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Engineering Works to Form New Eastern Inner Dock Quay Non-Technical Summary



June 2024

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Front Cover – Plate 1: Aerial View of the Port of Nigg showing the existing and proposed quays. (All photographs curtesy of Mabbetts)

1 INTRODUCTION

1.1 Background

Global Energy Group (GEN) part owns, and fully operates the Port of Nigg (PON) and is part of the Inverness headquartered energy sector service group Global Energy Group who operate worldwide. GEN acquired Nigg Yard in 2011 and invested a substantial amount to transform it to the current PON which includes access to a deep-water quayside. The primary function of PON is the provision of facilities and services to support the oil and gas and renewables sectors.

PON has successfully diversified to satisfy current market needs in the north of Scotland. Although they continue to service the requirements of the oil and gas sector, currently, a substantial portion of PON's revenue is derived from the renewables sector from the following sources:-

- 1. Building property rental
- 2. Storage land rental
- 3. Vessel charges
- 4. Quayside charges

It is one of Scotland's most important energy industry facilities, having played a pivotal role in supporting six major offshore wind projects and generated a revenue of ~ £13 million during the Financial Year of 2022-23. PON is within the boundary of Inverness and Cromarty Green Freeport and is identified as a "Tax Site" and a "Customs Site". The designation is designed to attract investment into the area while delivering the objectives of the Green Freeports policy.

The proposals are to modify the existing rock revetment forming the east side of the inner dock to form heavy-duty quayside faced with a vertical retaining wall. The new quay will primarily facilitate the export of High Voltage (HV) cable manufactured at the adjacent Sumitomo Electrics factory directly onto cable installation vessels.

It will also serve as an additional facility to support the existing operations at the site. However, it should be stressed that due to the Inner Dock's restricted water depth the use of the quay for floating turbine integration and testing at port-side is unlikely to occur at the new quay.

1.2 Consenting Process

The Environmental Impact Assessment (EIA) was undertaken under both the Town & Country Planning (Environmental Impact Assessment) (Scotland) Regulations 2017 and the Marine Works (Environmental Impact Assessment (Scotland) Regulations 2017 ('the Marine EIA Regulations').

The purpose of this Non-Technical Summary (NTS) is to provide a summary of the findings of the EIA. The purpose of the EIA is to determine whether the proposed quay development will have significant effects on the environment. Where significant effects are predicted, the EIA considers the scale and magnitude of these effects and measures to mitigate them. This NTS sets out the scope of the EIA, the methods used and the findings of the assessment.

The EIA Report (EIAR) will be submitted to The Highland Council (THC) and Marine Directorate – Licensing Operations Team (MD - LOT) for consideration as part of the respective applications for consents. Members of the public may make representations to these organisations during the formal consultation process for each consent. Details of how and when representations can be made will be publicised in The Ross-shire Journal newspaper. The period for representations for each consenting regime will be determined by the respective consenting bodies.

1.3 The Site



Plate 2: Aerial View of PON showing the development location

The site is part of the wider PON which comprises laydown and storage areas, fabrication and assembly shops, staff offices and deep-water quays. Access to the port can be gained via the B9715. PON was established in 1972 as Nigg Fabrication Yard and consists of approximately 70 hectares (ha) of land reclaimed from the eastern edge of Nigg Bay.

The site comprises the eastern side of the Inner Dock at PON (Plate 2). The Inner Dock was originally constructed as a dry dock for the fabrication of steel oil production platforms for the North Sea. Currently however, the Inner Dock is flooded and the dock gate is moored offshore at the adjacent Oil Terminal jetty. The inner dock is envisaged to remain in this state for the foreseeable future.

PON is situated at the mouth of the Cromarty Firth, where it meets the Moray Firth (known as 'The Sutors'). The Nigg Oil Terminal is located to the immediate north of PON, with the B9175 and Fearn Peninsula to the east. The B9175 forms a part of The National Cycle Network.

Nearby settlements include the hamlets of Balnabruich and Balnapaling to the immediate north, with Castlecraig approximately 1.5km east, Nigg approximately 2km north. In the wider area, Arabella Ankerville, Ballintore and the A9 are further north. The village of Cromarty is located ~1.15km at its closest point south across the Cromarty Firth from PON.

The Port of the Cromarty Firth (POCF) is the existing Statutory Harbour Authority for the Cromarty Firth under the Cromarty Firth Port Order of Confirmation 1973 Act as amended. POCF maintain overall control and management of shipping and vessel access/ egress from Nigg and the wider Cromarty Firth area. Any marine traffic accessing the port will adhere to the POCF Marine Safety Management Plan which is enforced by POCF as the Statutory Harbour Authority. In addition, vessel owners and captains are responsible for the implementation of industry standard ballast water management practices.

1.4 Structure of this Non-technical Summary

The NTS is set out in the same order as the EIA Report, to facilitate cross-referencing and to offer a summary of the environmental findings that will be submitted. The sections within this NTS are therefore as follows:

- 1. Introduction
- 2. Proposed Development
- 3. EIA Methodology and Scoping
- 4. Airborne Noise
- 5. Biodiversity
- 6. Traffic Assessment
- 7. Water Environment and Coastal Processes

- 8. Other Supporting Assessments including Accident and Natural Disaster; Air Quality; Archaeology and Cultural Heritage; Carbon Assessment; Material Assets and Waste; Socioeconomics; and Seascape, Landscape and Visual.
- 9. Schedule of Mitigation
- 10. Summary of Effects

The overall suite of documents associated with the applications comprises the following:

- <u>The Environmental Impact Assessment Report (EIAR)</u> reports the potentially significant environmental effects of the proposed development on the environment, and is made up of the following:
 - Volume 1: Written Statement this contains discussion of potentially significant environmental effects and proposed mitigation measures.
 - Volume 2: Figures this volume includes figures, drawings and diagrams which support Volume 1.
 - Volume 3: Technical Appendices this volume contains the technical background reports written and used to derive the environmental assessment.
- <u>Pre-Application Consultation (PAC) Report</u> provides information on the community engagement which has been undertaken prior to this submission with regards to the proposed development and details public engagement initiatives and attitudes towards the proposed development.
- Non-Technical Summary (NTS) (this document).

