Chris Buscall
Environmental Compliance Lead

PO Box 332
Cooma NSW 2630

20/04/2020

Dear Chris

Snowy 2.0 Segment Factory (CSSI 10034)
Environmental Management Strategy

I refer to the Environmental Management Strategy which was submitted in accordance with Condition 1 of Schedule 4 of the Infrastructure Approval for the Snowy 2.0 Segment Factory (CSSI 10034).

The Department has carefully reviewed the document and is satisfied that it is prepared in accordance with the condition.

Accordingly, the Secretary has approved the Environmental Management Strategy (Revision D, dated 7 April 2020). Please ensure that the approved plan is placed on the project website at the earliest convenience.

If you wish to discuss the matter further, please contact Wayne Jones on 02 6575 3406.

Yours sincerely

Nicole Brewer
Director
Energy Assessments

As nominee of the Planning Secretary

S2-FGJV-ENV-PLN-0065

SNOWY 2.0 SEGMENT FACTORY – ENVIRONMENTAL MANAGEMENT STRATEGY

Approval Record			
Document preparation, review and approval		Name in print	Signature
Prepared by	Environmental consultant	V. Gillies	
Reviewed by	Environmental consultant	R. Walker-Edwards	
Verified by	Environmental Manager	L. Coetzee	
Approved by	Project Director	A. Betti	

Document Revision Table		
Rev.	Date	Description of modifications / revisions
A	19.12.2019	Initial draft issued to Snowy Hydro for review
B	08.03.2020	Updated to include Snowy Hydro comments and draft conditions of approval.
C	02.04.2020	Updated to include Snowy Hydro comments and for issue to DPIE
D	08.04.2020	Updated to address DPIE comments. For issue to DPIE

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ABBREVIATIONS AND DEFINITIONS

Acronym	Definition
AMP	Asbestos Management Plan
AS/NZ	Australian Standard/ New Zealand Standard
BC Act	*Biodiversity Conservation Act 2016*
BCD	Biodiversity and Conservation Division (part of the Department of Planning, Industry and Environment)
BMS	Future Generation Business Management System
CSSI	Critical State significant infrastructure
DPIE	NSW Department of Planning, Industry and Environment
DPI	Department of Primary Industries
EEC	Endangered Ecological Communities
EIS	Environmental Impact Statement
EMS	Environmental Management Strategy
Environmental aspect	Defined by AS/NZS ISO 14001:2004 as an element of an organisation's activities, products or services that can interact with the environment
Environmental impact	Defined by AS/NZS ISO 14001:2004 as any change to the environment, whether adverse or beneficial, wholly or partially resulting from an organisation's environmental aspects
Environmental objective	Defined by AS/NZS ISO 14001:2004 as an overall environmental goal, consistent with the environmental policy, that an organisation sets itself to achieve
Environmental policy	Statement by an organisation of its intention and principles for environmental performance
Environmental target	Defined by AS/NZS ISO 14001:2004 as a detailed performance requirement, applicable to the organisation or parts thereof, that arises from the environmental objectives and that needs to be set and met in order to achieve those objectives
EP&A Act	*Environmental Planning and Assessment Act 1979*
EPA	NSW Environment Protection Authority
EPBC Act	*Environment Protection and Biodiversity Conservation Act 1999*
EPL	Environment Protection Licence
ESCP	Erosion and Sediment Control Plan
Future Generation	Future Generation Joint Venture
HSE	Health, Safety & Environment
ISO	International Standards Organisation
JHA	Job Hazard Analysis
LG Act	*Local Government Act 1993*
MAE	Major Accident Event
MAP	Major Accident Prevention
MNES	Matters of national environmental significance under the EPBC Act 1999
NATA	National Association of Testing Authorities
NSW	New South Wales
NMMP	Noise Monitoring and Management Plan

Acronym	Definition
OEH	Office of Environment and Heritage
PIRMP	Pollution Incident Response Management Plan
Planning Secretary	Secretary of the Department of Planning, Industry and Environment
POEO Act	*Protection of the Environment Operations Act 1997*
project, the	Snowy 2.0 Segment Factory
REMM	Revised environmental management measures
RMS	Roads and Maritime Services (now Transport for NSW)
RTS or Submissions Report	*Segment Factory Response to Submissions*
Segment Factory EIS	*Environmental Impact Statement – Proposed Segment Factory*
Snowy 2.0	A pumped hydro-electric expansion of the Snowy Scheme that will link the two existing reservoirs of Tantangara and Talbingo through underground tunnels, and include a new underground power station with pumping capabilities
Snowy Hydro	Snowy Hydro Limited
SSI	State Significant Infrastructure
TMP	Traffic Management Plan

1. INTRODUCTION

1.1. Overview

Snowy Hydro Limited (Snowy Hydro) is constructing a pumped hydro-electric expansion of the Snowy Mountains Hydro-electric Scheme (Snowy Scheme), called Snowy 2.0. Snowy 2.0 will be built in two stages: Exploratory Works and Main Works.

Snowy 2.0 will link the existing Tantangara and Talbingo reservoirs through a series of new underground tunnels and a hydro-electric power station. Most of the project's facilities will be built underground, with approximately 27 kilometres of concrete-lined tunnels constructed to link the two reservoirs and a further 20 kilometres of tunnels required to support the facility. Intake and outlet structures will be built at both Tantangara and Talbingo Reservoirs.

Snowy 2.0 will increase the generation capacity of the Snowy Scheme by an additional 2,000 MW, and at full capacity will provide approximately 350,000 MWh of large-scale energy storage to the National Electricity Market (NEM). This will be enough to ensure the stability and reliability of the NEM, even during prolonged periods of adverse weather conditions.

Salini Impregilo, Clough and Lane have formed the Future Generation Joint Venture (Future Generation) and have been engaged to deliver both Stage 2 of Exploratory Works and Snowy 2.0 Main Works. To support the construction of these projects, a precast concrete segment factory is required to be established to enable the concrete segments that line the tunnel to be manufactured.

This strategy has been prepared for the Snowy 2.0 Segment Factory (Segment Factory or project).

1.2. Background

The Segment Factory is required to manufacture precast concrete segments exclusively to line the tunnels being excavated for Snowy 2.0 Exploratory Works and Main Works. The construction and operation of the Segment Factory is essential for the efficient completion and realisation of Snowy 2.0. The Segment Factory would operate the production and transportation approximately 14,500 precast reinforced concrete tunnel rings (containing 130,500 segments) to be exclusively used on the Snowy 2.0 project.

The Segment Factory will be located on industrial-zoned land in the south-eastern corner of Polo Flat, an industrial zoned area located to the east of Cooma. The operational facility will contain a concrete batching plant, a warehouse building for the manufacture of precast concrete segments (the precast building), uncovered storage areas for raw material and segments, vehicle parking areas and associated offices and workshops.

Primary inputs for the Segment Factory include aggregate, sand, cement and rebar steel. Primary outputs include tunnel segments to be transported to the construction sites of Snowy 2.0 within the Kosciuszko National Park (KNP).

An environmental impact statement was prepared for the Segment Factory (*Environmental Impact Statement – Proposed Segment Factory* (Segment Factory EIS)) to assess the impact of the project on the environment.

The Segment Factory EIS was submitted to Department of Planning, Industry and Environment in September 2019 and was publicly exhibited between 10 October 2019 and 6 November 2019. A total of 33 submissions were received, including 26 from the public, six from NSW government agencies and one from Snowy Monaro Regional Council. Of the 26 public submissions, 22 related to Snowy 2.0 Main Works rather than the Segment Factory. In December 2019, the response to submissions was prepared (*Segment Factory Response to Submissions*) (Submissions Report or RTS). Following consideration of this document and the Segment Factory EIS, approval was

granted by the Minister for Planning and Public Spaces through issue of Infrastructure Approval SSI 10034.

1.3. Purpose

This Environmental Management Strategy (EMS) presents the framework for environmental management of the construction and operation of the Segment Factory.

