1. The Guidelines on The Planning, Design, Construction and Operation of Small-Scale Hydro-Electric Schemes and Fisheries

These Guidelines were published jointly by the Central and Regional Fisheries Boards and the Department of Agriculture, Fisheries and Food in 2006

Their principal purpose is to give guidance for the operation of new small-scale hydro schemes from a fisheries perspective and are referred to in the Kerry Renewable Energy Strategy 2012. Applicants are advised to have regard to the Guidelines.

They also include chapter headings on

- Current legislation covering fish passage and hydro-electric developments in Ireland
- Types of small hydro schemes
- The application process for hydro-electric schemes
- Potential effects of small hydro-electric development on fisheries and
- Review of current operation of small-scale hydro-electric schemes.

On the types of small hydro schemes, the Guidelines note that there are two main types of small hydro schemes operating in Ireland, namely, low head and high head. It is noted that traditionally, low head run of the river schemes were located in lowland areas, abstracting water from rivers through the use of weirs with diversion of river flow to a headrace and from there to a turbine house. Water is returned to the river downstream of the turbine through a tailrace. Generally, the head is less than 5 metres in such schemes and they have little impoundment or provision for storing water. As the head is low, compared to high head schemes, the volume of water

used per unit of power is high. Such schemes are generally designed to use the long-term mean flow of the river when on full load. It is noted that in many rivers, especially spate rivers, the long-term mean flow can be ten or more times the dry weather flow. Modern turbines can operate efficiently with flows as low as quarter or less of their full load design flow and can thus keep running over a large range of flows. This has obvious implications for fish passage.

On the application process for hydro-electric schemes, the Guidelines quote the threshold set in the European Communities Environmental Impact Assessment, Amendment Regulations, 1999 which specify hydro-electric plants with an output of 20 megawatts or more, or where the new or extended superficial area of water impounded would be 30 hectares or more, or where there would be a 30% change in the maximum, minimum or mean flows in the main river channel. As most small-scale hydro schemes would have an output well below 20 megawatts and might not impound any water, it is the change in 30% of mean river channel flow that is likely to occur and give rise to a requirement for an EIA. Notwithstanding the threshold set out in the Regulations, the Guidelines hold that because of the considerable potential negative impact of hydro-electric development on fisheries and the environment that an Environmental Impact Assessment should be prepared for all proposed developments. If the competent authority does not see the need for a full EIA, then an Environmental Appraisal should be undertaken. In relation to the scoping stage of the EIA process, it is noted that hydro schemes would require baseline studies, particularly in relation to the fisheries resource, fish migration and flow, habitat, and the efficacy of fish passes where present.

On the potential effects of small hydro-electric development on fisheries, it is noted that in low head schemes, the volume of water being diverted from the main channel may be large relatively to total flow and may reduce the residual flow in the natural channel to such an extent that there is habitat loss and floral and faunal communities and native fish populations are severely affected.

There may be disruption of food webs downstream, the drying out of redds (spawning beds) or egg masses, stranding of fish and siltation of spawning gravels due to the absence of high flows. Water temperature regimes are also important with respect to egg development and hatching rates and as a cue for fish migration, so that any changes may disrupt these processes. The Guidelines note that downstream migrants – smolts and kelts tend to be attracted to the main flow, which,

in non-flood conditions and during power generation, may be towards the headrace intake. Fish impingement can take place on intake screens, causing injury or mortality. Passing through the turbine can have the same effect. Delays in smolt migration above weirs and dams may increase mortality due to predation. Similarly, upstream migrants may linger at or be attracted into the tailrace when the flow rate is more attractive than that down the natural channel. This can delay upstream migration and leave the fish more vulnerable to poaching. Fish held up in high numbers during periods of high temperature are at risk of disease outbreaks. The Guidelines note that fish damage occurs when fish pass through turbines (Section 5.4.1) but only Francis and Kaplan turbines are specifically mentioned and there is no reference to the Archimedes screw type. Chapter 7 of the Guidelines proposes three types of location as suitable for new small-scale hydro-electric schemes. These are those upstream of impassable falls, high head locations at rapids/falls where upstream migration exists and low head schemes where there is an existing weir/millrace. This last type is noted to have traditionally operated in daylight hours and to have had a much lower water demand than modern hydro power turbines. Where it can be demonstrated that development of modern small-scale hydro power will provide/improve fish passage and have no fisheries impact, these locations may be considered. They are unlikely to impact on the fisheries environment if fish passage through the depleted stretch is not compromised, if compensation flow is adopted for Category 2 or Category 3 rivers, if additional flow provisions are provided to maintain angling quality where the length of depleted stretch is significant and angling is important within it and if there is no deterioration in water quality downstream resulting from the development. (Category 2 rivers are defined as river channel sections that include an impassable barrier, but within which fish movement is possible. Category 3 rivers are defined as river channel sections where there is internal fish movement within the depleted stretch, where there is spawning and nursery potential and where there is also fish movement through the stretch).

The Guidelines recommend that a rigidly barred screen, barred vertically at 38 millimetre intervals should be placed across the mouth of a tailrace to avoid fish being lured into a cul-de-sac where they might linger until turbine flow ceases. The Guidelines contain performance guidance in relation to the provision of an electric barrier which might be provided in exceptional circumstances where an exemption is

granted under Section 123 of the Fisheries (Consolidation) Act, 1959. Smolt screens with 10 millimetre bar spacing's should be placed at the point of divergence to a headrace to prevent entry of fish and to divert smolts down the natural channel. With due allowance for blockage of screens by debris, the approach velocity at smolt screens should not exceed 0.3 metres per second. Smolt screens should be at the point of divergence from the river and should, where feasible, abstract water at 90 degrees to the main river flow so as to help to lead downstream migrating fish along the face of the screens towards the fish pass intake or bypass. The screens should be of sufficient area to ensure that when the station is on full load, the velocity of approaching water is low enough to avoid any risk of smolts or other small fish being impinged. Where smolts are allowed down a headrace, they must be prevented from passing through the turbine by means of a screen which would safely divert them via a bypass and return system to the natural channel. This should be at least 225 millimetres wide and have a minimum depth of flow of 150 millimetres.

Guidance is given on residual flow. Base Compensation Flow is the minimum compensation flow rate stipulation, i.e. it is the minimum flow that should be provided to the depleted natural river channel when abstraction is taking place. In Category 2 and Category 3 rivers abstraction should not exceed half of the available flow and this limitation applies in combination with the base compensation flow stipulation. For Category 2 rivers there should be a compensation flow provision of 12.5% of the long-term mean flow ( $Q_m$ ) or 50% of the available flow upstream of the intake point, whichever is the greater. The guidelines make the same stipulations for Category 3 rivers, but in addition, make further recommendations. The guidelines define Category 4 rivers as those with river channel sections of high fisheries value where the impacts of a proposed hydro scheme development would be unacceptable from a fisheries perspective. These occur where it can be demonstrated that an important angling stretch is located in the area of the proposed scheme or where the proposed scheme is located in very important spawning and nursery areas for salmonids, coarse fish or lamprey in the context of the specific catchment. These locations are deemed to be particularly sensitive to any alteration in the flow regime in the natural channel.

Under the subheading "Guidelines on Fish Passage Through Turbines", the guidelines repeat that experience has shown that fish passage through turbines infers a mortality factor on migrating salmon smolts and other fish species and states

that for new hydroelectric developments, it is critical that details relating to intake screening and fish passage are included at the design stage and fish are not allowed to pass through turbines.

5.2. **EU Water Framework Directive (2000/60/EC)** which seeks to maintain and improve water quality in rivers, lakes and coastal regions.

5.3. **South Western River Basin Management Plan 2009 – 2015**

5.4. **Inland Fisheries Ireland “Guidelines on Protection of Fisheries During Construction Works In and Adjacent to Waters”**

5.5. **Development Plan**

5.5.1. The site is governed by the policies and provisions contained in the Kerry County Development Plan 2015-2021.

The appeal site is zoned ‘Rural General’ in the County Development Plan 2015-2021. Section 3.3.2.1 of the Plan is of relevance. It states that such areas constitute the least sensitive landscapes throughout the County and from a visual impact point of view have the ability to absorb a moderate amount of development without significantly altering their character.

Chapter 12 of the CDP deals specifically with Zoning and Landscape Policy  
Its Aim is; ‘To support and provide for the sustainable development of indigenous energy resources, with an emphasis on renewable energy supplies, in the interests of economic progress and the proper planning and sustainable development of the county’.

5.5.2. The following Objectives of the CDP are of relevance:

“HP1 - The Planning Authority will support the development of hydro power developments in appropriate locations where proposals comply with the requirements and development standards set out in Chapter 11 and the provisions of the Kerry County Development Plan 2009-2015.”

“HP2 The Planning Authority will support the development of small scale hydro energy plants in appropriate streams and rivers where proposals comply with the requirements set out above, the recommendations contained in the “Guidelines on the Planning, Design, Construction and Operation of Small Scale Hydro-Electric

schemes” published by the Central Regional Fisheries Boards, the requirements and development standards set out in Chapter 11, and the provisions of the Kerry County Development Plan 2009-2015.”

EP-1 & EP-3 & EP-11 ‘Implement the Renewable Energy Strategy for County Kerry

Chapter 10 deals with Natural Environment & Flood Risk Management

Section 10.3.1 lists discharges from waste water treatment plants and agriculture as the two most significant impacts on water quality in County Kerry.