2 THE PROPOSED DEVELOPMENT

2.1 The Need for Development and Consideration of Alternatives

As noted above, the proposals to upgrade the east side of the Inner Dock is to primarily facilitate the export of HV cable manufactured at the adjacent Sumitomo Electrics factory. The close proximity of the proposed quay to the factory allows for the cables to be directly transferred from the factory, directly onto the cable carousels located on the deck of the cable installation vessels. Loading the cable via any other quay at Nigg would involve longer and more complicated transportation solutions, and added risk of damaging the cable. For this reason alternative locations were discounted in favour of the current proposed solution.

The existing revetment slope that forms the east side of the Inner Dock (Refer to Plate 3) is not suitable for ship berthing so a vertical quay wall is proposed. An optioneering exercise was carried out to determine the optimum design solution for the proposed quay. Factors considered included the need to support very heavy imposed loads, the need to retain the ability of the dock to be dewatered in the future, the speed of construction, the cost of the materials and the environmental impact of the construction method. The preferred design was chosen over other alternatives considered primarily due to the speed of construction, the



Plate 3: View north of existing Eastern Inner Dock Quay

relatively quiet method of pile installation, the ability of a solid structure to sustain the heavy loading predicted and the reliability of the projected final cost of construction.

In addition to serving the new cable factory, the new quay will greatly complement the existing east quay and provide both a load in and load out quay for offshore renewables projects conducted on the east side of the site. The 50m return along the north side of the dock, also allows for roll-on, roll-off operations to be conducted at the east side of the site, replicating the capability already available on the west side of the port.

2.2 The Proposed Development

The proposed development is to replace the existing rock armour revetment with 290m long heavy-duty quayside 36m wide, faced with a vertical retaining wall.

2.2.1 Construction Phase

It is anticipated that construction will commence in October 2024 with completion by early summer 2026. The development is planned to be operational in June 2026. The construction will be carried out for 20 months. The current construction sequence proposed after enabling works is detailed in Table 1. The construction programme will be regularly updated throughout the period.

Мо	nth	Site Activity / Construction Phase		
Start	End			
October 2024	January 2025	Preparatory Works including Design Acceptance, Site Investigation, Site Clearance, Enabling Earthworks, Formation of Temporary Working Platform		
February 2025	February 2026	Pile installation		
June 2025	December 2025	Tie rod installation		
September 2025	November 2025	Concrete cope construction		
September 2025	February 2026	Surface water drainage installation		
September 2025	April 2026	Cathodic protection		
January 2026	March 2026	Electrical installation and high mast lighting		
February 2026	March 2026	Quay furniture (bollards, life buoys etc)		

Table 1: Current Construction Programme

With the exception of tidal working to install tie rods and cases of emergency, construction operations shall take place within the following hours;

- Monday to Friday: 08:00 19:00; and
- Saturday: 08:00 13:00.

There will be no working on Sundays or Scottish Bank Holidays.

Major work activities will include:

- Enabling works Site surveys, site clearance, office relocation, installation of temporary office and welfare facilities, delineation of traffic and pedestrian routes, etc.
- Demolition Removal of revetment material /structures forming the dock side slopes and quay furniture.



Plate 4: Rock Armour Removal



Plate 5: Schematic of the temporary working platform

- Quay Wall Structure piles installed to form the front quay wall and rear anchor wall.

Temporary structures - construction of

temporary piling platform.

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Plate 6: Schematic of RD[@] Pile Installation



Plate 7: Cross-section through temporary working platform showing the centreline of the piled wall



Plate 8: Tie rod installation and backfilling

- Installation of tie-rods
- Earthworks Placement of import fill material behind new quay wall.

- Removal of crushed rock from marine side of the temporary platform
- Recovered crushed rock used as infill material.



Plate 9: Removal of temporary working platform and backfill of tie rods



- Installation of coping beam
- Levelling and construction of concreting surface slab.

Plate 10: Coping beam installation

Construction works will finish with installation of quay infrastructure and electrical works such as a lighting system. The development will also comprise a surface water drainage system.

It is envisaged that construction material will be delivered to site by both sea and road. Construction materials arriving by sea will primarily be tubular steel piles. The materials will be offloaded at one of the existing quays at Nigg. Once offloaded, the material will be transported to the designated laydown area. For deliveries by road, two access points are anticipated. Access point 1 will be via the main gate of PON which will be used for general deliveries and construction staff. It is estimated that about 10 ready mix concrete wagons (i.e. 20 two-way) will access the construction site per day during the concreting phases of the development.

The number of domestic and work vehicles allowed within PON is restricted and the existing offsite car park will therefore be utilized by the majority of site operatives. A dedicated minibus shuttle service will provide transportation for the site operatives to the works area from the car park.

Access point 2 is located further south and is normally locked. However, to minimise impact on the B9175, the Contractor will be given restricted access for the sole purpose of importing material from Castlecraig quarry. It is anticipated that the maximum number of 8 m³ tipper lorries used to transport the material from the quarry to the construction site will be 250 per day during the installation of the temporary working platform.

An overarching Construction Environmental Management (CEM) Document has been compiled and submitted as part of the EIAR. The CEM Document is one of the key management tools for highlighting site sensitivities and defining appropriate mitigation measures identified during the EIAR process (as summarised in the Schedule of Mitigation). The CEM Document will be developed to incorporate any other requirements identified in the conditions attaching to the planning consent and marine licence. It

will include a clear roadmap of the key roles and responsibilities of all those involved during construction works.

The information and procedures contained in the CEM Document will be used by the principal contractor to develop a detailed Construction Environmental Management Plan (CEM Plan) which will provide focused mitigation and control measures in order to ensure the environment is protected during the construction works. The CEM Plan will be submitted to the statutory authorities for approval prior to any Works commencing on site.

2.2.2 Operational Phase

Once operational the quay would be under the control of the PON as site operators. The PON has an Operational Environmental Management Plan (OEMP) and along with its tenants, operates an integrated management system to minimise environmental impacts associated with the port activities.

As noted above, the quay is unlikely to be used for turbine assembly and testing due to its restricted water depth being unsuitable for these activities. It is also noted that the primary function of the quay is to export HV cable from the Sumitomo Electrics cable factory. There are currently no manufacturing proposals which link wet storage and the use of the quay. Should this be a requirement of future capital projects the impact of wet storage on sensitive receptors i.e. potential for bird strikes and visual impacts) would be subject to further work under specific development proposals and supporting licence applications.