This EMS has been prepared to address the requirements of the Infrastructure Approval (SSI-10034) (the Approval) issued for Snowy 2.0 Segment Factory on the 31 March 2020, the Segment Factory EIS, and the revised environmental management measures (REMMs) within the Submissions Report.

The Submissions Report requires an Environmental Management Plan (EMP) to be prepared for the project. To limit duplication, a separate EMP has not been prepared and instead, this EMS has been prepared to meet both the requirements of the conditions of the Approval in the preparation of an EMS, and any requirements in the Submissions Report in relation to the EMP.

The purpose of this EMS is to provide a structured approach to the management of environmental issues during the construction and operation of the project. Implementing this EMS will ensure that Future Generation, and therefore Snowy Hydro themselves, meet regulatory and approval requirements in a systematic manner. In particular this EMS:

- describes the project and activities to be undertaken;
- describes the strategic framework for environmental management of the project;
- identifies the approvals, licences and permits that relate to the project;
- describes the roles and responsibilities of personnel in relation to environmental management;
- describes the procedures that will be implemented for community consultation, notification, and complaints management; and
- outlines a monitoring regime for construction and operation.

Specific on-site management measures identified in this strategy will be incorporated into sub-plans of this EMS. These aspect specific documents will be prepared for relevant activities and will detail the management measures to be implemented. Construction personnel will be required to undertake works in accordance with this EMS and the mitigation measures identified in the site-specific documents.

1.4. Plans Prepared to the Satisfaction of DPIE

This EMS and relevant management plans (as required by the conditions of Approval) will be submitted to the Department of Planning, Industry and Environment (DPIE) for confirmation that the document has been prepared to the satisfaction of the Secretary.

1.5. Consultation

Whilst there is no specific consultation requirement for this EMS, the Approval requires that some management plans, strategies and programs which are required to be prepared for the project be developed in consultation with relevant stakeholders and agencies.

Consultation required for these management plans, strategies and programs is detailed within Table 1-1, with ‘S’ indicating that the document is to be prepared to the satisfaction of that agency and ‘C’ indicating that consultation is required.

Table 1-1: Consultation required for the management plans, strategies and program

Document	Condition or requirement	Timing of document	Dept of Planning, Industry & Environment	Environment Protection Authority	Snowy Monaro Regional Council	Roads and Maritime Services
Environmental Management Strategy	Condition 1 of Sch 4	Prior to development	S			
App B1 - Traffic Management Plan	Condition 10 of Sch 3	Prior to construction	S		C	C
App B2 - Noise Monitoring and Management Plan	Condition 13 of Sch 3	Prior to operation	S			
App B3 – Flood Emergency Response Plan	Condition 26 of Sch 3 REMM WM01	Prior to operation	S		C	
Required to be prepared by the EIS or RTS						
Asbestos Management Plan	EIS Contamination Assessment section 11	No timing				
Weed Management Control Plan	REMM BIO06	No timing				

Note: 'S' indicates that the document is to be prepared to the satisfaction of that agency; 'C' indicates that consultation is required

1.6. Distribution

Future Generation's Environmental Manager will coordinate the preparation, review and distribution, as appropriate of environmental documents. During construction and operation, environmental documents will be stored at site offices and will be readily available upon request to Future Generation's Environmental Manager (or delegate).

This EMS and sub-plans, programs or strategies will be made available to all personnel and subcontractors either by hard copy of through the project document control system. An electronic copy will also be placed on the project website. This document is uncontrolled when printed.

Registered copies will be distributed to:

- Snowy Hydro's Project Director;
- Snowy Hydro's Environmental Manager;
- Future Generation's Project Director; and
- Future Generation's Environmental Manager.

1.7. Review and Improvement

1.7.1. Revision

In accordance with condition 2 of Schedule 4 of the Infrastructure Approval, this EMS shall be updated and reviewed prior to carrying out any construction, operation or decommissioning activities on site. Should the document review process identify any issues or items within the documents that are either redundant or in need of updating, it is the responsibility of the Future Generation's Environmental Manager to coordinate preparation of the revised documents.

In accordance with condition 2 of schedule 4 of the Approval, within one month of the following (unless otherwise agreed with the Planning Secretary), the EMS must be reviewed, and if necessary, revised:

- the submission of an incident report under condition 5 of schedule 4;
- the submission of an audit report under condition 7 or schedule 4; or
- the approval of any modification to the conditions of the Approval.

Where this review leads to revisions in any such document, then within one month of the review, the revised document will be submitted to the Planning Secretary for approval, unless otherwise agreed with the Planning Secretary.

Where any revisions to the management plans, strategies or programs are made, the revised document will be issued to the Snowy Hydro for certification / acceptance of the changes prior to submission to DPIE. Changes which are minor may be approved by Future Generation or Snowy Hydro. Changes which are not minor will require the approval of DPIE.

Only the Future Generation Environmental Manager, or delegate, has the authority to change any of the environmental management documentation. Changes must be carried out after consultation with the Future Generation Project Director and Future Generation Project HSE Manager.

Should the EMS or sub-plans not require review or revision, then they will be reviewed at least annually by the Future Generation Environmental Manager.

The approved EMS will be held in the Future Generation site office and be available upon request. Revised versions of the EMS will be made available through the processes described in Section 1.5.

1.7.2. Continuous Improvement

Continuous improvement of this EMS will be achieved by the ongoing evaluation of environmental management performance against environmental policies, objectives and targets for the purpose of identifying opportunities for improvement.

The continuous improvement process will be designed to:

- identify areas of opportunity for improvement of environmental management and performance;
- determine the cause or causes of non-conformances and deficiencies;
- develop and implement a plan of corrective and preventative action to address any non-conformances and deficiencies;
- verify the effectiveness of the corrective and preventative actions;
- document any changes in procedures resulting from process improvement; and
- make comparisons with objectives and targets.

2. PROJECT DESCRIPTION

The Snowy 2.0 project responds to major challenges faced by the New South Wales energy system and broader National Electricity Market. These challenges relate to rising energy costs, a deterioration in the energy systems reliability, and a transition away from coal-fired, dispatchable, base-load power to intermittent renewable wind and solar power.

Snowy 2.0 involves linking Talbingo and Tantangara reservoirs within the existing Snowy Mountains Hydro-electric Scheme (Snowy Scheme) and building an underground power station between the two reservoirs. This will increase the current Snowy Scheme generation capacity by almost 50%. The increased quick-start generation and large-scale storage capacity provided by Snowy 2.0 will increase the security and reliability of the National Electricity Market.

Essential to the construction of Snowy 2.0 is the manufacture and transportation of precast concrete segments to line the tunnels being excavated for Snowy 2.0 Exploratory and Main Works.

2.1. General Features

The project is located on land in the south-eastern corner of the Polo Flat industrial area. The site has an area of about 31.6 hectares (ha), is surrounded by industrial development to the north and west and predominantly vacant land to the south and east. An abattoir is located immediately of the east of the site.

The Segment Factory will contain a concrete batching plant, building for the manufacture of the segments (the precast building), uncovered storage areas for raw material and segments, vehicle parking areas and offices and workshops. Figure 2-2 indicates the layout for the facility.

Construction will last approximately five months, and the segment factory itself will operate for a period of approximately 3.5 years.

Key elements of the construction and operation of the Segment Factory are summarised below.

2.1.1. Pre-construction

Preconstruction activities proposed to occur prior to the commencement of construction as permitted by the Infrastructure Approval. These would include activities such as:

- service identification and protection, relocation and installation of utilities;
- hazardous material removal, including asbestos, lead paint and PCBs;
- removal, transport and disposal of weeds;
- installation of mitigation measures including erosion and sediment controls and the stormwater basin;
- minor clearing;
- building/road dilapidation studies;
- geotechnical drilling and/or survey works; and
- installation of temporary fencing, signage and security measures.