Objective NE-15: “Achieve water quality targets by implementing the River Basin Management Plans (and associated programmes of measures) and to ensure that development undertaken or permitted by local authorities; other public agencies or private operators, shall not contravene the objectives of the Water Framework Directive, the European Communities Environmental Objectives (Surface Waters) Regulations 2009 SI 272 of 2009 and the European Communities Environmental Objectives) Groundwaters) Regulations 2010, SI 9 of 2010.”

Chapter 8 Deals with Natural Resources

Objective NR-23 of the Kerry County Development Plan 2015 - 21, which states that it is the objective of Kerry County Council to “support the protection of water quality, key habitat and other natural resource requirements necessary to safeguard coastal, estuarine and freshwater fisheries”.

Chapter 12 Transport and Infrastructure deals with Energy / Power Provision

- 5.5.3. The Council adopted the 8th variation to the County Development Plan 2009-2015 on November 5th 2012. This incorporated a Renewable Energy Strategy into the development plan and replaced the earlier policies and maps relating to renewable energy. The variation also incorporates a landscape character assessment prepared for the renewable energy strategy and adopted / proposed archaeological landscapes.

- 5.5.4. The following Objectives and sections of the Renewable Energy Strategy are of relevance; relevant excerpts are attached as appendix to this report.

NR 7 – 21

Objective NR 7 – 26

Section 7.4.6 Hydro Power

7.4.6.3 Run-of-the-river

Objective’s NR 7 – 39 - Objective NR 7 - 43

## 5.6. Natural Heritage Designations

- 5.6.1. There are a number of protected areas within 10Km of the proposed site including the Kenmare River SAC, Kilgarvan Ice House SAC and pNHA. Kilgarvan Wood pNHA. Glanlough Woods SAC. Killarney National Park, Macgillycuddy's Reeks and Caragh River SAC and Roughty River pNHA. Of these, only two may potentially be impacted by the proposed development: The Kenmare River SAC and the Kilgarvan Ice House SAC and pNHA
- 5.6.2. Although the site is not within a designated area of conservation the drainage onsite forms the upper catchment of the Kenmare River which is designated as part of the Kenmare River SAC located approx. 9.8Km to the south west.

## 6.0 The Appeal

### 6.1. Grounds of Appeal

The issues raised within the first party appeal by Rainpower Ltd. have been collated under the following headings:

#### 6.1.1. Water Quality and Sensitive Habitats

- Revised engineering design measures and implementation of site drainage management plans outlined in the CEMP will ensure that construction works would not result in a high risk to water quality.
- Pollution to water has been designed out of the construction works, esp. at the location of the proposed intake Weir.
- The intake Weir will be constructed by utilising the existing presence of two separate water channels at this location.
- It is proposed to form two coffer dams on either side of the river, in stages, one on the left hand side first to stop the flow and put the weir in place. This section of the works then becomes dry and a further coffer dam be erected on the lower end to stop any of the river water going backwards up the channel.

### 6.1.2. Site Drainage Management Plan and Protection of Water Quality

- A detailed site drainage plan and design will be implemented on site through the adoption of the measures listed in the CEMP.
- The purpose of the CEMP is to identify the key mitigation and environmental control measures specific to the construction of the scheme
- Road Drainage Infrastructure
  - There are approx. 7 different catchment areas where the run off from the upland sections of the site needs to cross the proposed access road to enable it to drain into the river.
  - The run off from these areas has been calculated and a pipe system designed to carry this run off to the river
  - The 1400mm diameter pipe which connects the water intake to the turbine house will be laid as part of the road construction and backfilled as the road proceeds from the entrance compound to the turbine house.
  - The crown of the pipe will be laid approx. 1m below the existing ground level resulting in a total trench depth of 2.4m bgl.
  - The depth of the pipe will allow existing drains and streams flow over this pipe and drain naturally one again.
  - A sectional approach of 20 – 25m will be carried out when putting the pipe line in place.
  - Siltation of watercourses will be minimised using settlement ponds and the implementation of clean and dirty water drainage channels.
  - Frequent observations and water quality monitoring
  - All settlement ponds will be monitored on a daily basis
  - A clean water drainage channel will be installed along the upper edge of the proposed access
  - The access road will also have a dirty water drain between the road and the mound on the downslope side of the road.



- Erosion control and attenuation facilities, namely sediment / silt traps and settlement ponds will be regularly maintained during the construction phase.

#### **6.1.3. Silt Fences**

- Will be installed along drains and parallel to access road edges as required
- Field monitoring of water quality parameters and collection of samples will be undertaken by site environmental officer and ecologist.

#### **6.1.4. Soil Management**

- Measures outlined in the CEMP shall be adhered to as a minimum in terms of drainage for spoil management areas to avoid deterioration of nearby surface water quality.
- During the construction phase the effectiveness of drainage measures designed to minimise runoff entering works areas and capture and treatment of potentially silt-laden water from the works areas will be monitored periodically
- The site environmental officer will respond to changing weather and drainage conditions on the ground as the project proceeds.

#### **6.1.5. Settlement Ponds**

- 7 settlement ponds will be constructed
- Consideration will be given to retention of the settlement ponds as permanent ponds in the post construction phase should they be deemed to provide ecological and habitat benefit for the site.
- Construction waste materials such as generated silts and gabion baskets will be removed and disposed of in an appropriate manner before any pond is left as permanent.
- Ponds shall be constructed as early in the scheme as possible.

#### 6.1.6. Control Measures

- Detailed construction method statements and risk assessments shall be prepared in advance of all construction activities.
- Construction works on site will be timed to occur outside of periods where very heavy rainfall would be expected where possible.
- A formal procedure to deal with queries and comments will be included in the emergency response plan for the site.
- A facility to shut off the outfall from settlement ponds during an emergency will be provided.
- An environmental audit will be undertaken
- Construction works will cease if decrease in water quality becomes evident
- In stream works will take place during the months may – sept (inclusive) outside of salmonid spawning season
- Acidic, metal or sulphide-rich spoil / aggregate for carriageway construction will not be used.

#### 6.1.7. Geotechnical Findings

- A ground investigation was carried out – comprised 11 number trial pits and peat depth probes to depths of up to 3m bgl.
- No ground water was encountered in 5 of the 11 number trial pits (TP3, TP4, TP5, TP10 and TP11) Ground water was noted between 1.9 and 3.0m bgl in the remaining trail pits (TP1, TP2 and TP6 – TP9). However, the groundwater inflow rate in these pits was typically recorded as slight to moderate seepages.
- The potential to strike groundwater will only occur during pipeline construction where trench depth will be 2.4m bgl, thus leaving a possible water depth of 0.5m to be managed, and potentially at the location of the turbine house.
- Based upon findings, any perched groundwater encountered along the pipeline route shall be pumped out using submersible pumps and diverted

to dirty water drainage channels and settlement ponds installed along the access road, or via tanks and settlement ponds.

- No karst features were identified on the site; the area is classified as having low ground water vulnerability.
- The proposed development supports the water quality protection aims of policy NE-15 of the Kerry CDP 2015 – 2021 with the implementation of the engineering design approach, mitigation measures, environmental controls and in the CEMP. Water quality in the Owbeg River will not be adversely impacted
- Section 10.3.1 of the CDP lists discharges from waste water treatment plants and agriculture as the two most significant impacts on water quality in County Kerry, as opposed to the development of a hydroelectric scheme which will produce no waste effluent.
- There would be no impact upon water quality during the operational period.

#### **6.1.8. Environmental Monitoring**

- Rainpower Ltd will be monitoring environmental performance on a continuous basis
- A formal environmental audit will be undertaken on an on-going basis.
- A programme for water quality monitoring and collection of samples will be undertaken by the site environmental officer and ecologist to protect and maintain water quality.

#### **6.1.9. Surface water quality**

- To be monitored during the construction phase and this monitoring will also extend into the post construction phase. The proposed monitoring locations for the construction phase are as follows:
  - Turbidity spot checks at settlement pond outfalls
  - Grab sampling at locations along the Owbeg River
  - Continuous turbidity monitoring at sampling locations.

- Water quality monitoring will be undertaken before, during and after the construction phase of the River Owbeg on a monthly basis to include field hydro chemical analysis for pH, turbidity, temperature, electrical conductivity and dissolved oxygen.
- The monitoring system will measure Q-values, suspended solids, molydate reactive phosphorus & pH on the Owbeg River upstream and downstream.
- Weekly visual inspections of the mitigation infrastructure are envisaged for the duration of the construction period.
- The duration of monitoring will be carried out for a period to be agreed with Kerry County Council.
- No significant impacts on water quality are predicted for the construction and operation phases of the Scheme.