2.2.3 Decommissioning Phase

For a development of this type, decommissioning is not envisaged. Should decommissioning ever be planned in the future, Statutory Regulators would be consulted, and applications made at that time under whatever future regulatory regime exists at that point in the future.

3 EIA METHODOLOGY & SCOPING

3.1 General EIA Methodology

The purpose of an EIA is to identify and evaluate the likely significant effects of a proposed development on the environment, both direct and indirect, and then identify measures to mitigate or manage any significant adverse effects before a planning application is determined.

The EIA process provides an opportunity to 'design out' adverse effects wherever possible by making alterations to the design of the proposed development before the application is submitted and based upon feed-back from consultees.

Where significant adverse effects cannot be designed out, mitigation measures can be proposed to avoid, compensate, or reduce significant environmental effects to an acceptable level.

The environmental information gathered during the EIA is derived through a methodical process of identification, prediction, and evaluation of the likely significant environmental effects of the proposed development. This process includes: -

- identifying the sensitivity of the baseline conditions / receptors;
- predicted the magnitude of potential impacts;
- predict the significant effect of the impacts;
- detailing mitigation measures to limit impacts;
- predicting the potential residual effects as well as the potential cumulative impacts.

The results and findings are presented in full within the EIAR and summarised in this document.

3.2 **Pre-Application Consultation**

Following receipt of a notice of intention to develop the quay, the Highland Council organised a preapplication meeting on 13th June 2023 to which they invited representations from relevant sections of the Council as well as external bodies including NatureScot, SEPA and the Marine Directorate. Although not regarded as a Major Development, the Council felt that they should follow the procedures set down for a Major development. This would ensure that all affected parties would have the opportunity to identify any specific issues of concern particularly given the sensitive environmental status of the Cromarty Firth. Such a pre-application meeting is intended primarily to identify concerns thus assist the developer to address such concerns in designing the works and considering alternative construction methods.

In July 2023 the Council issued a "Response Pack" containing the formal responses received following the meeting. The key issues identified are summarised below:

- Ensuring designated sites are satisfactorily protected;
- Compliance with NPF4 including with respect to biodiversity;
- Addressing and mitigating amenity issues particularly noise during construction and operation;
- Consideration of the transport requirements generated, including construction traffic and by employees, in line with the sustainable travel and investment hierarchies; and
- Addressing the requirements of the National Marine Plan

3.3 The Scoping as part of EIA Process

Scoping is defined as 'the way in which key issues are identified from a broad range of potential concerns for inclusion in EIA studies, the areas affected, and the level to which they should be studied'. The scoping process enables the topics to be covered in the EIAR to be agreed and for those topics not considered pertinent to be scoped out of the study or reduced in scope (i.e. topics where it is unlikely that significant environmental effects will occur).

Scoping Requests were submitted to The Highland Council (THC) and MD - LOT on 15th December 2023. A Scoping Opinion was received from THC on 14 May 2024 and from MD-LOT on 4 June 2024.

3.4 Consultation

Consultation responses were obtained from the following organisations in respect of the Scoping Reports issued to THC and MD-LOT:

- The Highland Council
- Marine Directorate
- NatureScot
- Maritime & Coastguard Agency
- Royal Society for the Protection of Birds (RSPB) Scotland
- National Air Traffic Services
- Cromarty Firth Port Authority
- Scottish Environment Protection Agency (SEPA)
- Historic Environment Scotland (HES)
- Scottish Water

The opinions provided in the Scoping Opinion were used to inform the EIA process.

3.5 Scope of the Environmental Impact Assessment (EIA)

Based on the consultation undertaken and responses received to date, a view was reached on the key topics to be assessed as part of the EIA. These were:

- Airborne Noise
- Biodiversity
- Traffic Assessment

- Water Environment and Coastal Processes
- Other Supporting Assessments including Accident and Natural

Disaster; Air Quality; Archaeology and Cultural Heritage; Carbon Assessment; Material Assets and Waste; Socioeconomics; and Seascape, Landscape and Visual.

4 PLANNING

Current planning legislation requires planning applications to be considered in accordance with development plans. As such, the Proposed Development has been considered in relation to National policies, legislation, guidance, the Local Development Plan policies and Supplementary Planning Guidance. Those considered to be relevant to the Proposed Development are considered within Chapter 4 of the EIA Report and listed below:

- National Planning Framework 4 (NPF4);
- National Marine Plan 2015;
- Highland-wide Local Development Plan (HwLDP) (Adopted April 2012);
- Inner Moray Firth Local Development Plan (IMFLDP) (2015); and
- Inner Moray Firth Local Development Plan 2 (Intention to Adopt March 2024).
- Planning Advice Notes (PAN) PAN 33: Development of Contaminated Land, PAN 51: Planning, Environmental Protection and Regulation (Revised 2006), PAN 1/2013: Environmental Impact Assessment (amended May 2017) and Planning Advice on Flood Risk.

The Proposed Development is considered to be compliant with the above noted planning legislation.

5 AIRBORNE NOISE

5.1 Introduction

A Noise Impact Assessment (NIA) was carried out for the proposed development. Noise from the proposed development has the potential to impact surrounding existing residential receptors. The assessment has been supported by measurements of baseline background noise at areas representative of the most exposed properties surrounding the development site.

5.2 Impact Assessment and Significance of Effects

5.2.1 Construction Phase

The main impacts during the construction phase is the potential for construction activities, specifically from piling, reverse alarms and plant activities to impact local residents and marine mammals.

The advice provided in the Pre-application and Advice for Major Developments note in relation to construction noise is summarised below:

- The council have controls on construction noise under the Control of Pollution Act 1974 (COPA),
- It is expected that best practicable measures will be employed at all times to reduce the impact of noise;
- Particular consideration should be given to reducing noise from piling and reversing alarms;
- The applicant to ensure good communication with neighbouring residents; and
- If a COPA investigation into construction noise complaints are found to be reasonable then working hours or practices may have to change.

The principal contractor will develop a construction noise management plan specific to the proposed activities. The plan will form part of the CEM Plan which will be submitted to the council for approval prior to work commencing.

5.2.2 Operational Phase

In relation to operational noise the main impacts identified are from HV cable loading events and general site activities.

The operational noise associated with the export of HV cable from the adjacent Sumitomo Electrics cable factory was considered in a report prepared by Mabbett in November 2023. The report found that transspooling of HV cable within the PON is already conducted and that the operation of the new Sumitomo Electrics HV cable factory will therefore not introduce a new activity to the port and was unlikely to increase the noise levels at the closest sensitive receptors.