2.1.2. Construction

Construction of the Segment Factory would include, but not be limited to:

- demolition of buildings on the southern portion of the site, and removal of the communications tower;
- progressive installation of erosion and sediment controls;

- utility works;
- clearing;
- earthworks;
- construction of drainage infrastructure;
- construction of primary access roads in the unmade road corridor and connection to Polo Flat Road;
- pavement strengthening works on Polo Flat Road from the intersection with the Monaro Highway to the site access road;
- upgraded intersection of Polo Flat Road and the Monaro Highway;
- installation of temporary traffic signals at the intersection of Snowy Mountains Highway and Bombala Street ; and
- construction of all buildings (precast warehouse, offices, workshops, storage yards and guardhouse), the concrete batch plant, carparks, and associated facilities.

Note that some of these activities may occur in the pre-construction phase based on the requirements and conditions of the Infrastructure Approval.

2.1.3. Operation

Approximately 130,500 segments would be manufactured over the operational period. Each tunnel ring will consist of nine individual segments.

Precast Facility

Manufacture of the precast tunnel segments will occur utilising steel moulds specifically designed to meet the specifications of Snowy 2.0 will occur. The steel moulds would be used in conjunction with a double carousel with four production lines on each carousel. In the carousel system, the moulds are moved on rails to pass through the various workstations before storage and transport to the construction sites within KNP.

The key elements in the fabrication of the precast tunnel segments include carousel production cycle, curing of segments, repair works, packer placement, quality control, and precast tunnel segment handling and transport.

Raw materials including steel reinforcement, concrete admixtures and specialised concrete chemicals, will be stored in, or adjacent to, a warehouse attached to the precast facility.

Concrete Batching Plant

The concrete batch plant would be located on the southern portion of the site and include a conveyor system, cement and silo slags and adjacent aggregate and sand storage areas for mixing to form concrete prior to insertion into steel moulds.

Cement and slag silos, and an aggregate and sand storage area for the concrete batch plant would be sized to hold approximately three days production to ensure any potential disruption on raw material supply will limit its impact on segment production.

Other Facilities

Dome shed workshops will be located adjacent to the precast facility. The crib area will be located adjacent to the precast facility to provide toilet facilities, change rooms, lockers, showers, lunchroom and break out areas for the factory workers. Offices, meeting rooms, training rooms and induction facilities are located in the south-western part of the site.

Two large parking areas are located in the south-western corner of the site, and to the north of the precast building.

A diversion drain around the eastern perimeter of the site to divert water from the third order watercourse is to be installed. The diversion drain would be constructed to match the general width and depth of the existing watercourse.

A detention basin would be provided to the north of the site to collect surface flows. Overflows from the detention basin would be directed into the drain diversion.

Figure 2-1: Location of the site in local context (EIS, EMM)

Figure 2-2: Proposed site layout (RTS, Figure 1.1)

2.2. Hours

2.2.1. Construction

In accordance with condition 5 of Schedule 2, construction must only be carried out:

- Monday to Saturday 7am – 6pm.

Works outside of the hours identified in condition 5 may be undertaken in the following circumstances:

(a) works that are inaudible at the nearest sensitive receivers;

(b) works agreed to in writing by the Planning Secretary;

(c) the delivery of materials required by the NSW Police Force or other authorities for safety reasons; or

(d) works required in an emergency to avoid environmental harm, the loss of life, or property damage.

2.2.2. Operation

The Segment Factory will operate 24 hours a day, seven days a week over a period of approximately 3.5 years.

2.3. General changes to the Project

Refinements to the project may occur during detailed design or changed circumstances. Design changes or changes in scope will be communicated to the Future Generation Environmental Manager either through formal change processes or via informal communications.

Proposed changes will be assessed as required for consistency against the approved project. The proposed changes would be assessed for potential impacts and compared to the approved impacts. Once prepared, consistency assessments will be submitted to Snowy Hydro for determination by Snowy Hydro's Representative.

Changes that are not consistent with the Approval will require modification under Section 5.25 of the EP&A Act and determination by the Minister for Planning.

3. PLANNING

3.1. Legal and other Requirements

A register of legal and other requirements for the project is included in Appendix A1. This register will be maintained by Future Generation throughout the project within its files and updated as required. Updates may include new/amended approvals and licences, updated legislation, standards and codes of practice, or changes as a result of management reviews or internal or external audits.

Any changes made to the legal requirements register will be communicated to the wider team where necessary through toolbox talks, specific training and other methods detailed in Section 5.

3.2. *Environment Protection and Biodiversity Conservation Act 1999*

On 26 June 2019, Snowy Hydro referred the proposed Segment Factory (reference 2019/8481) to the Commonwealth Minister for the Environment under the provisions of the *Environment Protection and Biodiversity Conservation Act 1999* (EPBC Act). On 13 August 2019, the proposed Segment Factory was determined to be 'not a controlled action' and therefore does not require further assessment or approval under the EPBC Act.

As construction of the Segment Factory has the potential to "kill, injure, take or move" listed threatened species and ecological activities, a permit (and Supplementary Form C) was submitted under Part 13 of the EPBC Act for these purposes.

Any proposed changes to the project must consider the implications on the EPBC referral decision. This will be managed through the modification assessment process outlined in Section 2.2.1.

3.3. Critical State Significant Infrastructure

On 7 March 2018 the then NSW Minister for Planning declared Snowy 2.0 to be critical State significant infrastructure (CSSI reference 18-9208) under the provisions of the EP&A Act. This declaration is made on the basis that the project is critical to the State for environmental, economic and social reasons.

This declaration is included in clause 9 of Schedule 5 of the *State Environmental Planning Policy (State and Regional Development) 2011* (SRD SEPP) and the definition within the declaration includes development that is ancillary to the project.

3.4. Conditions of Approval

The primary conditions relevant to the preparation of this EMS are detailed in Table 3-1.

Table 3-1: Conditions relevant to the EMS

Condition	Requirement	Where addressed
Environmental Management		
Environmental Management Strategy		
Sch 4, condition 1	Prior to carrying out any development, the Proponent must prepare an Environmental Management Strategy for the development to the satisfaction of the Planning Secretary. This strategy must: (a) provide the strategic framework for environmental management of the development; (b) identify the statutory approvals that apply to the development;	This document Section 4 Section 3

Condition	Requirement	Where addressed
	(c) describe the role, responsibility, authority and accountability of all key personnel involved in the environmental management of the development; (d) describe the procedures that would be implemented to: • keep the local community and relevant agencies informed about the operation and environmental performance of the development; • receive, handle, respond to, and record complaints; • resolve any disputes that may arise; • respond to any non-compliance; • respond to emergencies; and (e) include: • references to any plans approved under the conditions of this approval; and • a clear plan depicting all the monitoring to be carried out in relation to the development. Following the Planning Secretary's approval, the Proponent must implement the Environmental Management Strategy.	Section 4.2 Section 6 Section 8.4 Section 7.3 Section 4.1.4 Section 8.2
Revision of Strategies, Plans and Programs		
Sch 4, condition 2	The Proponent must: (a) update the strategies, plans or programs required under this approval to the satisfaction of the Planning Secretary prior to carrying out any construction, operation or decommissioning activities on site; and (b) review and, if necessary, revise the strategies, plans or programs required under this approval to the satisfaction of the Planning Secretary within 1 month of the: • submission of an incident report under condition 5 of Schedule 4; • submission of an audit report under condition 7 of Schedule 4; or • any modification to the conditions of this approval.	Section 1.7
Updating and Staging of Strategies, Plans or Programs		
Sch 4, condition 3	With the approval of the Planning Secretary, the Proponent may submit any strategy, plan or program required by this approval on a progressive basis. To ensure the strategies, plans or programs under the conditions of this approval are updated on a regular basis, the Proponent may at any time submit revised strategies, plans or programs to the Planning Secretary for approval. With the agreement of the Planning Secretary, the Proponent may prepare any revised strategy, plan or program without undertaking consultation with all the parties referred to under the relevant condition of this approval. *Notes:* • *While* any strategy, plan or program may be submitted on a progressive basis, the Proponent must ensure that all development being carried out on site is covered by suitable strategies, plans or programs at all times. • If the submission of any strategy, plan or program is to be staged, then the relevant strategy, plan or program must clearly describe the specific stage to which the strategy, plan or program applies, the relationship of this stage to any future stages, and the trigger for updating the strategy, plan or program.	Section 1.7
Compliance		
Notification		
Sch 4, condition 4	The Proponent must notify the Department in writing of the date of commencement of the following phases, prior to commencing the relevant phase: (a) pre-construction; (b) construction; (c) operation;	Section 8.4