#### **6.1.10. Proposed water Quality Monitoring Programme**

- Biological water quality assessment
- Suspended solids, turbidity, molydate reactive phosphorus and pH
- Fish Assessment before commencement and after completion of construction phase
- Visual Inspection for oil sheen / suspended solids

#### **6.1.11. Mitigation Measures**

- Mitigation measures relating to the protection of water quality in the Owbeg River and habitats / species in the environs of the proposed development, which are proposed within section 6 of the EclA were devised in consideration of the following:
  - EPA (2002) 'Guidelines on the information to be contained in EIS's'
  - EPA (2003) 'Advice notes on current practice in the preparation of EIS'.
  - Water Framework Directive (2000/60/EC)
  - South Western River Basin Management Plan 2009 – 2015

- Kerry County Development Plan 2015 – 2-021
  - Geological Survey of Ireland, County Kerry Groundwater Protection Scheme
  - UK Pollution Prevention Guidelines (PPG)
  - Inland Fisheries Ireland ‘Guidelines on protection of Fisheries During Construction Works in and adjacent to waters’
  - Forestry Service, Department of Marine and Natural Resources (2000) ‘Forest harvesting and Environmental Guidelines.’
  - CIRIA (2001) ‘Control of water pollution from construction sites. Guidance for Consultants and Contractors’
  - The appraisal also takes into account of ‘Guidelines for Ecological Impact Assessment in the United Kingdom’
  - Guidance published by the NRA
- The Proposed development is not contrary to NR-23 of the Kerry County Development Plan 2015 – 2021
  - Provision of an on-site ecological clerk of works
  - Mitigation measures will be successfully implemented ensuring that the water quality and fisheries within the Owbeg River and the species / habitats in the environs of the proposed development are protected without doubt and preserved at a favourable conservation status.

**6.1.12. The Appeal is accompanied with a document which lists all comments, observations and requests for further information raised by KCC, IFI, An Taisce and Lakes and Rivers of Kerry and discusses how each point has been addressed. I note points of interest not already covered above.**

- Bryophytes were not recorded to species level
- A survey will be repeated using the same methodology in the same locations after one year of operations.
- The Otter are a ubiquitous species throughout Ireland, it was not deemed necessary to revisit the Otter sites recorded

- The ecological monitoring is based upon the precautionary approach; any disturbance / displacement is considered to be a temporary minor negative effect.
- Any significant change in water level regime as a result of this proposal is considered highly unlikely and hence impacts on bryophytes are considered to be insignificant.
- A map of the 17 survey sections, in addition to photos of each of the sections is available in Appendix A and B respectively, of the updated Bryophyte Survey (Appendix iv of the EclA)
- The developer accepts the provision of flush flows at specific times following low flow events or where continuous abstraction maintains a compensation flow only in river.
- Once generation commences and only compensation flow is available to the river there should be a 12 hour shut down every 7 days
- When full capacity generation with weir overtopping occurs shut down can cease and then be reactivated
- Graduated staff will be provided at a location above the intake. The developer agrees to provide information on the flow through the turbine (This will be available from powerhouse telemetry)
- The proposed compensatory flow will be suitable for fisheries requirements (as stated by the IFI in an email dated 10<sup>th</sup> August 2016 presented in Appendix 11 of the EclA)
- The motorised gate is a radial gate whose function is to regulate the water it is not a dam.
- There is no fish passage by migratory salmonids at the propose location of the hydro station. Salmon and sea trout are restricted to the lower reaches of the Owbeg River and migratory fish will not be affected.
- A Conada screen with a 2.5mm spacing will exclude all fish from entering the pipeline.

- The proposed development is not located within an area of special amenity, either primary or secondary and is not located near or adjacent to listed views and prospects.
- A stage Two AA was completed. The assessment concluded that potential for significant indirect impacts exists, however with the implementation of the proposed mitigation measures, it is concluded that the proposed development will not result in any impacts that will adversely affect the Kenmare River SAC, having regard to the sites respective conservation objectives.
- Detailed Ecological Impact Assessment concludes that the proposed scheme on the Owbeg river would not have any significant residual impacts on fish assuming water quality is protected.
- Majority of the scheme is located underground and will present no impacts on the local landscape and visual setting.
- The power house will be the only visible element of the proposed scheme – designed to appear as a farm shed with corrugated iron sheets 8.2m in height with barrel roof.
- Secure boundaries will be put in place to prevent unauthorised access.
- No right of way would be affected, the developer owns lands adjoining Meelick Bridge and has a right of way over this now partially disused roadway. The on-site survey did not record any red squirrel signs within the study area.
- All habitats are of low or high local value only, with the exception of the eroding / upland river and Bryophytes.
- Without mitigation the impact upon habitat is evaluated as moderate negative.
- The scheme is designed to cope with a 100-year flood. The developer's calculations show that any rise in water would be contained in bank. The Fluvio Flood Report in Appendix 8 is based upon 2.5, 10 and 100-year flood events. The developer has taken the report recommendations in to the design. The new motorised gate will now only be used, to its full capacity, in a 100-year flood event.

#### 6.1.13. **The Appeal is accompanied with:**

- Appendix 4 Correspondence from IFI
- Appendix 5 Amended Construction Method Statement dated 17<sup>th</sup> Feb 2017 Ecological Impact Assessment dated February 2017. Ecological Impact Assessment Appendices:
  - Appendix I - Evaluation of Ecological Importance and Assessment of Impact Significance
  - Appendix ii - Consultation Response
  - Appendix iii - Electrofishing Report 2012
  - Appendix iv - Electrofishing report 2013
  - Appendix v - Low Water Fisheries Assessment 2014
  - Appendix vi- Bryophyte Survey
  - Appendix vii - Hydraulic Flow Report
  - Appendix viii - Construction Environmental Management Plan
  - Appendix ix - Habitat Maps

#### 6.2. **Planning Authority Response**

- Response received, includes CD copy of application submitted to the p.a. and copy of preplanning record dated 26/10/2012, no further comments forthcoming.



## 7.0 Assessment

I consider the key issues in determining this appeal are as follows:

- **Principle of the Development on the Site**
- **Environmental Issues**
  - **Site Sensitivities**
  - **Requirement for Environmental Impact Assessment (EIA)**
  - **Risk to Water Quality**
  - **Impact Upon Ecology**
  - **Impact on Fish**
- **Appropriate Assessment**

### 7.1. Principle of the Development on the Site

- 7.1.1. The site is governed by the policies and provisions contained in the Kerry County Development Plan 2015-2021. The Renewable Energy Strategy 2012 is of relevance, adopted as a variation to the County Development Plan 2009-2015. It is National and European Policy to promote and develop renewable energy.
- 7.1.2. The appeal site is zoned 'Rural General' in the County Development Plan 2015-2021. In assessing renewable energy projects, the Planning Authority will have to balance National Policy and the benefits of developing renewable sources of energy with the potential impact of these forms of development on the landscape and the amenities of residents in the locality. Kerry has many suitable locations for hydro-electric schemes. Hydro-electric schemes, however, may also visually impact on the landscape, have geological impacts, impact upon ground water and impact on terrestrial and freshwater ecology. It is a requirement of the Council that any proposal for hydro power generation sites will be required to address issues such as fish passage, fish protection / grating: retention of natural watercourse levels and water quality.
- 7.1.3. Section 7.4.6.3 of the Kerry 'Renewable Energy Strategy, 2012, relates to 'run of the river' Hydro Power Schemes. Section 7.4.6.6 sets out Environmental Impacts,

section 7.4.6.7 sets out 'Water Framework Directive (WFD) and section 7.4.6.8 sets out pertinent details of 'Small Scale Hydro Electric Schemes and section 7.4.6.9 sets out 'Location', excerpts of relevant sections are attached as appendix to this report. The proposed scheme is not located within any of the six designated 'particularly sensitive water catchments' where hydro power developments will not be permitted - Objective NR 7 – 42 refers (designated under the EC Environmental Objectives (Freshwater Pearl Mussel) Regulations, 2009, in response to significant pearl mussel populations). The proposed scheme is also not located in a Natura 2000 site or within a designated or pNHA.

- 7.1.4. Objective NR 7 – 39 states that the 'The planning authority will support the development of hydro power developments in appropriate locations where proposals comply with the requirement and development standards set out in the Kerry County Development Plan 2009 – 2015. This will include requirements and considerations in relation to: landscape, cultural heritage, Natura 2000 sites and the Habitat & Birds Directive: the objectives of the Water Framework Directive; Flood Directive: and electricity infrastructure.'
- 7.1.5. Regard being had to Objectives NR7 – 39 to NR7 – 43, I do not disagree that, the principle of a small run of the river hydro power station on the Owbeg at the location proposed is acceptable, subject to compliance with the requirements and development management standards, set out in the Renewable Energy Strategy and the Kerry County Development Plan 2015 – 2021.
- 7.1.6. However, the principle of the development on this site needs to be balanced against the risk to water quality and ecology of the Owbeg River, Objective NE-15 and Objective NR-23 of the Kerry County Development Plan 2015 – 2021 refers. The p.a. is not satisfied that the proposed development would not have a negative impact on water quality of the Owbeg River and on habitats / species in the environs of the proposed development, a number of which are Annex II species including Salmon.
- 7.1.7. Having considered all technical reports on file and given that an EIS was deemed appropriate by An Bord Pleanála and requested in accordance with article 109(2) of the 2001 Regulations and section 132 of the Planning and Development Act, 2000, to which I note no response was received within the six-month timeframe given. This is discussed in detail below under 'Requirement for EIA' section of this report.

Overall I am of the considered opinion that the planning authority have acted reasonably, in order, to comply with the development standards and requirements set out in the Kerry County Development Plan. I intend to further comment and assess these matters in the succeeding sections of this report.