It should be noted that, as part of the Sumitomo Electrics cable factory planning application, GEN has made a commitment to investigate the introduction of shore to ship power at PON with the aim of reducing the cumulative noise and emissions from diesel generators, improving air quality and contributing to the overall sustainability of port operations. This commitment however is not related to the applications to upgrade the Eastern Inner Dock Quay.

During periods when the Eastern Inner Dock Quay is being used for general site activities, it may bring noise-generating sources closer to residential receptors than current operations. Noise monitoring surveys during the day and night time periods were undertaken in March 2024 at representative locations of the most exposed properties in Balnabruaich, Balnapaling, and Cromarty.

The noise levels collected were compared against noise levels measured in 2019 when a noise survey was conducted to support the planning application for the, now operational, East Quay in PON. The baseline noise levels measured in 2024 are generally noted to be lower or consistent in range with those measured in 2019. The 2024 noise dataset is therefore considered to represent worst-case background noise levels for the area, given that noise against a quieter background level will be more apparent to the listener.

A computer model of the port was developed to predict operational noise levels at residential receptors assuming activities occurring at the new quay. The assessment considered the change in noise levels with (i.e. background noise levels plus predicted modelled port noise operations) and with out (i.e. background noise levels only) with the difference in noise levels being used to assess the significance of any noise level increase. The greater the difference the larger the level of significance.

In relation to vibration and low-frequency noise, the noise assessment reviewed monitoring reports conducted by THC in response to noise complaints received from local residents regarding PON activities. The investigations concluded that noise from port operations were not regarded as a nuisance with specific moored boats / rigs being the source for many of the complaints rather than operations at the port. As such low frequency noise was taken into account within the noise assessment.

The assessment identified that the maximum change in noise levels as a result of port operations using the quay during the daytime and night time levels was at Balnapaling where the change was noted to be so small it would barely be noticed. The predicted change in noise levels in Balnabruaich, and Cromarty were even less than the noise levels predicted at Balnapaling.

Operational road traffic generation from the new eastern inner dock quay is expected to be minimal and infrequent. The change in noise due to the operation of the new quay is therefore also predicted to be negligible.

5.3 Proposed Mitigation Measures

The following mitigation measures are identified to reduce noise impacts:

- The Principal Contractor to develop a construction noise management plan specific to the proposed activities. The plan will form part of the CEM Plan which will be submitted to the council for approval prior to work commencing;
- Review and update of the existing Operational Noise Management Plan taking into account any recommendations from the shore to ship power feasibility study which GEN has committed to undertaking in support of the Sumitomo Electrics cable factory planning application; and
- Consideration of utilising electric powered mobile and fixed plant on site.

6 **BIODIVERSITY**

6.1 Introduction

The marine ecology assessment considered the impact of the Eastern Inner Dock Quay development on Important Ecological Features (IEFs) covering designated sites, marine and terrestrial habitats and wildlife including birds, marine mammals, otters and fish. It was carried out by experienced and competent ecologists who are members of the Chartered Institute of Ecology and Environmental Management (CIEEM) and follow its Code of Professional Conduct.

The assessment comprised a review of existing desk-based information available from biological records and bodies such as NatureScot and Marine Directorate and a field survey.

6.2 Impact Assessment and Significance of Effects

In order to assess the significance of impacts, consideration was given to the predicted duration, frequency, timing, geographical extent and reversibility of impacts, as well as the number of individual animals in a population who would be exposed, or the area of habitat affected.

Potential impacts considered were as follows:

- Removal of rock armour and construction of the temporary piling platform could give rise to suspended sediments within the water.
- Construction and operational activities could increase the risk of a pollution incident.
- Construction activities could cause over land visual and noise disturbance to fauna.
- Increased marine traffic during construction and operation of the quay could increase the risk of marine Invasive Non-Native Species (INNS) being introduced or spread.
- Increased marine traffic could also cause an increased risk of collision with marine mammals as well as disturbance.

Due to the piling methodology (through a temporary platform) it is it is not anticipated that underwater noise will be significantly generated through construction and so was not considered further within the assessment.

In addition as a result of the location (within an inner dock), scale (considered to be relatively small) and construction methodology (down-the-hole piling through a temporary working platform) the potential for impact on marine and terrestrial habitats and wildlife including birds, marine mammals, otters and fish was considered to be minimal therefore the Biodiversity Assessment focused on the qualifying features of the following Statutory designated sites:

- Moray Firth SAC (bottlenose dolphins and sub-tidal sandbanks);
- Dornoch Firth and Morrich More SAC (Harbour seal);
- Cromarty Firth Special Protection Area (SPA) (Birds comprising Bar-tailed Godwit, Common Tern and Waterfowl assemblage);
- Moray Firth SPA (birds comprising Red-throated Diver, Slavonian Grebe, Greater Scaup, Common Eider, Long-tailed Duck, Common Scoter, Velvet Scoter, Common Goldeneye, Regbreasted Merganser); and

• Cromarty Firth Site of Special Scientific Interest (SSSI) (mudflats, sandflats and saltmarsh habitats and non-breeding waterfowl: Bar-tailed Godwit, Red-breasted Merganser, Redshank, Whooper Swan and Wigeon).

During construction, as the impacts are temporary in nature, the risks to Important Ecological Features (IEFs) from suspended sediments in water, pollution incidents and overland visual and noise disturbance to fauna are considered not to be significant after mitigation. Operational phase impacts were also considered not to be significant.

The principal contractor will identify measures to ensure that plant and equipment used during the construction phase do not introduce INNS to the marine environment.

Any marine traffic accessing the port will need to adhere to the POCF Marine Safety Management Plan which is enforced by POCF as the Statutory Harbour Authority. The Marine Safety Management Plan includes measures to limit the introduction of marine INNS and collisions and/or disturbance of marine mammals.

A Preliminary Ecological Assessment (PEA) survey was conducted to identify the baseline environmental conditions at the site and surrounding area and thereby provide baseline information for the biodiversity assessment. Based on the above, a site specific Biodiversity Enhancement and Management Plan (BEMP) was developed to ensure the development would increase connectivity to habitats in the wider PON land ownership area proportionate to the scale of the project.