Condition	Requirement	Where addressed
	(d) cessation of operation; (e) decommissioning. If any of these phases of the development are to be staged, then the Proponent must notify the Department in writing prior to commencing the relevant stage, and clearly identify the development that would be carried out during the relevant stage.	
Incident Notification		
Sch 4, condition 5	If the Proponent becomes aware of an incident, it must notify the Department immediately in writing via the Major Projects Portal. The notice must identify the development (including the development application number) and set out the location and nature of the incident.	Section 7.2
Non-Compliance Notification		
Sch 4, condition 6	Within 7 days of becoming aware of any non-compliance with the conditions of this approval, the Proponent must notify the Department in writing via the Major Projects Portal. The notice must identify the development (including the development application number), the relevant condition of approval, the way in which the development does not comply, the reasons for the non-compliance (if known) and what actions have been, or will be, undertaken to address the non-compliance.	Section 8.4.1
Independent Environmental Audit		
Sch 4, condition 7	Within 3 months of commencing operation, and two years after commencing operation, unless the Planning Secretary directs otherwise, the Proponent must commission and pay the full cost of an Independent Environmental Audit of the development. The audit must: (a) be prepared in accordance with the relevant Independent Audit Post Approval requirements (DPE 2018); (b) be led and conducted by a suitably qualified, experienced and independent team of experts, including a traffic management expert, whose appointment has been endorsed by the Planning Secretary; (c) be carried out in consultation with the relevant agencies; (d) assess whether the development complies with the relevant requirements in this approval, and any strategy, plan or program required under this approval; and (e) recommend appropriate measures or actions to improve the environmental performance of the development and any strategy, plan or program required under this approval. Within 3 months of commencing an Independent Environmental Audit, or unless otherwise agreed by the Planning Secretary, a copy of the audit report must be submitted to the Planning Secretary, and any other NSW agency that requests it, together with a response to any recommendations contained in the audit report, and a timetable for the implementation of the recommendations. The recommendations of the Independent Environmental Audit must be implemented to the satisfaction of the Planning Secretary.	Section 8.3

3.5. Revised Environmental Management Measures

Environmental safeguards and management measures are included in the EIS in Section 6. During preparation of the Submissions Report, revised environmental management measures (REMMs) were developed and included in Appendix C.

The REMMs relevant to this EMS are listed in Table 3-2.

Table 3-2: Revised environmental management measures relevant to the EMS

Impact	Reference	Revised environmental management measures	Where addressed
Transport – Management Plan	TRA03	The EMP would set out guidelines, general requirements and procedures to be used when construction and operational activities impact on existing traffic arrangements.	Traffic Management Plan
Noise and Vibration – Construction noise and vibration	NV001	The EMP for the proposed segment factory would describe how construction noise would be managed where predicted noise levels are above the NMLs. It would outline measures to monitor construction noise at early stages to validate the predictions.	Noise Monitoring and Management Plan
Noise and Vibration – Operational noise	NV002	The EMP would include measures to monitor operational noise levels during commissioning (or within 3 months of operation) to validate the predicted noise levels. The EMP would also include a review of noise mitigation measures and site management to reduce levels where required.	Noise Monitoring and Management Plan
Contamination – Unexpected finds	CON03	The EMP should contain an unexpected finds protocol including procedures in the event that potentially contaminated land is identified. Where signs of contamination are identified, construction work within the affected areas would cease until a contamination assessment was undertaken to advise the need for further investigation or remediation.	Appendix A5
Contamination - Handling of waste	CON04	The EMP should contain procedures for handling and storing waste, including handling of potentially or known contaminated material and protocols for waste classification and disposal.	Appendix A6
Heritage – unexpected finds	HER01	As part of the EMP for the proposed segment factory, a protocol will be prepared which documents the process to be undertaken should any items of Aboriginal heritage be unexpectedly found during the construction phase.	Appendix A5

3.6. Approvals, Permits and Licences

Snowy Hydro and/or Future Generation will obtain licences, permits and approvals as required by law for the works and maintain them as required throughout delivery of the project. Future Generation shall comply with all relevant legal requirements. Copies of licences, approvals and permits relevant to the scope shall be held on site with files available for audit and inspection purposes.

A summary of the approvals, licences and permits detailed is shown in Table 3-3 below.

Table 3-3: Approvals, licences and permits summary table

Legislation	Requirement	Relevant agency	Responsibility	Timing
Environmental Planning and Assessment Act 1979	Infrastructure Approval under the EP&A Act	DPIE	Snowy Hydro	Prior to the commencement of the relevant infrastructure. Approval was granted by the Minister for Planning on 31 March 2020, subject to a set of conditions. This EMS, in conjunction with the sub-plans and related documents addresses the conditions.

Legislation	Requirement	Relevant agency	Responsibility	Timing
Protection of the Environment Operations Act 1997	Environment Protection Licence (EPL)	Environment Protection Authority (EPA)	Snowy Hydro or Future Generation	Prior to construction.
Roads Act 1993	Road occupancy licence	Transport for NSW	Future Generation	Prior to relevant works and / or road occupancy.
Local Government Act 1993	Building Code Construction Certificate and Occupation Certificate	Snowy Monaro Regional Council	Future Generation	Construction Certificate and Occupation Certificate may be required prior to the commencement of construction of the buildings or use of relevant structures in the surface infrastructure area. The requirement for these certificates will be determined by the conditions of the Infrastructure Approval.
Environment Protection and Biodiversity Conservation Act 1999	Part 13 permit	DAWE	Future Generation	Prior to impacting relevant threatened species or communities

3.7. Standards and Guidelines

Compliance standards, policies and guidelines relevant to the project are detailed in the respective management plans. The requirements of these standards have been taken into account in the preparation of the EMS and will be considered by Future Generation during the preparation of the Work Packs.

4. ENVIRONMENTAL MANAGEMENT SYSTEM

4.1. Environmental Management Framework

The project will use the Future Generation Business Management System (BMS) which includes an Environmental Management System designed to comply with the requirements of *ISO 14001 Environmental Management Systems*. This delivers integrated management of health, safety, security and environment (HSSE). Figure 4-1 summarises the Environmental Management System hierarchy.

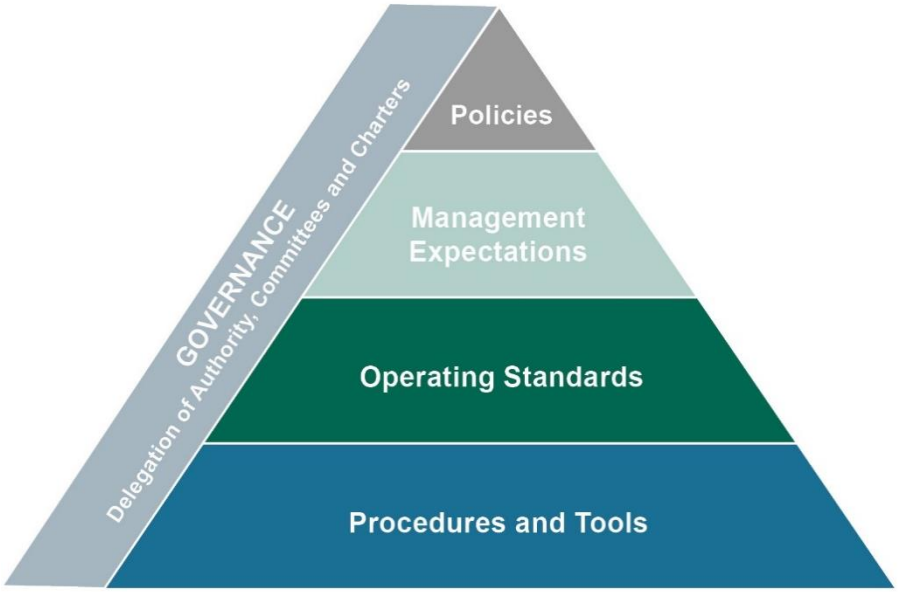


Figure 4-1: Environmental management system hierarchy

The Health, Safety, Security and Environment Management Manual (HSSE Manual) describes the Environmental Management System for Future Generation. A third-party certification authority conducts a schedule of surveillance and full audits of the Environmental Management System to ensure the performance requirements are consistently implemented across the business. Table 4-1 summarises the Environmental Management System components.