## **Environmental Issues**

### **7.2. Site Sensitivities**

- 7.2.1. The development site lies on the western side of the Owbeg River on the extreme lower foothills of Mangerton Mountain, approximately 2 km to the northwest of Kilgarvan village. The site comprises mainly upland shallow blanket peat/peaty topsoil and agricultural grazing land. As the landuse of the site is a manmade working landscape, it can be considered as a highly modified habitat and therefore not of conservation value.
- 7.2.2. The ecological assessment prepared for the site indicates that there were no rare, threatened or legally protected plant species occurring within the site.
- 7.2.3. The proposed hydropower station is not within any designated area of conservation. However as mentioned above, the site drains to the River Owbeg, a tributary of the Kenmare River which is included in the Kenmare River SAC (Site Code 002158).

### **7.3. Requirement for EIA**

#### Development for the purposes of Part 10

- 7.3.1. The development falls under Class 3(h) 'Energy Industry' of Part 3 of Schedule 5 'Development for the Purposes of Part 10' as per the Planning and Development Regulations 2001, as amended. It is also affected by Class 10(d)(d) 'Infrastructure Projects' of Part 3 of Schedule 5.
- 7.3.2. Class 3 (h) states:
- 'Installations for hydroelectric energy production with an output of 20 megawatts or more, or where the new or extended superficial area of water impounded would be 30 hectares or more, or where there would be a 30 per cent change in the maximum, minimum or mean flows in the main river channel'.
- 7.3.3. Class 10 (d)(d) states:
- 'All private roads which would exceed 2000 meters in length'

- 7.3.4. A detailed description of the proposed development and list of reports and documents submitted is set out in section 2.0 of this report.
- 7.3.5. While it is acknowledged that the scale of the hydroelectric scheme is small with a predicted output of 1.2 Mwh per annum, that the new area of water impounded would be less than 30 ha, and that ecological, hydrological, archaeological and environmental reports and supporting documentation has been submitted with the planning application, the applicant has not addressed the third statutory requirement of Category 3 (h) of Part 3 of Schedule 5 in terms of whether there would be a 30 per cent change in the maximum minimum or mean flows in the main river channel.
- 7.3.6. From an assessment of similar scale and nature hydro power schemes, see analysis attached in Appendix to this report, it appears that EIA was carried out and EIS's were submitted in tandem with such planning applications. I note in particular two 'run of river' hydro power schemes PL08.131144 / Reg. Ref. 84/02 and PL08.130119 / Reg. Ref 3566/01 which are of similar nature and scale to the subject proposed development.
- 7.3.7. The applicant submits that a compensation flow of the scheme has been agreed i.e.12.5% of the AAF (Annual Average Flow) =212.5L/sec, with Inland Fisheries Ireland (IFI). This is acknowledged in the report on file from IFI, dated 5<sup>th</sup> January 2017. Compensation flow refers to the minimum flow of water to be maintained at all times in the natural river channel. The residual flow is the (varying level of) flow remaining in the river when abstraction is taking place. I also highlight that IFI have addressed issues with regard to water level and screening arrangement at the water return point at the power house, provision for flush flows; following low flow events or where continuous abstraction maintains a compensation flow only in the river and to need for delayed start up following a period of low flow, or where only compensation flow is available to the river there should be a 12 hour shut down every 7 days. Nonetheless IFI have requested further information as part of the operation of the scheme, with respect to: (i) Intake / River Weir and Compensation notch (ii) water return point at power house (iii) provision for flush flows (iv) Flow monitoring (v) Cement wash sites.
- 7.3.8. From my assessment of Fluvio Limited 'Hydraulic Report', June 2016, and the Fluvio Limited report 'Design of weir crest level for the Nancy Falls hydro project', February

2017, there is no critical details of 10 percentile, 50 percentile, 90 percentile and dry weather flow of the Owbeg River provided. It is submitted that detailed flow in the Owbeg River has been carried out since the previous application (Reg. Ref. 14/803) and that the compensation flow was decided following a meeting on site with SWRFB on the 8<sup>th</sup> of Sept 2015 and determining the water level on that day in the Owbeg River at Melic Bridge downstream of the proposed hydro intake. It is noted that the EclA report concludes that potential impacts from water abstraction in general on the aquatic environment are evaluated as minor negative.

- 7.3.9. Reductions in flow can influence water temperature, dissolved oxygen can result as an effect of water being passed through turbines, I note, also, that where water pollution is concerned, interest is more often centred on low flow of a more common occurrence. The measure of low flow is sensitive to the length of record. Flow records for the Owbeg may be available from the EPA. The onus is on the applicant to clearly demonstrate flow records over an appropriate time period, hydrology and hydrography of the river channel and that the proposed scheme would not have an undesirable and unacceptable negative impact upon its receiving environment.
- 7.3.10. I am of the opinion it is appropriate that 'Run of River' schemes address the test of Category 3 (h) 'Energy Industry' of Part 3 of Schedule 5 '*Development for the Purposes of Part 10*' and specifically whether there would be a 30 per cent change in the maximum, minimum or mean flows in the main river channel. The intake pipe size at 1400mm is considerable. I am not satisfied that the proposed development would not be likely to have significant adverse impacts on the environment based upon lack of information in respect of rate of extraction and impact upon the river channel, in particular for the 1.2 Km stretch of the River directly affected.
- 7.3.11. I highlight, that, through the new proposed private access road falls short of the 2000m requirement under Class 10 (d) (d) 'Infrastructure projects', given its significant length, proximity to the river channel and the topography of the site it would likely have an impact on the environment of the proposed development.
- 7.3.12. I highlight for the attention of the Board that no details have been submitted with the application in respect of design or location of the proposed grid connection. Only, that the proposed scheme would be connected directly to the national grid via the ESB Networks electricity supply system. Should it be deemed that EIA is required by

way of Category 3 (h) 'Energy Industry' of Part 3 of Schedule 5 '*Development for the Purposes of Part 10*' then this has direct implications for joint assessment of the hydro power scheme and its grid connection, regard being had to O'Grianna case.

- 7.3.13. Article 109 (2) (3) & (4) of the Planning and Development Regulations 2001, as amended, and Schedule 7 of the Planning and Development Regulations 2001, as amended, are relevant to whether there is a requirement to submit an EIS in the case that the appeal development is sub threshold.
- 7.3.14. The appeal site is not located within or in proximity of a Natura 2000 site or a NHA / pNHA. However, having regard to the Appropriate Assessment Screening report and Stage 2 AA carried out and reasons for refusal by the p.a. the nature of the proposed development, nature of the receiving environment and proximity to Natura 2000 sites, it is considered that the potential for significant effects to Natura 2000 sites cannot be ruled out. The Owbeg River drains into the Roughty River which in turn makes its way to the upper catchment of the Kenmare River which forms part of Kenmare River SAC.
- 7.3.15. It is my considered opinion that as per the draft reasons and considerations set out by the p.a. and to Article 109 (2) of the Planning and Development Regulations 2001, as amended and the criteria set out in Schedule 7 of Planning and Development Regulations 2001, as amended, in particular the *characteristics of proposed development*, '*Location of proposed development*' and *characteristics of potential impacts* that the proposed development would be likely to have significant effects on the environment and therefore the applicant should be requested to submit an EIS in order that sufficient detailed information is contained on the file to aid a full and informed decision of the significant effects on the environment of the proposed development.
- 7.3.16. I highlight for the attention of the Board that an EIS was requested in accordance with article 109(2) of the 2001 Regulations and section 132 of the Planning and Development Act, 2000. Six months was allowed and the final date for submission of the EIS was 21<sup>st</sup> December 2017. No response was received within the timeframe. The applicant was advised that the following details, specifically, should be clearly addressed, as part of any EIS

1. Clarity in relation to the change in the maximum, minimum or mean flows in the main River channel as a result of the proposed development.
2. Historical Flow Data of the Owbeg River over the past 10 year period.
3. Details of 10 percentile, 50 percentile, 90 percentile and dry weather flow of the Owbeg River.
4. Flow Monitoring.
5. Whether the continuity of the River would be disturbed by anthropogenic activities.
6. Proposals for sediment transport.
7. Up to date Otter Survey.
8. Tree Survey and Assessment.
9. A detailed bryophyte survey, listing species type.
10. Likely erosion impact arising from the development.
11. Location and detailed design of the proposed grid connection.
12. Justification for the height of the turbine house and visual Impact Analysis.

#### **7.4. Risk to Water Quality**

- 7.4.1. The Environment Section of the planning authority recommends refusal of the proposed development due to 'a high risk of negative impact on the current water quality of the Owbeg River'. The planning officer, having considered the information submitted and the report from the Environment Section, the Biodiversity Officer and Inland Fisheries Ireland (IFI) (Water Quality) have stated that they do not deem it necessary to put the applicants to further costs by requesting further information.
- 7.4.2. The first reason for refusal of the draft decision (16/1165) sets out that the proposal would result in a high risk to water quality of the Owbeg River. Therefore, the development would be contrary to Objective NE-15 of the Kerry County Development Plan 2015 – 2021 and would contravene the EU Water Framework Directive.
- 7.4.3. Objective NE-15 states: 'Achieve water quality targets by implementing the River Basin Management Plans (and associated programmes of measures) and to ensure that development undertaken or permitted by local authorities; other public agencies or private operators, shall not contravene the objectives of the Water Framework

Directive, the European Communities Environmental Objectives (Surface Waters) Regulations 2009 SI 272 of 2009 and the European Communities Environmental Objectives) Groundwaters) Regulations 2010, SI 9 of 2010’.