6.3 **Proposed Mitigation Measures**

The following comprises a summary of mitigation practices which will be followed during the construction phase of the proposed development:

- Pollution of the marine environment should be prevented in order to safeguard water quality and marine life which marine mammals rely on within these habitats;
- A CEM Plan detailing pollution prevention measures will be agreed with the regulatory authority prior to works commencing; and
- All personnel on the site should be made aware of the environmental sensitivities of the site (proximity to designated sites) via the site induction and additional task specific toolbox talks as required.
- An independent Ecological/Environmental Clerk of Works (ECoW) will be employed to audit and report on adherence to the CEM Plan as well as any other relevant planning consents, environmental permits, legislation and mitigation.
- A strict speed limit for onshore traffic of 15 mph will be implemented on site to reduce risk of collision with protected species.

7 TRAFFIC ASSESSMENT

7.1 Introduction

The assessment considered the potential effects of the proposed development on the surrounding road network and nearby sensitive receptors.

The methodology used in this assessment combined a number of approaches from published guidance and comprised of the following considerations;

- Review of the existing character of the road network and traffic levels;
- Determination of baseline traffic levels for the commencement of works;
- Estimation of the level of traffic generated during the construction phase;

- Assessment of the potential effects of construction traffic;
- Recommendation of mitigation, where appropriate; and
- Assessment of residual effects, taking any mitigation measures into account.

The study area includes the full length of the B9175 between the private quarry access to the south of the site and Tore Roundabout in the north with particular focus given to the section of carriageway through Arabella. It focuses on the construction phase only as the operational stage will only result in 14 additional employees who will operate from the South Quay offices.

7.2 Impact Assessment and Significance of Effects

The B9175 is a rural single carriageway of industrial standard. Due to the location of the site, traffic volumes on the road in the immediate vicinity of the site are considered to be extremely low i.e. up to 20% of road capacity.

A bus stop is located on the B9175 to the south of the site at the Nigg Ferry Terminal turning circle. Highland Ferries operate the Cromarty to Nigg ferry at 30 minute intervals between 0800 – 1815 between June – September. The ferry service connects the site with additional bus services in Cromarty thereby reducing the road journey to Nigg from Inverness by circa 60km.

A footway is present on the eastern side of the B9175 carriageway and extends from circa 1.5km north of the development site to Nigg Ferry Terminal in the south. A core path is present to the east of Nigg Ferry Terminal connecting the B9175 with Castlecraig in the east. Although the Nigg Hotel and ferry service are within walking distance of the site, settlements to the north are out with reasonable walking distances,

The B9175 forms part of National Cycle Route 1, from Nigg Ferry Terminal to the north of the site prior to diverting east at Lower Pitcalzean. The carriageway is of a good standard in the main and traffic flows are low, making the route conducive to cycling.

Construction materials will arrive by both sea and road. Construction materials arriving by sea will be offloaded at one of the existing quays at Nigg and as such there will be no need to access the public road.

For deliveries by road, two access points are anticipated. Access point 1 (northern haulage route) will be via the main gate of PON which will be used for general deliveries and construction workers. It is anticipated there will be 20 - 30 construction workers present at any one time. Assuming construction workers will travel in groups of 2, then this equates to a maximum of 15 vans arriving in the morning and leaving in the evening. It is expected that the ready mix concrete will be delivered from Pat Munro Caplich Quarry, Alness with approximately 10 concrete wagons being delivered to the site daily (i.e. 20 two-way trips) over about a 25 week period.

Access point 2 is located further south and is normally locked. However, to minimise impact on the B9175, the Contractor will be given restricted access for the sole purpose of importing material from Castlecraig Quarry 1.5km to the east. It is estimated that around 129,692 m³ of material will be sourced from the quarry which roughly equates to 250 daily movements of 8 m³ tipper lorries over a 21 week period.

The impact on the local road network during construction of the quay is considered to be temporary (occurring over an 18 month period) and conditions will return to normal once the quay is operational. Although the percentage of HGVs on the northern haulage route would increase marginally on the B9175, the capacity of the road is considered to be sufficient to accommodate the additional demand during this period. The impact on the A9 will be further reduced as a result of the larger traffic volumes on this strategic road network.

For the southern route, the quarry currently transports crushed rock along this route to clients therefore these trips will simply be diverted when delivering to the development. It is also noted there are no key receptors between the site and the private quarry road on the B9175.

In conclusion, any disturbance to local residents and other road users in terms of delay or impact is considered to be temporary and can be managed through a Construction Traffic Management Plan. It is considered that the small changes to travel patterns and the operations of nearby junctions will not impact the safety or efficiency of the road network. It is also considered that construction traffic will have minimal impact on pedestrians, cyclists and public transport.

7.3 Proposed Mitigation Measures

As mentioned above, to enhance the operation and safety of the construction phase, the principal contractor will develop a Construction Transport Management Plan (CTMP) which will be adhered to during the construction phase. The CTMP will provide measures to remove, reduce or offset any impacts from construction vehicles and operations.

In addition, the construction site would be registered with the Considerate Constructors Scheme which requires constructors to comply with a Code of Considerate Practice to minimise impacts of noise, dirt and inconvenience amongst others.

8 WATER ENVIRONMENT AND COASTAL PROCESSES

8.1 Introduction

This section provides an assessment of the implications of the proposed development on the water environment and coastal processes. The water environment is considered to encompass hydrology, hydrogeology and water quality, whilst coastal processes are considered to encompass tides, waves and sediment transport processes. Both construction and operational phase of development were considered for the assessment.

The Water Framework Directive (WFD) (Council Directive 2000/60/EC) aims to protect and enhance water bodies within Europe and covers all estuarine and coastal waters out to 1 nautical mile. Therefore, the implications of the directive was considered in the assessment to ensure the development had no deterioration in the quality of surface or groundwater and that good ecological status was achievable.

8.2 Impact Assessment and Significance of Effects

The proposed works will involve the following key activities which have the potential to impact the water environment within the site and environs:

- Construction activities (bulk excavations, port infrastructure including quay and platform);
- Site surface water drainage; and
- Port operations.

The receptors considered in the assessment were:

- Moray Firth SAC (within 500m and selected for its bottlenose porpoise and subtidal sandbanks);
- Cromarty Firth SPA, SSSI and RAMSAR site (within 650m and designated for breeding and nonbreeding birds and intertidal mudflats and sandflats);
- Rosemarkie to Shandwick Coast SSSI (within 900m designated for coastal environments and breeding birds); and

• The water quality of the Outer Cromarty Firth (classified under the WFD as being of overall 'Good' status in 2022, with a physico-chem status of 'High' and a hydromorphology status of 'Good').