Table 4-1: Environmental management system components

Management System Component	Description
HSSE Policy & HSSE Management Expectations	The policy sets the overall guidelines and direction to HSSE and represents the commitment of management to the achievement of its aims. The Policy for the project is presented in Appendix A2. The Code of Conduct outlines expectations for personal accountability to assist personnel making decisions in their day to day work, including compliance with laws. The *HSSE Management Expectation* clearly defines minimum expectations to ensure that all Future Generation personnel and subcontractors understand their obligations and accountabilities to contribute to Future Generation's HSSE culture.

Management System Component	Description
HSSE Operating Standards	The HSSE Operating Standards set out the minimum mandatory performance requirements. Environmental minimum mandatory performance requirements are set out in the following HSSE related Operating Standards: • Environment Management Operating Standard; and • Major Accident Event Hazard Management Operating Standard.
HSSE Management Manual	Provides a framework for the HSSE component of the BMS, an overview of the key elements and reference documents.
HSSE Procedures, documents and registers (tools)	Procedures or work practices which provide the detailed steps to be taken to identify risks, work safely, protect the environment, investigate incidents and implement continuous improvement.
HSSE Management Plans – This EMS and relevant sub-plans	Project specific plans prepared to identify and manage project HSSE risks and achieve the Operating Standards performance requirements.
Project/site specific procedures, Work Instructions	Project and activity specific procedures, risk assessments and work methods to mitigate HSSE hazards. They are prepared by project personnel.

4.1.1. Environment Policy

Future Generation believes that respect for the project location, its surroundings and the communities in which it operates is essential for project success, as well as compliance with all environmental requirements. This commitment is described in the Policy for Environment, Sustainability & Community. This outlines the commitment to establish environmental management and community engagement plans to avoid, minimise and mitigate impact. The Policy is provided in Appendix A2.

The Policy for Environment, Sustainability and Community will be communicated to staff and Contractors via inductions and ongoing awareness programs as set out in Table 4.2.

Table 4-2: Policy communication

What	Who	When
Communicate environment and sustainability policies to Future Generation employees	Future Generation Construction Manager Future Generation Environmental Manager	Project induction On display at Future Generation managed work sites Project environmental and sustainability training presentation
Communicate environment and sustainability policies to Future Generation subcontractors	Future Generation Construction Manager Future Generation Environmental Manager	Prior to commencement of operations
Apply Future Generation policies to all Future Generation activities	All staff	At all times

4.1.2. Objectives and Targets

As a means of assessing environmental performance, environmental objectives and targets have been established. These objectives and targets have been developed in consideration of requirements in statutory approvals, the EIS and RTS commitments, contractual requirements,

legislative requirements, HSSE Project performance requirements and significant environmental aspects and impacts. They assist in determining whether the commitments of the Policy are being met. Environmental objectives for the project are provided below in Table 4-3.

Table 4-3: Objectives and targets

Objective	Target	How monitored and measured
Comply with all legislative requirements	• Full compliance with statutory approvals.	Audits, reporting, inspections, monitoring.
Construct and operate the Segment Factory in accordance with the conditions of Approval, the revised environmental management measures and any other environmental approvals	• No regulatory infringements (PINs or prosecutions). • No formal regulatory warning	Audits, inspections, monitoring.
Engage with stakeholders and the broader community, minimise complaints and respond to any complaints within a suitable timeframe	• Disseminate regular Project updates and other information to keep the community informed of the Project. • Record and respond to complaints within a timely manner.	Review complaints register and timeliness of response, reporting (Darzin consultation software) and tracking, audits.
Continuously improve environmental performance	• Develop and maintain a program of ongoing environmental training. • Capture lessons learnt where required from environmental incidents to minimise repeat issues. • Encourage and reward innovation and effort throughout the workforce.	Reporting and tracking, induction records, daily toolbox records, training delivered, lessons learnt disseminated.

4.1.3. Environmental Management Strategy

This EMS is the overarching management tool in relation to environmental performance during Project delivery. The EMS describes the environmental management framework for the construction and operation of the Segment Factory and the system for minimising and managing environmental risks.

The EMS and sub-plans have been prepared in consideration of the Approval, the REMMs presented in the RTS, *ISO 14001 Environmental Management Systems* and the *Guideline for the Preparation of Environmental Management Plans (DIPNR, 2004).*

This EMS outlines the environmental management practices and procedures that are to be followed during the construction and operation of this project. It provides the overall framework for the system and procedures to ensure environmental impacts are minimised and legislative and other requirements are fulfilled.

The EMS includes management plans and associated environmental monitoring programs to address specific significant environmental issues associated with the project.

An overview of the Future Generation Environmental Management Strategy is provided in Figure 4-2.