- 7.4.4. The second reason for refusal sets out that the p.a. is not satisfied that the proposed development would not have a negative impact on water quality of the Owbeg River and on habitats / species in the environs of the proposed development, a number of which are Annex II species including salmon. The proposed development would be contrary to Objective NR-23 of the Kerry County Development Plan 2015 – 2021, which states that it is the objective of Kerry County Council to ‘support the protection of water quality, key habitat and other natural resources requirements necessary to safeguard coastal, estuarine and freshwater fisheries.’
- 7.4.5. The Kerry County Councils Environmental Officers report sets out that ‘historical EPA monitoring of this river indicates the water quality status of this river as high with a rating of Q4-Q5. The applicants own environmental water quality assessments shows a Q5 rating which indicates excellent water quality. The proposed development involves considerable ground works and construction works adjacent to and at the river itself. Notwithstanding the proposed mitigation measures to ensure water quality put forward by the applicant, given the nature and scale of the works, there is, in my opinion, a risk to water quality.
- 7.4.6. Regard is had that the Geotechnical Report submitted indicates that ‘breaking and ripping out of rock will be required at localised sections of the pipe line route and at the intake and excavations of up to 3 meters deep are envisaged hence some rock breaking will be required. The removal of rock will likely require a hydraulic breaker.’
- 7.4.7. The EclA sets out that one of the main impacts which could arise with this project is an impact on the water quality on the River Owbeg. This would occur with washing out, fines – suspended solids as a result of breaking out existing ground, placement of rock fill for road construction, in stream works as part of the water intake construction or concrete spill. There is a possibility that pollutants could enter the onsite watercourses, proceed to the Owbeg River during construction works and continue to the Kenmare River SAC.
- 7.4.8. I also note that the EclA sets out that ‘run-of-river’ hydropower schemes have the potential to cause accumulation of sediment upstream of the impounding structure,



thus disrupting sediment supply to river reaches downstream. It is submitted that where this is the case, measures should be taken to re-supply those river reaches with sediment that occurs upstream of the intake structure. The SEPA Guidance Run-of-River Hydropower Schemes (SEPA, 2010) outlines methods to manage sediment under such circumstances. Designing the intake structure such that flows move sediments over the impounding structure and into the river downstream can return accumulations. Otherwise sediments should be excavated, transported and reintroduced manually as close as possible to the outfall structure. This, I have concern has not been adequately dealt with in the submitted information and I am of the opinion could have a significant environmental impact. Other potential impacts during the operational phase of the proposed development are loss or damage to fish from passage through turbines. It is submitted that periodic monitoring of outflows will indicate if this is a significant problem. Again more detail is required in advance of planning permission being forthcoming and it is not sufficient for the applicant to seek to resolve fundamental issues subject to post construction monitoring and survey work.

- 7.4.9. The Water Framework Directive (WFD) requires that measures are taken to ensure water currently designated under its provisions as high status, remains, in that category. Maintaining river continuity (the ability of sediment and migratory species to pass freely up / down river) is important if the ecological status of a water body is to be maintained. Under the Water Framework Directive, the quality of all rivers must achieve at least a good status and the current status of rivers must not deteriorate. The Environment Department of Kerry County Council has concern that water quality monitoring work which has been carried out at national level has identified a significant drop in the number of high quality river sites in the past number of years.
- 7.4.10. Following on from my assessment that EIA is required and because of the considerable potential negative impact of hydro-electric development on fisheries and the environment, I am in agreement with the planning authority, on this matter.
- 7.4.11. Potential impacts upon water quality are derived from accidental spillage of cement or hydrocarbons, eutrophication, waste from on-site toilet's, contaminated run – off, wet concrete operations and refuelling activities. Sedimentation disturbance and run off can ultimately lead to weathering of exposed soils that could potentially cause leaching and oxidation, resulting in the release of new chemicals into the river.

- 7.4.12. The application is accompanied with a Construction Environmental Management Plan (CEMP) which sets out detailed mitigation measures to safeguard against pollution events during construction. Incl. Environmental Monitoring, Environmental Incidents Reporting, Emergency Response Plan, Statutory Inspection Records and Welfare. Regard being had to the CEMP, submitted, I am of the opinion that concerns remain with respect to aspects of the construction process and operation of the scheme. Significant earthworks are required to facilitate the scheme. In particular, it is noted that works at the intake and along the line of the pipe would require deep excavations. At the intake excavations to depths of 3m are predicted, as informed by the geotechnical survey. The geotechnical survey notes that a hydraulic rock breaker would most likely be required. The works would be in close proximity to the river and would have the potential to impact water quality and therefore water dependent habitat and species, including species listed on Annex II of the Habitats Directive (salmon and indirectly possibly Otter).
- 7.4.13. On the basis of the information provided, I am of the opinion, that due to the high risk of negative impact on the current Q4-Q5 water quality designation of the Owbeg River, it has not been proven that the proposed development would not be likely to have significant adverse impact on its water quality.

## **7.5. Impact Upon Ecology**

- 7.5.1. Abstraction of excessive amounts of water to prolonged abstraction having reduced flows can affect aquatic habitats, fish and insect populations. Although the site is not located within a designated area of conservation the drainage onsite forms the upper catchment of the Kenmare River which is designated as part of the Kenmare River SAC located approx. 9.8Km to the south west (The Owbeg River drains to the Roughty River which drains to the Kenmare River SAC).
- 7.5.2. The Natura Impact Statement (NIS) completed by INIS Environmental Consultants concludes that in light of the conservation objectives and rationale for designation of the Kenmare river SAC, the potential for significant indirect impacts exists as a result of aspects of the proposed development. These potentially significant impacts have been evaluated, (i.e. stage two of the AA process) and it has been concluded, that, with the implementation of mitigation measures, the proposed development would not result in any impacts that would adversely affect the Kenmare River SAC, having

regard to the sites respective conservation objectives, in circumstances where ‘no reasonable scientific doubt’ remains as to the absence of such adverse effects.

- 7.5.3. The habitat mapping provided in the Ecological Impact Assessment (EclA) refers to the Owbeg as an upland eroding river. The system shows considerable variation in riparian habitat including steep rocky banks vegetated with bryophytes, lichens and ferns. The EclA sets out habitats, flora and fauna in the receiving environment. Potential impacts on Otters, Bats and Bryophytes is detailed (impact upon fish / fisheries is dealt with in the succeeding section of this report). Significance of Impact upon Otters is described as ‘temporary minor negative effect’. Kerry County Council’s Biodiversity Officer has requested that the applicant clarify if the site was revisited for signs of Otter use, more recently, and surveys carried out under the previous application updated. It is concluded that the proposed works would result in minimal habitat loss and disturbance to bat species during the construction phase of the development only. No direct species loss is expected and no roosts will be affected. The significance of potential impact on the lesser horseshoe bat is considered to be a temporary minor negative effect. The applicant has carried out a bryophyte survey. The assessment classifies percentage coverage of bryophyte on vertical zones along the system. However, no species identification appears to have been undertaken. The Kerry County Council Biodiversity Officer is not satisfied with the survey and notes that no species identification has been recorded, in particular it has not been established if any rare or protected species were recorded.
- 7.5.4. In the EclA, under potential impacts upon existing habitats, I note that it is states that the construction of an intake weir and the associated increase in water level and siltation could affect a significant length of the stream channel depending on its morphology. Increased water levels would impact on all species in the amphibious zone, while siltation is a particularly serious problem for lichens, which are generally light demanding and intolerant of silty water.
- 7.5.5. The EclA concludes that the proposed small hydro scheme on the Owbeg River will not have any significant residual impacts assuming the proposed measures are adhered to during construction and operation of the scheme. It is recommended that the proposed works are monitored during the construction phase by a qualified Ecological Clerk of Works (ECoW) to ensure that the mitigation proposed is

implemented and that the conservation interests within the receiving environment are effectively protected.

7.5.6. Given that a significant change in water level regime would have a negative impact on bryophytes and given my concerns with respect to lack of information in respect of flow records and duration / length of evaluation time referred to in the reports submitted, I have concerns with regard to impact upon aquatic habitat and ecology.

## 7.6. Potential Impact on Fish

7.6.1. The project area has been the subject of three separate fish studies. The conclusions of these studies show that salmon are present in the lower reaches of the proposed depleted stretch. Salmon can travel up to 400 meters above the outflow from the powerhouse but do not breed in this stretch as conditions are not suitable. The closest breeding ground for salmon is below the outflow from the powerhouse.

7.6.2. No sea trout or lamprey are present in the project area. Eels are present up to the base of Nancys Falls but they are unable to make their way to the top of the falls. Brown Trout are resident throughout the length of the proposed depleted stretch.

7.6.3. As the Owbeg is classified as an important salmonid river, and Atlantic salmon are present in the lower reaches of the abstraction zone, this site is evaluated as - A internationally important within the context of Atlantic Salmon. The site is evaluated as B - Nationally Important in the context of Brown Trout. The following mitigation measures to protect fish are proposed:

- Turbine design will consider options least likely to damage fish e.g. compressible bumper versus steel edge or rubber.
- A physical screen of maximum gap size 12mm and suitable to the type of turbine intake proposed to be agreed with IFI and installed prior to commissioning of the hydro scheme.
- A physical screen of 20mm spacing should be agreed with IFI and installed at the outfall where water is discharged back to the waterbody prior to commissioning of the hydro scheme.
- Monitoring of fish populations will continue after operation of the hydro scheme. Monitoring should include: investigating juvenile fish densities in the

reaches above the intake, below the outfall and in the depleted flow reach; and mortality of fish through the turbines.