The soils present within the site are not considered natural and are likely to have been disturbed and replaced as a result of previous land-uses and development phases. There are no watercourses located within the site boundary and no direct impacts on surface watercourses is anticipated. Overall, the inflow of freshwater remains insignificant relative to the much larger volume of seawater exchanged within the Cromarty Firth. The development is considered to be a water compatible use therefore the risk of flooding was not considered further within the assessment.

The prevailing tidal currents within the Inner Moray Firth are of generally low velocity, flowing parallel to the shoreline across the mouth of the Cromarty Firth, where they are locally influenced by flows entering and leaving the firth. Within the Cromarty Firth generally the ebb tide currents are greater in magnitude than those on the flood tide. Given the orientation of the Moray Firth coastline and the entrance to the Cromarty Firth swell wave penetration from the Moray Firth into the Cromarty Firth is limited to eastern sectors and may be locally significant during storms from that direction. More generally however, the wave climate within the Cromarty Firth is dominated by wind waves generated within the Cromarty Firth, with longest fetches from the south-west which is also the prevailing wind direction.

In the immediate vicinity of the existing PON localised disturbance to the wave climate occurs as a result of diffraction and reflection from quay walls and the surrounding shoreline. As the proposed development is located within the footprint of the existing quay, which was reclaimed from the estuary in the 1970's, 'natural' flows are considered to be locally affected¹.

The Cromarty Firth is a glacial valley formed during the last Ice Age and subsequently flooded as a result of post-glacial sea level rise. Significant sediment deposits are present within the firth as a result of post-glacial erosion and sedimentation processes, with present day sediment processes within the firth largely relating to the re-working of this material. The coastline to the east of the development site, and on the opposite shore of the firth to the south, has remained relatively stable with local changes to the coastline at the development site being a result of land reclamation and hard engineering during previous phases of the development.

Sediment transport in the vicinity of the proposed development site indicate that sediment can move from sandbanks in the Inner Moray Firth to the Cromarty Firth episodically as a result of storm wave driven transport, with sand stirred as a result of wave action off the shallower areas of seabed. This material then subsequently becomes re-worked by wave action towards the shoreline, with resultant long-shore transport westwards into the Cromarty Firth. These processes result in sediment being deposited within deeper waters of the dredged channels at the proposed development site. These sediment deposits therefore originate predominately from the Inner Moray Firth, with limited sediment input from the Nigg Bay to the west.

The potential impacts on the water environment and coastal processes include:

- Water Environment:
 - o Hydrology alterations including increased run-off and alteration of flow patterns.
 - Contamination of coastal water and sediments through spillages, leakages and/or sediment transfer (oils, fuels, welfare facilities, and suspended solids).
- Coastal Processes:
 - Changes in local wave climate.
 - Changes in local tidal regime.
 - Changes in local sediment transport regime.

¹ Royal Haskoning DHV (2013). Nigg Energy Park: Sedimentation and Wave Modelling (Main Report & Appendices). Global Energy Nigg Ltd.

Due to the small catchment and the site consisting of reclaimed land on the coastal edge, the potential impacts of surface water flow alterations and increased run-off to coastal waters is considered to be negligible. The formation of the temporary platform could potentially cause plumes of suspended solids and a reduction in water quality with a resultant impact on aquatic life. Given the relatively coarse nature of the imported stone and the localised nature of the temporary platform within the confines of the inner dock, impacts will be localised and short term in duration.

Due to the sheltered location of the proposed development within the existing dry dock, and the existing hard engineered character of the shoreline, the anticipated impact to tidal currents and wave climate would be minimal. As a result changes in sediment transport process will also be minimal.

8.3 **Proposed Mitigation Measures**

The risk of impacts from pollution during construction will be managed through a CEM Plan including a Pollution Incident Response Plan (PIRP). Best practice will be adopted throughout all phases of development, following current guidance. Surface water drainage will be designed to comply with Scottish Environment Protection Agency (SEPA) guidelines.

During the operational phase an Operational Environmental Management Document will be in place, ensuring best practice is followed. This will include an updated Pollution Incident Response Plan taking account of operational activities and risks.

Taking into account the prescribed mitigation measures, the assessment concluded that the development will not result in any significant effects on the water environment or coastal processes.

9 SUPPORTING ASSESSMENTS

9.1 Accident and Natural Disaster

Major accidents and/or disasters should be considered where the development has the potential to cause loss of life, permanent injury and or temporary or permanent destruction of an environmental receptor. This section considered the potential for such eventualities in the context of the new Eastern Inner Dock Quay at PON.

9.2 Impact Assessment and Significance of Effects

The potential for major accidents and/or disasters was considered in accordance with the Institute of Environmental Management and Assessment (IEMA) guidance document "*Major Accidents and Disasters in EIA: A Primer*", hereafter referred to as "The Primer". The assessment considered the following:

- The development itself was considered in regard to being a source of major accidents or vulnerability to disasters;
- Interactions with external hazards or associated activity were also considered; and
- If a major accident or disaster occurred would the existence of the development increase risk of significant effects to environmental receptors.

The Site is not located within an area of significant seismic activity, nor are climatic factors prone to creating natural disasters such as tsunamis, hurricanes or catastrophic fluvial flooding.

The construction works are considered to be temporary in nature and not considered to be of a scale that would represent a significant source of major accidents.

The construction work would be covered by the Construction (Design and Management) Regulations 2015 under the control of the principal contractor. The construction works are concentrated to the east side of the Eastern Inner Dock Quay and will be segregated from the operational areas by fencing. The only external interaction will be related to import of material to site as part of the works. A Construction Transport Management Plan will be agreed with the Council prior to work commencing and will be enforced throughout the construction phase of the development.

An overarching CEM Document has been developed which provides a framework for developing a site specific CEM Plan by the contractor which would be submitted for regulatory approval prior to works commencing.

Once the work to upgrade the quay are complete the area would return to being under the control of the PON as site operators. It is considered that the external interactions associated with the operation of the quay will be comparable in nature to the current use. The PON has an Operational Environment Management Plan (OEMP) and along with its tenants, operates an integrated management system. Any marine traffic accessing the port will need to adhere to the POCF Marine Safety Management Plan which is enforced by POCF as the Statutory Harbour Authority.