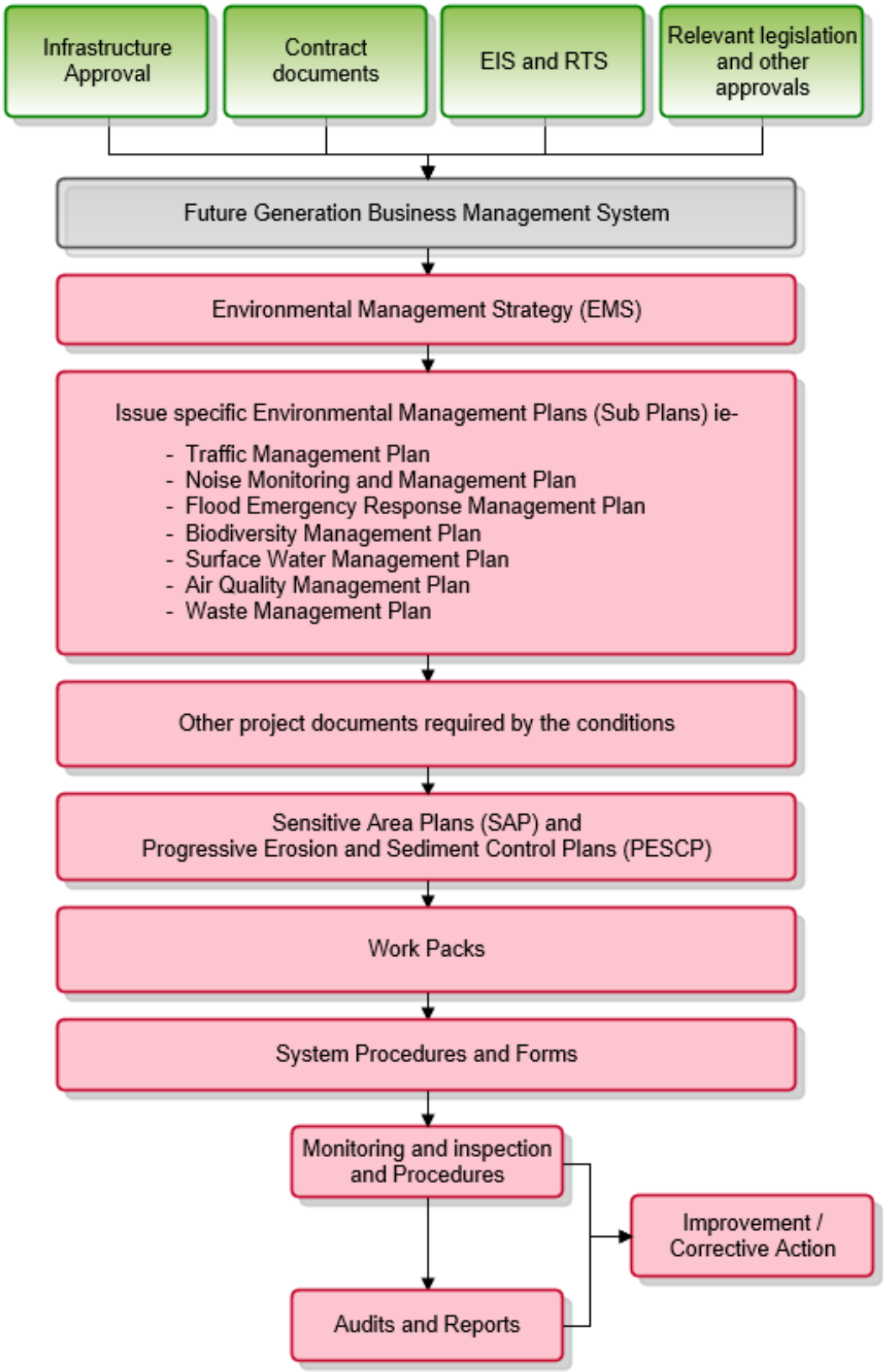


Figure 4-2: EMS and management plans appendices outline

4.1.4. Environmental Management Plans

A number of environmental management plans are required to support the EMS. They document the aspects, impacts, management measures and monitoring requirements for each key environmental aspect.

The conditions of Approval and REMMs define the content and issues to be addressed in most of the management plans. Table 4-4 details the management plans required to be prepared and their timing Figure 4-3 sets out the structure of the EMS and management plans.

Table 4-4: EMS and Sub-plans

Plan	Timing and application
Environmental Management Strategy (this document)	To be prepared prior to development
Appendix B1 - Traffic Management Plan	To be prepared prior to construction
Appendix B2 - Noise Monitoring and Management Plan	To be prepared prior to operation
Appendix B3 - Flood Emergency Response Plan	To be prepared prior to operation
Plans not required by the conditions (internal plans prepared to assist on site)	
Biodiversity Management Plan	-
Surface Water Management Plan	-
Air Quality Management Plan	-
Waste Management Plan	-

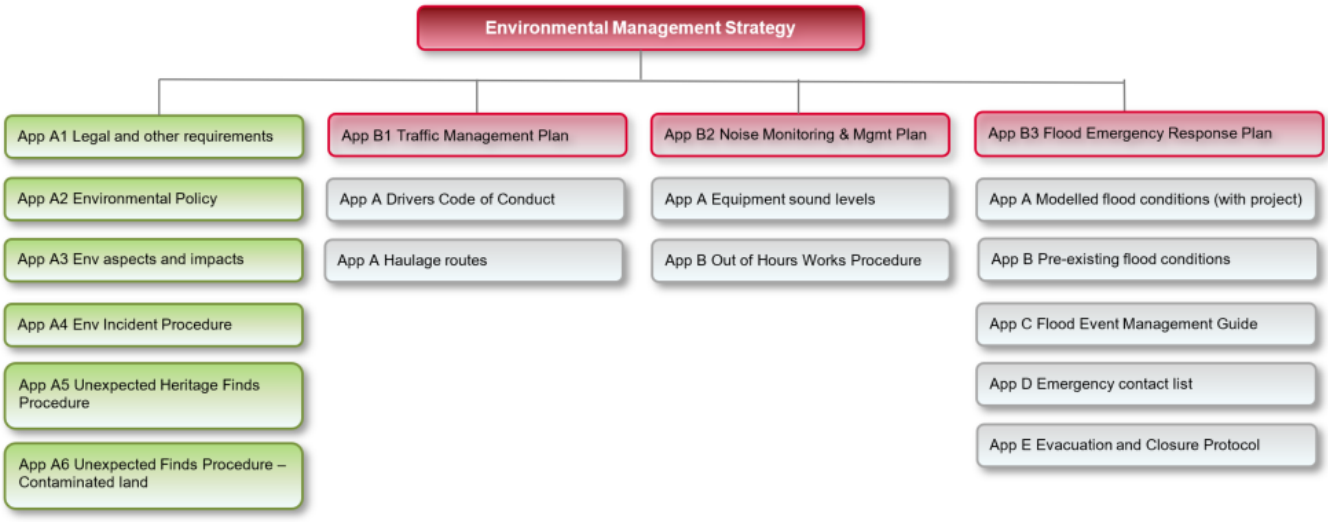


Figure 4-3: Appendices within the management plans

4.1.5. Work Packs

Work Packs describe the details of construction implementation. The preparation of Work Packs involves a comprehensive review of the requirements of many aspects of project delivery, including design, construction, environment and safety. The Work Packs provide specific instructions on how to conduct components of the construction. The Work Pack incorporates the procedures relevant

to site specific activities to reduce risk and ensure ongoing environmental compliance. These measures are based on relevant measures in EMS and sub-plans.

Future Generation will prepare and review all Work Packs to ensure that they capture and adequately address requirements in this EMS and sub-plans.

The Work Packs will be prepared prior to commencement of the works to which they relate.

All construction personnel and sub-contractors undertaking a task governed by a Work Pack must participate in training and acknowledge that they have read and understood their obligations prior to commencing work.

Regular monitoring and inspections against compliance with the Work Packs and Work Method Statements will be undertaken to ensure that controls are being implemented.

4.1.6. Sensitive Area Plans

To aid in the identification and protection of significant environmental features associated with the project, a set of Sensitive Area Plans (SAPs) will be prepared. The SAPs identify environmental constraints and 'no go' zones.

A copy of each of the worksite SAPs will available for Future Generation personnel and subcontractors and at each of the worksite locations.

4.1.7. Progressive Erosion and Sediment Control Plans

Progressive erosion and sediment control plans (PESCPs or ESCPs) are to be developed and will show the site layout and approximate location of erosion and sediment control structures on site. They will be developed for all work areas prior to commencing activities and will be updated as changes occur on site.

Environmental staff will typically develop the ESCPs in consultation with Project Engineers, Superintendents and Foremen. This will ensure that erosion and sediment control management is incorporated into the planning stage of construction activities and is coordinated in its approach.

ESCPs will be regularly reviewed as site conditions change and flow paths are altered (e.g. the reshaping of drainage lines to direct sediment laden runoff to sediment basins). Once approved all revisions will be controlled and allocated an appropriate revision number.

ESCPs are designed for use as a practical guide and may be produced in conjunction with Work Method Statements for more detailed environmental mitigation measures (if required).

4.1.8. Asbestos Management Plan

In order to manage hazardous material removal, including asbestos, prior to construction activities commencing, an Asbestos Management Plan (AMP) will be developed by the sub-contractor undertaking the works, in accordance with the SafeWork Australia Asbestos Codes of Practice and Guidance Notes, NSW legislative requirements and relevant Australia and New Zealand Standards (WA DoH, 2009), in order to document the proposed remediation methodology and validation requirements.

4.1.9. Procedures, Forms and Other Documents

The project's Environmental Management System procedures, forms and other documents provide instructions and records related to both environmental and non-environmental activities throughout the project.

Procedures and forms used will be developed and implemented by Future Generation. Records will be held on site in electronic / hard copy form.

4.1.10. Document Control and Records

Records shall be developed and maintained by Future Generation including (for example):

- training records;
- incident reports;
- audit and inspection forms;
- monitoring results; and
- waste disposal records.

Future Generation shall maintain all records generated as a result of environmental management and make these available on request to Snowy Hydro.

4.2. Roles and Responsibilities

4.2.1. Organisational Structure

The Future Generation organisation is described in Table 4-5. The Future Generation Project Director, in consultation with functional Department Managers, will ensure that appropriate resources are available to effectively manage the implementation of the EMS during delivery of the project.

All Future Generation staff, subcontractors and visitors are required to operate in accordance with this EMS and related environmental management plans during construction. The project environmental management structure incorporates the following personnel:

- Environmental Manager responsible for overall management of the EMS and environmental management plans; and
- Environmental Co-ordinators to assist in implementing and monitoring measures in the EMS and environmental management plans.