7.6.4. The following mitigation measures are proposed during the operation of the hydropower scheme:

- Sediments upstream of the intake structure should be periodically excavated, transported and reintroduced manually as close as possible to the outfall structure.
- Monitoring of fish passing through the outfall structure should be carried out as and when fish population monitoring takes place.
- Ongoing maintenance will be kept to a minimum and will avoid the use of heavy machinery.

7.6.5. Reductions in flow can influence water temperature. Flow is a major determinant of a river's ecological characteristics and the biodiversity of its aquatic organisms. Along depleted stretches of river where flow is reduced, temperatures can increase due to a reduction in wetted area and increase in shallower water, all of which may have consequences for the development and reproduction of aquatic organisms that are influenced by temperature. The applicant carried out a baseline estimate of flow-rate on September 8th, 2015 (with SWRFB in attendance). It is submitted that the flow on that date was sufficient for fisheries. It is further submitted that as the flow was estimated as being less than the compensation flow, that the compensation flow of 212.5L/S would be adequate for fisheries.

7.6.6. I note the IFI report which states: 'The estimate of flow relative to the compensation flow requirements for the maintenance of fisheries in the Owbeg River have been noted and subject to confirmation of these figures...IFI would be agreeable to a compensation flow  $Q_{comp} = 212.5L/s$  with the additional provision of the following...Environmental flows for the protection of flow variability inclusion of a notch in the weir to discharge agreed compensation flow...provision of automated flow data / turbine close down data...'

7.6.7. Overall I am of the opinion that sufficient flow data has not been submitted with the planning documentation, agreement in principle with IFI, with respect to matters arising in particular; appropriate water abstraction levels, weir design, cill notch

design and accumulation of sediment, is not appropriate and issues should be fully apparent to the Board and resolved and agreed in advance of planning permission being forthcoming.

- 7.6.8. It is acknowledged that flow management can be critical in managing impacts resulting from the construction and operation of water abstraction and impoundments. Deciding on how much water can be abstracted safely, with regard to fish, macro-invertebrates and maintenance of a healthy unaltered river system is critical. While the applicant submits that agreement has been reached with IFI regarding appropriate abstraction levels and a compensation flow I still have concern with respect to change in the flow of the main river channel and lack of information submitted in this regard. I recommend that An Bord Pleanála apply a precautionary approach and refuse planning permission for the proposed development.

#### **7.7. Appropriate Assessment (AA)**

- 7.7.1. The EU Habitats Directive (92/43/EEC) requires competent authorities to assess projects that are likely to have a significant effect on European designated sites, i.e. Special Protection Areas (SPA's) and Special Areas of Conservation (SAC's). To assist this process, the applicant has prepared a Natura Impact Assessment for the proposed windfarm development, which includes a Stage 1: Screening Assessment and a Stage 2 Appropriate Assessment.

##### *Stage 1: Screening*

- 7.7.2. The first stage of the Appropriate Assessment process is the screening exercise where it should be decided if the effects of a development on a European site are likely and whether or not the effects are significant in light of the Conservation Objectives for the site. It should also be determined if there are cumulative effects with other projects. The precautionary principle should apply if there are significant effects that cannot be excluded, or where the likelihood is uncertain.

The first step of this stage is to identify all European sites which could potentially be affected using the Source-Pathway-Receptor model.

- 7.7.3. There are 12 European designated sites located within 15km of the appeal, of these, ten are SACs and two are SPAs:

1. Kilgarvan Ice House SAC (000364) – 1.6 Km

2. Killarney National Park, Macgillycuddy Reeks and Caragh River Catchment SAC (000365) – 3.1Km
3. Glanlough Woods SAC (002315) – 4.1Km
4. Killarney National Park SPA (004038) – 5.6 Km
5. Old Domestic Building, Curraglass Wood SAC (002041) – 5.8 Km
6. Derryclogher (Knockboy) Bog SAC (001873) – 9.6 Km
7. Kenmare River SAC (002158) - 9.8 Km
8. Mucksna Wood SAC (001371) 10 Km
9. Sheheree (Ardagh) Bog SAC (000382) 13.7 Km
10. Erik Bog SPA (004108) – 14.3 Km
11. Blackwater River SAC (002173) - 14.9 Km
12. Maulagowna Bog SAC (001881) – 14.9 Km

Having regard to the nature and scale of the proposed development, impact pathways would be restricted to hydrological pathways and mobile species pathways. Using the source-pathway-receptor risk assessment principle, the European sites that could potentially be affected by the proposed development, and which would occur within the sphere of influence of the project site is the Kenmare River Special Area of Conservation (SAC). The Owbeg River drains to the Roughty River which links hydrologically to the Kenmare River SAC. Also, the Kilgarvan Ice House SAC, Glanlough Woods SAC and Old Domestic Buiding, Curraglass Wood SAC are located 1.6km, 4.1km and 5.8km, respectively, from the proposed development site. These distances are within the 6km foraging range of Lesser Horseshoe Bat, the qualifying interest of each of these sites. There is therefore potential that foraging bats from these sites could be indirectly impacted through light pollution and noise from turbines by virtue of distance from the proposed development site.

- 7.7.4. The second step is to identify the conservation objectives of the Kenmare River SAC. The Conservation Objectives are stated as follows: To maintain or restore the favourable conservation condition of the Annex i habitats and the Annex ii species for which the SAC has been designated.
- Large shallow inlets and bays
  - Reefs

- Perennial vegetation of stony banks
- Vegetated sea cliffs of the Atlantic and Baltic
- Atlantic salt meadows (*Glauco-Puccinellietalia maritima*)
- Mediterranean salt meadows (*Juncetalia maritimi*)
- Shifting dunes along the shoreline with *Ammophila arenaria* (white dunes)
- Fixed coastal dunes with herbaceous vegetation (grey dunes)
- European dry heaths
- *Juniperus communis* formations on heaths or calcareous grasslands
- Calaminarian grasslands of the *Violetalia calaminariae*
- Submerged or partially submerged sea caves
- Narrow-mouthed Whorl Snail (*Vertigo angustior*)
- Lesser Horseshoe Bat (*Rhinolophus hipposideros*)
- Otter (*Lutra lutra*)
- Harbour Seal (*Phoca vitulina*)

7.7.5. Step 3 of the screening process is to identify the potential (a) likely and (b) significant effects (direct or indirect) of the project alone on the European site **solely** within the context of the site's conservation objectives in light of best scientific knowledge in the field.

The qualifying species within the Kenmare River SAC are reliant upon the aquatic environment. There is potential for likely significant effects on the Kenmare River SAC from:

1. Accidental spillage of cement or hydrocarbons stored on site impacting upon water quality.
2. Eutrophication due to run off entering the Owbeg River and tributaries during construction works.
3. Waste from on-site toilets and wash facilities could also potentially impact on aquatic ecology downstream in designated sites.
4. Wet concrete operations could lead to contamination of receiving waters.
5. Refuelling activities could result in fuel spillages which may affect downstream sites.



6. There is a potential risk of some hydrocarbons polluting the watercourses following run-off from the impermeable trafficked areas.
7. During the operation phase of the hydro-electrical scheme, small quantities of oil will be used in cooling the transformers. There is potential for small oil spills.
8. Any pollution events and resultant fish population changes may affect prey availability for Otter. Pollution events may also result in increased pollutant burden for downstream Otter populations. Otter are listed as a qualifying interest of the Kenmare River SAC. Otter have also been recorded historically in the 10km grid squares V97 in which the proposed site is located.

7.7.6. The fourth step of the Screening stage is to identify the potential (a) likely and (b) significant effects (direct or indirect) of the project in combination with other plans or projects on the European site **solely** within the context of the site's conservation objectives in light of best scientific knowledge in the field.

Water abstraction does not currently take place along the Owbeg River. Nor are there other such developments upstream or downstream of the proposed hydroelectric scheme. It is contended in information submitted that Kilgarvan Town Council have long term plans for a waste water treatment plant (WWTP) however this is to be located in the Roughty River, 2.3 Km down stream of its confluence with the Owbeg.

The area of the proposed site is subject to additional pressures on water quality and aquatic ecology, particularly in relation to agricultural activities.

The Roughty Valley Co-Op Society Ltd is a commercial pig farm located immediately east of the proposed development in the townland of Meelick, which is within the same water catchment as the proposed development (Dunmanus-Bantry-Kenmare WFD Catchment). This agricultural facility is subject to annual EPA environmental compliance monitoring (Licence Reg. No. P0708-02) relating to air emissions, water, onsite bund testing (intensive agriculture), groundwater, resource and waste. Results of this monitoring are presented in a publicly available annual report. Given the strict and ongoing monitoring at this facility, there is no potential for the existing pig farm to act in-combination with the proposed works to cause cumulative impacts on Natura 2000 sites.

7.7.7. Other plans or projects:

There are no other plans or projects in the vicinity of the proposed hydroelectric scheme which have the potential to act in-combination with the proposed works to cause cumulative impacts on Natura 2000 sites.

7.7.8. The fifth step of the Screening stage is evaluating the potential effects identified above using the source-pathway-receptor model.

The proposed development will involve diverting part of the Owbeg River through a 1400mm pipe and passing it through an electrical powerhouse (turbine house) before reintroducing it back into the Owbeg River downstream.