On the basis of the above information the assessment concludes that:

- 1. The development itself if not a source of a hazard that could result in a major accident and/or disaster;
- 2. The development is unlikely to interact with external hazards or associated activities; and
- 3. The development will not increase the risk of significant effects due to other hazards occurring.

9.2.1 Proposed Mitigation Measures

On the basis of the assessment carried out above, the mitigation measures with regards to accidents will be addressed in the proposed site specific contractors CEM Plan during the construction phase. No additional mitigation measures are proposed for the Operation of the quay.

9.3 Air Quality

9.3.1 Introduction

The potential for impacts on local air quality was considered at the Scoping Stage of the EIAR. The scoping assessment concluded that as the development was not located within an area known to have poor air quality in combination with controlling construction dust emissions through the development of a Construction Dust Management Plan (CDMP), the consideration of Air Quality was therefore scoped out of forming a full Chapter of the EIAR.

9.3.2 Impact Assessment and Significance of Effects

<u>Construction Phase</u> - During the construction phase of the development there is risk of impacts arising from;

- Vehicle movements associated with the construction site, both from staff commuting to the site and the movement and delivery of construction materials;
- Dust emissions generated from construction activities, including earthworks, trackout and demolition; and
- Emissions from plant equipment and non-road mobile machinery (NRMM).

These emissions may give rise to air quality impacts at human or ecological receptors and lead to increased particulate matter concentrations and dust nuisance and soiling.

The potential for construction dust to impact surrounding sensitive receptors was screened against the criteria provided in Guidance on the Assessment of Dust from Demolition and Construction. no residential receptors within 50m of the public highway which will be used by construction vehicles up to

250m of the construction site entrance. In relation to ecological receptors, there are no designated sites in close proximity to the site boundary or public highway construction routes. As such a detailed construction dust risk assessment is not required.

<u>**Operational Phase**</u> – Once the work to upgrade the quay are complete the area would return to being under the control of the PON as site operators with operational activities being conducted in accordance with the OEMP.

However public consultation events held in March 2024 highlighted a concern regarding the potential for shipping emissions to impact local air quality. As the PON leases their facilities to tenants on a project-by-project basis the type of vessel visiting the port and its associated emissions are out with their control. It should be noted that shipping emissions are the responsibility of shipping companies as required by the International Convention for the Prevention of Pollution from Ships (MARPOL Annex VI²)

9.3.3 Proposed Mitigation Measures

It is recommended the Principal Contractor incorporate standard industrial practises to reduce dust emissions within the CEM Plan taking into account the site's surrounding environment.

9.4 Archaeology and Cultural Heritage

The potential for impacts on Archaeology and Cultural Heritage as a result of the development was considered at the Scoping Stage of the EIAR.

The Site was found to have a low archaeological potential, and no significant effects were anticipated upon the designated heritage assets within the study area. A Protocol for Archaeological Discoveries (PAD) was proposed in the event that undiscovered archaeological deposits survived. As such it was considered appropriate to scope out Archaeology & Cultural Heritage.

9.4.1 Impact Assessment and Significance of Effects

Groundworks comprising onshore excavation and land reclamation required for the proposed development have the potential to impact upon hitherto unknown buried archaeological remains. However, the inner dock is part of PON which was reclaimed from the eastern edge of Nigg Bay in 1972 to form the fabrication yard. Due to previous development and ground levelling since it was reclaimed, the Site is considered to be of low archaeological potential – meaning that it is possible, but unlikely, that undiscovered archaeological deposits survive.

In addition, as the development site is part of the larger PON comprising laydown areas, fabrication sheds and docks in conjunction with the local topography and the character of the surrounding heritage assets, significant setting effects will not occur.

9.4.2 Proposed Mitigation Measures

A Protocol for Archaeological Discoveries (PAD) has been developed and included in the CEM Document. The PAD provides a framework to facilitate the reporting of unexpected or chance archaeological finds should any be encountered during the works.

9.5 Carbon Assessment

9.5.1 Introduction

The purpose of this assessment was to establish the carbon emissions associated with the proposed development by setting out the general principles of a carbon management process, to promote carbon

² <u>https://www.imo.org/en/OurWork/Environment/Pages/Index-of-MEPC-Resolutions-and-Guidelines-related-to-MARPOL-Annex-VI.aspx</u>

and cost reduction in infrastructure delivery. The framework looks to reduce carbon and cost through more intelligent design, construction and use.

9.5.2 Impact Assessment and Significance of Effects

The Whole Life Carbon Assessment (WLCA) methodology considers various stages of the development. The following assumptions were considered while undertaking the assessment:

- The proposed development lifetime and the Reference Study Period has been assumed to be 60 years.
- No replacement of any components will take place during the Reference Study Period.
- The distance between the source of construction material (A4) and the proposed development site will be 20 kms except Castlecraig quarry which is 1.5 km.
- The distance between the disposal site (C4) and the proposed development site will be 50 kms.
- The distance between the source of construction material (A4) that will be brought by Sea will be 100 kms.
- No major changes are anticipated in the energy or water usage due to the proposed development compared to existing usage of the site.

The total carbon emission from the proposed development is expected to be 10,343 tonnes of $CO_{2}e$ which is considered to be relatively low in comparison to other quay projects. This is mainly due to construction of the main pile wall, anchor piling, concrete slab and creation of the temporary piling platform.

9.5.3 Proposed Mitigation Measures

The carbon reduction strategies that can be considered for the proposed development are as follows:

- Using materials with low embodied carbon impacts: Materials such as recycled steel for reinforcements and timber from sustainably managed forests, would help to minimize the carbon footprint of the proposed development.
- Sourcing construction materials locally: This would result in a reduction of transportation distances, which in turn cuts down on carbon emissions associated with transportation.
- Implementing efficient construction processes: Construction techniques resulting in minimizing the energy consumption and waste generation would reduce the overall environmental impact.
- Reducing wastage during the construction process: It is crucial for minimizing environmental impact and maximizing resource efficiency. Strategies such as careful material planning, recycling and reusing construction waste, and implementing lean construction practices can significantly decrease the amount of waste generated on-site, leading to a more sustainable construction process.