Further additional support, as required, is available to the project, as described in Section 4.2.2.

4.2.2. Roles and Responsibilities

Snowy Hydro Environmental Manager

The environmental responsibilities of the Snowy Hydro Environmental Manager include (but are not limited to):

- review any environmental management plans and related documents prepared for the project;
- review minor project refinements that are consistent with the project environmental assessment and approval documentation and recommend they be determined to the Snowy Hydro Project Director;
- monitor the environmental performance of the project in relation to Snowy Hydro requirements; and
- Hold Point releases (as required).

Snowy Hydro Representative

The environmental responsibilities of the Snowy Hydro Representative include (but are not limited to):

- evaluate and advise on compliance with Snowy Hydro environmental requirements;

- review and approve any environmental management plans for the project or related activities that are not required to be approved by the Planning Secretary; and
- Hold Point releases (as required).

Future Generation Project Team

Table 4-5 summarises the roles and responsibilities of Future Generation personnel.

Table 4-5: Environmental roles and responsibilities

Team Member	Responsibilities
Project Director	• Overall environmental performance of the project • Contributing to the development, review, approval, and implementation of all project environmental management systems and standards in the field • Providing leadership in the implementation of all project environmental initiatives, including Target Zero • Specifying and making available resources to enable execution of project environmental management activities, including Target Zero • Specifying and making available resources to enable execution of project emergency response systems • Ensuring personnel delegated responsibility for environmental management are adequately trained and competent to implement the requirements of the EMS and sub-plans • Ensuring resources are specified to eliminate or minimise project environmental hazards • Coordinating and participating in project environmental incident investigations and review reports and findings • Arranging for and participating in Hazard Identification (HAZID) workshops • Ensuring project procedures take into account the outcomes of HAZID workshops • Ensuring compliance of subcontractors with the project environmental standards and statutory requirement in the field, including duty of care • Participating in Target Zero commitment workshop • Participating in regular workplace inspections • Reviewing environmental audit findings and ensuring items requiring corrective action are followed up and close-out reports are issued • Reviewing overall project environmental performance • Ensuring subcontractors conduct their environmental responsibilities as required in the contract • Attending and participating in environmental meetings as appropriate • Reviewing environmental standards and plans developed for each project to ensure that Future Generation and legislative requirements are met • Interfacing with major subcontractors and client management, and with environmental personnel as required regarding environmental matters
Health Safety and Environment Manager	• Review HSE standards and plans developed for each project to ensure that Future Generation and legislative requirements are met • Review overall HSE performance and report to the project Management and Corporate HSE Manager • Interface with major subcontractors and Snowy Hydro management and with HSE personnel as required regarding HSE matters • Coordinate third party certification audits • Specify resources to enable execution of HSE activities on site • Specify resources to enable execution of emergency response systems on site • Arrange for and participate in HAZID workshops

Team Member	Responsibilities
	• Provide HSE Advisors, project line management and subcontractor with feedback on HSE performance • Participate in the Target Zero commitment workshop • Implement and coordinate Target Zero activities and strategies • Receive and circulate relevant HSE information • Coordinate and participate in scheduled HSE audits and reviews • Develop training and induction schedules and content • Attend and participate in HSE meetings as required • Coordinate and participate in workplace inspections
Environmental Manager	• Specifying resources to enable execution of environmental activities on site • Specifying resources to enable execution of emergency response systems on site • Arranging for and participating in HAZID workshops • Providing environmental advisors, project line management, and Future Generation with feedback on environmental performance • Participating in the Target Zero commitment workshop • Receiving and circulating relevant environmental information • Coordinating and participating in scheduled environmental audits and reviews • Performing statistical analysis and environmental incident trend reviews • Developing training and induction schedules and content • Attending and participating in environmental meetings as required • Coordinating and participating in workplace inspections • Recording, monitoring and following up close out of action items in InControl • Taking responsibility for the overall environmental performance of the site • Ensuring implementation of the EMS and sub-plans in the field • Hold Point releases • Providing leadership in the implementation of all environmental initiatives • Specifying and making available resources to enable execution of environmental activities
Design Manager	• Ensuring detailed design progressively addresses all relevant environmental obligations • Ensuring works are designed to fulfil the requirements and objectives of this EMS • Liaising with the Client's Representative, Construction Manager, Environmental Manager, and design consultants on environmental issues
Site / Construction Manager	• Ensuring resources are specified to eliminate or minimise environmental hazards • Participating in incident investigations and review all incident reports • Arranging for and participating in HAZID workshops • Ensuring compliance in the field of subcontractors with the EMS and relevant statutes • Ensuring compliance with statutory requirements, including duty of care • Participating in workplace inspections • Reviewing audit findings and close out reports • Participating in Target Zero commitment workshop • Attending and participating in environmental meetings as appropriate • Reviewing work planning requirements • Reviewing overall project environmental performance • Remaining abreast of all relevant environmental laws, permits and standards • Providing construction and field management and supervisors with environmental information current to their requirements • Ensuring environmental standards developed for each activity meet with Future Generation requirements

Team Member	Responsibilities
	• Scheduling and coordinating site-based environmental activities • Interfacing with client environmental personnel during their site visits • Conducting periodic drills and reviews of emergency response systems and procedures • Providing project line management with feedback on environmental performance
Environment Team	• Conducting workplace inspections • Participating in HAZID reviews • Recording, monitoring and following up close out of action items • Being accountable for the environmental performance of all personnel under their control • Selecting and delegating environmental assignments to supervisors • Being accountable for ongoing development and implementation of project environmental activities and practices • Confirming and making available resources to enable execution of environmental activities • Ensuring corrective actions are implemented • Participating in Target Zero workshops • Complying with statutory requirements, including duty of care • Liaising with supervisors on relevant environmental issues • Attending and participating in environmental meetings • Reviewing and closing out environmental incident reports • Providing leadership to all supervisors through positive discussions on environmental initiatives • Conducting weekly workplace inspections • Deliver inductions as required • Supervising and guiding employees to perform their work in an environmentally conscious manner • Reporting all incidents and hazards to management • Monitoring the use and maintenance of spill kits at all work sites • Ensuring that all responsibilities for emergency response are clearly identified and understood by all personnel in a work group • Ensuring work group employees participate in relevant environmental activities
Superintendents	• Participating in HAZID workshops and audits • Motivating employees to report all environmental incidents • Participating in Target Zero workshops • Conducting inspections of their work area per the Audit and Inspection Schedule • Planning for and incorporating environmental management into all work plans and activities • Opening and maintaining external communication during emergencies • Maintaining a log of communications sent and received during an emergency • Complying with statutory requirements, including duty of care • Reporting hazardous conditions • Participating in any relevant environmental training • Providing suggestions to improve environmental management on the project • Reporting any near miss or environmental incidents • Participating in site environmental meetings as required • Participating in Target Zero four-hour training
Supervisors	• Planning for, and incorporating environmental management into all work plans and activities • Participating in workplace inspections • Ensuring that instructions are issued, and adequate information provided to field-based employees which relate to environmental risks on site

Team Member	Responsibilities
	• Participating in any relevant environmental training • Reporting any near miss or environmental incidents • Providing suggestions to improve environmental management on the project • Participating in Target Zero four-hour training
All personnel including sub-contractors	• Complying with all legislative requirements including this EMS • Participating in any relevant environmental training • Reporting any near miss or environmental incidents to their Supervisors • Providing suggestions to improve environmental management on the project

Specialist and other environmental resources

Specialist consultants and subcontractors may be engaged for environmental support roles, as required, such as:

- ecologists for review of the Biodiversity Management Plan and ongoing advice throughout construction;
- noise specialist for noise modelling, establishment and maintenance of monitoring equipment, and ongoing advice throughout construction;
- NATA-certified laboratories for soil and water quality analysis;
- environmental monitoring hardware; and
- other resources as required during the course of the project.

Subcontractors and suppliers

All subcontractors will work under this EMS, sub-plans and relevant procedures in the BMS.