The proposed development will comprise the following works:

- Upgrading of existing access tracks;
- Installation of associated drainage works and sediment / erosion control structures;
- Upgrading of site entrance;
- Establishing a temporary site compound;
- Construction of onsite pipeline route;
- Construction of a 1.3km of access and maintenance road;
- Construction of onsite weir and water intake, and
- Construction of onsite turbine house.

7.7.9. There is potential disturbance of soil, rock and aggregates from excavations during construction leading to entrainment of suspended sediments into the Owbeg River which is linked to the Roughty River flowing to the Kenmare River SAC. There is potential for reduction in water quality to impact aquatic qualifying interests of this hydrologically linked SAC. There is potential for disturbance through the creation of light pollution from construction activities to impact Lesser Horseshoe Bats roosting in the proximal Kilgarvan Ice House SAC but foraging closer to the proposed development. There is potential for impact of noise from turbine operation on foraging bats commuting from Kilgarvan Ice House SAC Glanlough Woods SAC and

Old Domestic Building, Curraghglass Wood SAC, all of which are located within the 6km foraging range of Lesser Horseshoe Bat.

- 7.7.10. In the scenario of a large release of suspended sediment into the Owbeg River during construction works, there is potential for significant indirect impacts downstream of the development area. As the Kenmare River SAC is downstream of the proposed development area, there could be indirect impacts, via water quality, on the key species and key habitats for which these Natura 2000 sites have been designated. In the event of siltation or pollution of watercourses from the site, the aquatic habitats and species of the Kenmare River SAC could be indirectly damaged by changes to water turbidity and water quality. This could in turn reduce prey availability of Otter, a qualifying interest of the Kenmare River SAC. Therefore, the possibility of there being a significant impact on the Kenmare River SAC cannot be screened out.
- 7.7.11. With respect to Lesser Horseshoe Bat, being indirectly impacted through light pollution by virtue of distance from the proposed development site. It is considered that given the small size and scale of the proposed development and the fact that all construction works will be carried out during daylight hours and there will be no on-site lighting overnight, further minimizing disturbance to bats, the potential impacts from light pollution on Lesser Horseshoe Bats inhabiting the aforementioned SACs during the construction phase are not considered likely. Furthermore, minimal lighting will be required at the construction compound and will be turned on and off daily at the start and beginning of working shifts. It is anticipated that this will primarily be used during the winter months, when bats are least likely to be affected due to the hibernation period. Where lighting is required, directional lighting (i.e. lighting which only shines on work areas and not nearby countryside) will be used to prevent overspill. This will be achieved by the design of the luminaire and by using accessories such as hoods, cowls, louvers and shields to direct the light to the intended area only. Impacts during construction on bats from artificial lighting are therefore considered unlikely to be significant.
- 7.7.12. During the operational phase of the proposed scheme, for health and safety reasons, there will be low-level external lighting at the turbine house. This lighting will be on a sensor and a timer such that it will operate only in the case of maintenance works being carried out at the turbine house during hours of darkness. Therefore, the

potential impacts from light pollution on Lesser Horseshoe Bats inhabiting the aforementioned SACs during the operational phase are not considered likely.

- 7.7.13. Given the absence of any hydrological connectivity between the development and the further 8 Natura 2000 sites identified within 15km of the development and the distance, no direct or indirect impact on the qualifying interests are considered likely. Potential impacts can therefore be screened out.
- 7.7.14. Overall, construction works associated with the proposed hydroelectric scheme have the potential to cause a decline in water quality in the Kenmare River SAC, with consequent negative impacts on the qualifying interests for which the European Sites was designated.
- 7.7.15. Finally, it can be determined that likely significant effects, either individually or in combination with other plans or projects, on the Kenmare River SAC cannot be reasonably ruled out in this case on the basis of objective scientific information.

*Stage 2: Appropriate Assessment*

- 7.7.16. The Stage 2 Appropriate Assessment considers whether the proposal alone or in combination with other projects or plans will adversely affect the integrity of a European Site in view of the site's conservation objectives and includes a consideration of any mitigation measures necessary to avoid, reduce or offset any negative effects.
- 7.7.17. I consider that an Appropriate Assessment of the likely significant effects of the proposal on Kenmare River SAC is required, and that all other European Sites within 15km of the subject site can be screened out having regard to south-pathway-receptor assessment principle. I am not satisfied that there is sufficient information available to the Board to carry out the Stage 2 Appropriate Assessment in this case. The following is a summary of the mitigation measures contained within the Natura Impact Assessment submitted on behalf of the applicant:

**7.7.18. Mitigation Measures Relating to the Pre-Construction Phase**

- In advance of any works taking place, a Construction Environmental Management Plan (CEMP), including a Site Drainage Management Plan (SDMP), will be drawn up following final consultation with the IFI and NPWS.

An outline Construction Environmental Management Plan (CEMP) has been prepared and is included in Appendix VIII of this NIS.

- The CEMP will be distributed and discussed with all parties involved in the construction of the hydroelectric scheme (including any sub-contractors. The CEMP will set out measures to avoid siltation, erosion, surface water run-off and accidental pollution events which all have the potential to adversely affect water quality within the site during the construction phase.
- Furthermore, the proposed works are to be monitored during the construction phase by a qualified Ecological Clerk of Works (ECoW)

#### **7.7.19. Mitigation Measures Relating to Water Quality Protection**

- All works in the vicinity of the Owbeg River will require particular care and the implementation of mitigation measures to avoid water quality deterioration. Cognisance will be taken of the Construction Industry Research and Information Association (CIRIA) guidelines, “Control of Water Pollution from Construction Sites,” and “Control of Water Pollution from Linear Construction Projects”.

#### **7.7.20. Protection of Watercourses**

- Siltation of watercourses will be minimised using settlement ponds and the implementation of clean and dirty water drainage channels;
- Off and on-site run-off will be intercepted and managed to ensure no pollution events occur;
- An environmental audit will be undertaken to visually inspect watercourses receiving flows from the construction works and measurements will be taken to ensure the standard of water quality is maintained;
- A dedicated wash out area will be located within the site compound for the washout of concrete chutes if required;
- A clean water drainage channel will be installed along the upslope edge of the proposed access road to prevent clean water from entering the construction area, minimising the risk of silt and contamination of water runoff flowing downslope towards the construction area;

- The access road will also have a dirty water drain 300mm wide and 550mm deep between the road and the mound on the downslope side of the road which will catch the run-off from the road. The dirty water drain will have silt traps/check dams spaced at intervals depending on the road gradient to catch any silt and to reduce the flow to prevent scouring, protecting the formation of the access road. The drainage channel will flow into settlement ponds prior to discharge;
- Should increased levels of siltation be recorded within the watercourses or a decrease in water quality become evident during the course of the construction phase, construction works will cease until the source can be found and remediated;
- To minimise risk, in case of accidental failure of any of the mitigation measures, in-stream works will take place outside the salmonid spawning season to ensure sedimentation of suitable spawning areas downstream of works does not occur. In-stream work will take place within the months of May-September (inclusive);
- Acidic, metal or sulphide-rich spoil / aggregate for carriageway construction will not be used.
- Detailed Construction Method Statements and Risk Assessments will be prepared in advance of all construction activities and will identify the control measures to be put in place. These will include preparatory works on the site, including installation of silt fences. This work will be undertaken in advance of any excavation of construction works;
- Construction works onsite will be timed to occur outside periods where very heavy rainfall would be expected where possible;
- Erosion control and attenuation facilities, namely sediment/silt traps, and settlement ponds will be regularly maintained during the construction phase. All personnel working onsite will be trained in pollution incident control response;
- A formal procedure to deal with queries and comments will be included in the emergency response plan for the site. During the construction period, it is

envisaged that a facility to shut off the outfall from settlement ponds during an emergency will be provided. This will mitigate any accidental spillage along the route impacting on watercourses and the size of the ponds will allow sufficient time to arrange for cleaning up the relevant pollutant in the settlement pond.

- In the event that a specific short-term risk to water quality is identified on site, specific localised measures will be implemented including:
- Placing temporary filtration silt fences within drainage channels where siltation is observed;
- Installation of additional check dams in drainage channels.

#### **7.7.21. Drainage for Spoil Management Areas**

- All spoil excavated during the works will be placed on both sides of the access road.
- The placing of spoil from excavations and local concentrated loads on slopes will be avoided without first establishing adequacy of the ground to support the load.
- The storage of spoil will be avoided on slopes greater than 10 degrees as run-off and potential instability is more likely to occur.
- No stockpiling will occur in areas where the in-situ peat depth is greater than 1.0m as potential as instability is more likely to occur.
- As a general rule of thumb all stored spoil will be kept to a maximum height of 1.0m. This will be confirmed with the appointed contractor prior to construction.
- Spoil will not be stored in areas deemed as unsuitable.
- Where practical, the surface of the stored spoil will be shaped to allow efficient run-off of surface water. Where possible, shaping of the surface of the stored spoil will be carried out as placement of spoil within the storage area progresses.
- Seeding of the surface of the stored spoil will aid in stabilising the spoil in the long term.

- If necessary, spoil will be covered while stored to minimise run-off.
- Silt fencing will be used where necessary to prevent entry to the drainage system.
- Where possible, the appointed contractor will use excess spoil for site landscaping and reinstatement. Surplus materials post construction works will be removed and placed in a licensed waste facility.