9.6 Material Assets and Waste

9.6.1 Introduction

This section addresses the issue of material assets and waste generation during the construction phase of the proposed development. Once built, the Eastern Inner Dock Quay will be incorporated into the existing operations at PON with activities, including waste management, being undertaken in accordance with the OEMP. As such the operational phase of the development has been scoped out of this assessment.

9.6.2 Impact Assessment and Significance of Effects

The waste hierarchy will be employed throughout the construction works and will aim to avoid, or minimise waste production where possible, re-use material where possible, segregate waste which cannot be reused for recycling where available and implement the correct methods of disposal should none of the aforementioned methods be feasible.

Specifically, the existing rock armour will be removed and transported to a crusher plant located on site where it will be processed and then reused as quay infill material. Although crushed rock will be imported to the development site to form the temporary working platform this will largely be reused as quay infill once the quay wall construction is completed.

It is considered that other waste materials generated as part of this development will be minor. It is not expected that hazardous waste will be generated as part of the works.

9.6.3 Proposed Mitigation Measures

This reuse of material is considered to be in line with Policy 12 of NPF 4 "... support the circular economy and meet identified needs in a way that moves waste as high up the waste hierarchy as possible". As such no additional mitigation measures are proposed.

9.7 Socio-economics

9.7.1 Introduction

The section addresses the socio-economic effects of the proposed development. The assessment considered the effects during. both the construction and operational phase of the development.

9.7.2 Impact Assessment and Significance of Effects

The proposed development would aid in encouraging new investment, jobs, skills development and income. It will also result in employment and business opportunities for local and regional companies. The total capital investment in the region of £30 million is estimated of which about £5 million will benefit businesses at the Highland level.

There will be a range of construction opportunities to local and national companies. This will include groundworks, steelworks, laydowns, port works, landscaping, civil engineering and construction contracts. It is estimated that there will be 35 local construction job opportunities directly from the proposed development which could potentially generate around £2.1 million to the Highland economy. \pounds 300,000 has been spent on pre-development fees to date, of which £150,000 has benefited Highland based businesses.

At present the Port of Nigg employs 22 permanent staff, although around 350 people work through the port on a daily basis. The development will generate 14 new staff members who will be employed by Global Port Services Scotland Ltd based at the South Quay offices. It is expected that the majority of these opportunities would be taken up by locals or people relocating to the area as it is difficult to commute, considering the location of the port.

In addition to the 14 jobs, there will be further jobs in the Water Transport supply chain, and it is expected to be around 18 full time employee's and in salary terms £1.1 million.

The estimated socio-economic effect assessment indicates that the Proposed Development can bring substantial additional benefits to the Inner Moray Firth/Highland areas, and to Scotland and the UK as a whole. It represents a significant investment that embodies the latest advancement in port operations.

The proposed development has the potential to contribute significantly towards regional and national policy objectives. Importantly, the Proposed development can support the ambitions set out in the national and regional economic strategies. It will support local business through the generation of supply chain opportunities and the creation of jobs, with the addition of skills development opportunities.

Notably the project represents a new and significant capital investment which aligns well with the area's green credentials. The employment, economic and financial impacts are enhanced through wider strategic impacts associated with strengthening the perception of the area as a place to live, work, visit

and invest. This squarely fits the ambitions of the new Inverness and Cromarty Firth Green Freeport which the port is part of.

There are no direct community benefit obligations specified for this development, but PON make charitable donations on a regular basis for charities and local organisations in Cromarty and Nigg.

Although training and apprenticeship opportunities are not expected to arise directly from the quayside build, significant prospects will emerge at the Sumitomo Electrics Cable Manufacturing Facility, for which the quayside development serves as a catalyst.

To conclude, the proposed development would significantly contribute to the local and regional economy by not only providing employment opportunities but also by supporting local businesses.

9.8 Seascape, Landscape and Visual

9.8.1 Introduction

A detailed review of the potential impacts of the proposed development on Seascape, Landscape and Visual (SLVIA) interests within the study area was undertaken at the scoping stage of the EIAR. The review considered the potential for SLVIA impacts because of construction and operation of the quay on surrounding sensitive receptors.

9.8.2 Impact Assessment and Significance of Effects

Taking into account the existing industrial use of the site and its immediate setting, and the associated prominent land and sea based activity taking place such as loading and off-loading operations to and from vessels and barges, including oil platforms being towed, any construction activity would generally be experienced within this context. Although any activity associated with the construction of the proposed development would be very noticeable from some nearby areas, this would be characteristic to its immediate setting. Consequently, the magnitude of landscape and seascape effect would be relatively limited and are very likely to be not significant on its integrity.

It is considered that the operational effects of the proposed development would result in a smaller magnitude of effect than those predicted during the construction phase and therefore would be not significant.

In general, it is clearly evident that the existing industrial land uses and activity taking place in and around the quay would significantly limit the magnitude of all landscape and visual effects.

9.8.3 Proposed Mitigation Measures

As the existing industrial land uses and activity taking place in and around the quay significantly limits the magnitude of all landscape and visual effects, no landscape or visual mitigation has been incorporated into the proposed development.

10 EIAR CONCLUSIONS

10.1 Schedule of Mitigation

The mitigation and enhancement measures identified by the specialist environmental studies throughout the EIA process are compiled to form a Schedule of Mitigation. The Schedule is designed to provide a comprehensive summary of all mitigation measures that would require to be carried out in the construction and operation of the proposed development, to ensure that the environmental assessment outcomes discussed throughout this EIAR are reached, e.g. to ensure that significant adverse effects are avoided where applicable and possible.

The Schedule of Mitigation would form the basis of the subsequent Construction Environmental Management Document (CEMD).

10.2 Summary of Significance of Effects

This NTS reports upon the findings of the EIAR, which has been shaped by survey, consultation and assessment. The purpose of the EIAR, and the EIA process, is to establish potentially significant environmental effects and avoid or mitigate these where applicable.

The table below details the residual effects of the proposed development after the mitigation measures outlined in the Schedule of Mitigation have been applied.

Topics	Construction Phase	Operational Phase
	Impact	Impacts
Airborne Noise	Not Significant	Not Significant
Biodiversity	Not Significant	Not Significant
Traffic Assessment	Not Significant	Not Significant
Water Environment and Coastal Processes	Not Significant	Not Significant
Supporting Assessments	Not Significant	Not Significant

 Table 1 – Summary of Significance of Impacts (Residual Post-Mitigation)