#### **7.7.22. Construction of Settlement Ponds**

- All flow depths to be kept to a normal depth of 0.3m with a maximum depth of 0.5m maximum.
- Side slopes to be shallow, nominally at a 1 in 3 side slope (maximum).
- Material excavated from the settlement pond will be compacted around the edge of the pond, which will provide a natural barrier to prevent site personnel from falling into the pond.
- Consideration will be given to retention of the settlement ponds as permanent ponds in the post construction phase, should they be deemed to provide ecological and habitat benefit for the site. Construction waste materials such as generated silts and gabion baskets will be removed and disposed of in an appropriate manner before any pond is left as permanent.

#### **7.7.23. Oil and Fuel Spills from Construction Plant**

- In order to carry out the construction works required for this development the appointed contractor will require the employment of a number of items of construction equipment. This plant will consist mainly of tracked excavators, dump trucks, eight wheel tippers and dozers. In addition, some items of smaller plant such as vibrating rollers, plate compactors, compressors, mechanical pumps and electric generators will also be employed on site.

#### **7.7.24. The following shall apply in the event of oil and fuel spills from construction plant:**

- Refuelling will only occur in the designated and bunded location surrounded by a concrete apron in the construction compound. All machinery will be maintained in good working order, free from leakage of fuel or hydraulic fluid.



- Plant equipment such as generators and pumps will be placed on drip trays.
- Oil and fuel spills may occur during plant operation due to mechanical breakdown. Should an incident occur, all plant operators will switch off and cease to operate the plant in question and an immediate investigation carried out to establish the degree of threat to the environment. If required, spill trays and soakage pads shall be immediately employed to curtail any likely impact on the environment. A full spill kit will be maintained on site at all times during construction.

#### 7.7.25. **Runoff from Concrete Leaching**

- Concrete will be required for the construction of the proposed development. During the transport and placement of the concrete there is scope for a likely incident, which could result in a risk to the environment. Concrete has a high pH and if allowed to enter the natural drainage system, it could have profound impact on aquatic life downstream, thus all concrete construction works will be advanced on site in a planned sequence. Prior to work proceeding, a detailed method statement will be prepared by the appointed contractor to accurately detail the intended works, taking into consideration the transport, placement and curing of the concrete. Issues relating to drainage adjacent to the proposed works will be examined and a system of working devised to ensure that no elevated sediment run off from the concrete pour takes place.

7.7.26. The potential effects of the project on the conservation objectives of the sites should now be examined and evaluated taking account of mitigation. This evaluation should use the source-pathway-receptor model and be based on best scientific knowledge in the field. It should include direct and indirect effects of the project, either individually or in combination with other plans or projects. It should also be considered whether the proposed mitigation measures are clearly described, and would be reasonable, practical and enforceable, and that the applicant has the ability to implement such measures. Mitigation measures also need to be subject to screening/ AA in their own right.

7.7.27. It is noted that the applicant submits that with strict adherence to all mitigation measures outlined in the NIA, and compliance with all surface water management proposals, including additional information in this regard submitted to the Planning

Authority, that the proposed development will not give rise to significant adverse effects on the Kenmare River SAC. I am not confident, however, given the characteristics of the project, location of the project and characteristics of potential impacts that sufficient information has been submitted to aid a full and informed decision of the significant effects on the Kenmare River SAC European Site. In the absence of full EIA concerns remain with respect to aspects of the construction process and operation of the scheme. The Owbeg River is hydrologically linked to the Kenmare River SAC. Regard is had to the Further information request by An Bord Pleanála set out in 7.3.16 of this report.

On the basis of the information provided with the application and appeal, including the Natura Impact Statement, and in light of the assessment carried out above, I am not satisfied that the proposed development individually, or in combination with other plans or projects would not adversely affect the integrity of European site code No 002158, in view of the site's Conservation Objectives. In such circumstances the Board is precluded from granting approval / permission.

## **8.0 Recommendation**

- 8.1.1. I recommend that planning permission should be refused for this development for the reasons and considerations set out below.

## **9.0 Reasons and Considerations**

1. It is considered that the information submitted during the consideration of the application including the Ecological Impact Assessment report (EclA), lacks clarity in relation to baseline information on flow, rate of extraction and impact upon the river channel hydrology and hydrography, in particular whether there would be a 30 per cent change in the maximum, minimum or mean flows in the main river channel. The Board is thus not satisfied, on the basis of the information provided that the proposed development would not be likely to have significant adverse impacts on the environment, and that the potential environmental impact is such that an EIA is warranted. The proposed development would thus be contrary to the proper planning and sustainable development of the area.

2. On the basis of the information provided with the application and appeal, including the Natura Impact Statement, the Board cannot be satisfied that the proposed development individually, or in combination with other plans or projects would not adversely affect the integrity of European site code No 002158 Kenmare River SAC, or any other European site, in view of the site's Conservation Objectives. In such circumstances the Board is precluded from granting approval/permission.

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Fiona Fair  
Planning Inspector  
25/01/2018

## Appendix

While the following planning appeals are of similar scale and nature I note that 'run of river' schemes which take water out via an outfall pipe and run it for a length along the river and then put it back in change the flow of the river channel, differ from Mill race schemes with turbines which don't extract water and therefore would not change the flow.

**1. PL01.239783 / Reg. Ref. 11/219** Permission refused in 2012 for Erection of a small hydro power scheme utilising existing mill race and part of existing mill building (protected structure) and associated site works. 538,550 kilowatt hours / 538.550 Mwh – No EIS or OH

Reason for refusal: The proposed development would be located within the Slaney River Valley candidate Special Area of Conservation (Site Code 000781), selected for species listed in Annex II of the EU Habitats Directive including sea lamprey, river lamprey, brook lamprey, Atlantic salmon and freshwater pearl mussel. The Board is not satisfied, on the basis of the submissions made in connection with the planning application and the appeal and having conducted an Appropriate Assessment based on the Natura Impact Statement submitted with the application, that the proposed development would not adversely affect the integrity of this European site in view of its conservation objectives. The proposed development would, therefore, be contrary to the proper planning and sustainable development of the area.

**2. PL08.131144 / Reg. Ref. 84/02** (decision date October 2003) Permission Refused for Small 'run of the river' **hydropower scheme** (650 Kw / 0.65 Mw output), river intake pipeline, powerhouse building and outfall. AN EIS was submitted with the Application and an OH was held.

Refusal Reasons:

The Emlagh River is an important salmonid habitat, including in terms of fish spawning. Having regard to the submissions in connection with the application and appeal, in particular the lack of definitive baseline information on fishery status, spawning status and fish passage and flows in the river (including the water abstraction regime necessary to protect migratory fish), the Board is not satisfied

that the proposed development would not give rise to significant damage to the salmonid habitat and, therefore, the proposed development would seriously injure the amenities of the area and be contrary to the proper planning and development of the area.

Having regard to the topography and soil conditions of the site and environs, the Board is not satisfied, on the basis of the submissions made in connection with the application and appeals, that the extent of necessary earth works would not adversely affect the visual amenity and the stability of this upland area, located in a candidate Special Area of Conservation. Therefore, the proposed development would seriously injure the amenities of the area and be contrary to the proper planning and development of the area.

### **3. PL08.130119 / Reg. Ref 3566/01**

ABP overturned the decision of the p.a. went against the recommendation of the Plannign inspector to grant permission and refused planning permission (2003) for a **“run of river” type hydro-power scheme** with a proposed generation capacity of 1,500 kilowatt / 1.5 Mw output.

An EIS was submitted with the application and an OH held

Reason for Refusal: The Roughty River is an important salmonid habitat of considerable value in terms of fish spawning, angling and tourism. Having regard to the submissions made in connection with the application and appeal, in particular the lack of definitive baseline information on habitat status, fishery status, spawning status and fish passage and flows in the river (including the water abstraction regime necessary to protect migratory fish), the Board is not satisfied that the proposed development would not give rise to significant damage to the salmonid habitat. The proposed development would, therefore, seriously injure the amenities of the area and be contrary to the proper planning and development of the area.

**4. PL14.121822: (PL 99/588)** Permission Granted for “A small hydro-electric generating plant (mini installation) with a maximum generation capacity of 0.432 MW. The proposed development provides for the construction of 12 no. turbines each with a maximum capacity of 36 KW, the upgrading of all of the existing 12 no.

sluice gates on Tarmonbarry Weir, the demolition and reconstruction of the existing control structure on the eastern side of Tarmonbarry Weir, the construction of a Denil fish pass and Pool Pass and associated site mdevelopment works ....”

The site of the proposed development was not located within any specifically designated conservation area e.g. National Heritage Area (NHA), Special Area of Conservation (SAC) or Area of Scientific Interest (ASI),

Sub Threshold EIA was Requested by the Board and an OH Held.

**5. Concurrent Appeal 248132** (Waterford) relates to Permission to amend a permitted hydro-electric scheme rerouting the pipeline from the water abstraction weir for a distance of 550m, alterations to the turbine house to accommodate the generating equipment, an extension to the turbine house for a transformer and ESB substation and all associated site work. A predicted annualised output of 2.8GWH / 2800 Mwh. An EIS accompanied the original application PD 11/314.” A Revised Environmental Report updating the original EIS was requested by the p.a. The original application 11/314 description is a hydroelectric scheme on the Glasha River, 4.2km upstream of its confluence with the River Suir. Water is to be abstracted below Glenpatrick Bridge and directed through 4.2km of pipe to the proposed turbine house just below Glen Bridge, from where the water will gradually be reintroduced into the river. An EIS accompanied this application