Subcontractors will not normally be required to prepare and implement a separate Environmental Management Plan (EMP) in addition to this EMS, except where the risk of environmental harm from the subcontractor's activities is assessed as significant or the subcontractor has control of a specific project area.

Where the subcontractor is required to prepare its own EMP, that EMP shall address the specific section of the project area/activities and shall be submitted for the approval of the Future Generation Environmental Manager within four weeks of appointment and prior to commencement on site (whichever is the earlier). This period is to allow Future Generation to review the Subcontractor's EMP and to discuss it with key stakeholders (as applicable). Future Generation will ensure that each such plan assesses the level of environmental risk and develops appropriate management controls for the section's full scope of work to a standard at least consistent with this EMS.

Subcontractors are required to carry out their work in accordance with contract instructions and in an environmentally sound manner.

All subcontractor personnel are required to attend a project induction, which includes an environmental component and task-specific training (if relevant) before they commence any work on site.

4.3. Environmental Risk Management

4.3.1. Risk and Hazard Management Approach

Future Generation operates a risk management approach consistent with AS/NZS ISO 31000:2009 Australian Standard Risk Management. Over the life of the project, risks will be identified, assessed and controlled through the use of a number of different risk management tools, primarily risk assessments.

A risk management approach will be used to determine the severity and likelihood of an activity's impact on the environment and to prioritise its significance.

The objectives of the risk assessment are to:

- identify activities/aspects, events or outcomes that have the potential to adversely affect the local environment and/or human health/property;
- qualitatively evaluate and categorise each risk item;
- assess whether risk issues can be managed by environmental protection measures;
- qualitatively evaluate residual risk with implementation of measures; and
- eliminate or reduce to as low as reasonably practicable (ALARP) all hazards and risks.

An overview of Future Generation's approach to risk management is outlined in Table 4-6.

Table 4-6: Risk assessment process summary

Risk assessment process	Description	Methodology	Project Planning	Project Execution	Project Close-out	Reference Procedures
Major Accident Event Hazard Assessment	Identify, assess and control Major Accident Events Hazards	MAE Bowties	✓	✓	✓	Major Accident Event Hazard Management Procedure
Design stage Environmental Risks	Identify, assess and document inherent design risks	HAZID, HAZOP, FMEA	✓		✓	Safety in Design Procedure
Design reviews – construction, operation, maintenance	Identify, assess and mitigate environmental hazards introduced by the design when facility is being constructed, operated or maintained	HAZID, HAZOP	✓			Safety in Design Procedure
Project Environmental Assessment	Identify, assess and control potential v impacts specific to the project and site	HAZID	✓		✓	HSE Risk Management Procedure
Construction Package Environmental Assessment	Identify, assess and control potential environmental impacts specific to the Construction package	HAZID	✓	✓	✓	HSE Risk Management Procedure
Activity and location-specific assessment and work procedures	Identify, assess and control potential environmental impacts specific to particular activities and locations	HAZID	✓	✓	✓	HSE Risk Management Procedure

Risk assessment process	Description	Methodology	Project Planning	Project Execution	Project Close-out	Reference Procedures
Subcontractor Environmental Assessment	Assess the environmental capability of subcontractors to inform management strategy Identify, assess and control potential environmental impacts of contract scope	PRE-QUAL / HAZID	✓	✓	✓	HSE Risk Management Procedure
Work Team Task Assessment	Work teams identify, assess and control environmental hazards of planned work	Job Hazard Analysis		✓	✓	HSE Risk Management Procedure
Personal Task Assessment	Individuals identify, assess and control environmental hazards of planned task	TAKE 5		✓	✓	HSE Risk Management Procedure

4.3.2. Environmental Risk Register

An environmental risk assessment is included in Appendix 3 – Environmental aspects and impacts register. This risk assessment details the environmental aspects identified for the project, the initial risk category prior to appropriate management strategies, and reference to the appropriate document which detailing proposed mitigation strategies.

Aspects and impacts were identified for all construction activities that contribute to harm or impact on the environment including, air, noise, water, heritage, waste and biodiversity.

The ongoing determination of environmental aspects and impacts will be achieved through the risk management processes outlined above, which results in the maintenance of a list of environmental risks (aspects and impacts), corresponding risk mitigation strategy and risk ranking for each risk. Each environmental risk is categorised, based on the following:

- the environmental aspect;
- type of potential impact (or consequence); and
- likelihood of occurrence.

A risk matrix for the initial environmental risk assessment is provided below Table 4-7.

Table 4-7: Risk matrix

	Consequence				
	1	2	3	4	5
Likelihood	Insignificant	Minor	Moderate	Major	Catastrophic
1 –Event rarely occurs	Medium	High	High	Extreme	Extreme
2 –Event not likely to occur	Medium	Medium	High	High	Extreme
3 –Event may occur	Low	Medium	Medium	High	High
4 –Event almost certain to occur	Low	Low	Medium	Medium	Medium
5 –Event will occur	Low	Low	Low	Low	Medium

The following descriptions in Table 4-8 were used to determine the likelihood and consequence of an event.

Table 4-8: Likelihood and consequence table

Likelihood	Description
Event will occur	The event is a common occurrence on all projects
Event almost certain to occur	The event will probably / is likely to occur at least once during projects
Event may occur	The event is possible to / might occur during some projects
Event not likely to occur	The event is unlikely to occur (though it could occur during similar work activities)
Event rarely occurs	The event could occur, but is rare / only in exceptional circumstances
Consequence	**Description**
Negligible	**Negligible discharge** Low-level direct impacts on the physical environment (water, soil, air) within work area. Impacts easily remedied. No identifiable impact on flora or fauna.
Minor	**Uncontrolled discharges in minor quantities** (1-3 years) direct impact on physical environment (water, soil, air) that may impact on flora or fauna. Loss of individuals of common native flora or fauna. May extend outside of work area.
Moderate	**Moderate breach of environmental statutes** Medium term (3-10 years) impacts on populations of native flora/ fauna including loss of individuals of threatened species. Significant impacts on physical environment.
Major	**Major breach of environmental statutes** Medium-Long term (>10 years) physical impacts likely to cause impacts to flora/fauna populations, or direct impacts to flora/fauna. Adverse impacts to significant heritage items.
Catastrophic	**Shutdown of project due to environmental breach** Permanent impacts to populations of significant flora or fauna (e.g. threatened) highly significant heritage items, complete removal of habitat of threatened species or significant impairment of ecosystem function.

Future Generation will maintain the environmental risk register in its project files (separate to this EMS) to address risks specific to the scope. Risks will be required to be reviewed on a regular basis and will also be reviewed in response to incidents, changes in legal requirements, change in project scope, findings of inspections and audits and management reviews.

5. TRAINING AND AWARENESS

Environmental training and awareness is an important means to positively influence the attitude of workers engaged in the project whilst ensuring they are aware of their obligation and the requirements of this EMS. Internal and on-the-job training will be provided by Future Generation on a regular basis for all employees and subcontractors.

The main forms of training will be provided on site will include the site induction, toolbox training and environmental awareness training, and daily pre-start briefs.

Records of induction and training will be kept on site within databases held by Future Generation. Inductees will be required to sign-off that they have been informed of the environmental issues and that they understand their responsibilities.

5.1. Site Induction

All personnel (including sub-contractors) will be required to attend a compulsory site induction that includes an environmental component prior to commencement on-site. This is done to ensure all personnel involved in the project are aware of the requirements of the EMS and to ensure the implementation of environmental management measures. The Future Generation Environmental Manager (or delegate) will prepare the environmental component of the site induction.

The environmental component will include an overview of the following elements:

- relevant details of the EMS;
- relevant conditions of environmental licences, permits and approvals;
- key environmental issues, i.e. no-go areas;
- information relating to the location of environmental constraints;
- relevant environmental management requirements and responsibilities;
- management measures for the control of environmental issues;
- notification and response requirements in the event of unexpected finds (i.e. contaminated land or threatened species);
- regulatory penalties and consequences of non-compliance;
- incident response and reporting; and
- emergency response and evacuation (fire and flooding).

A record of all environment inductions will be maintained and kept on-site by Future Generation. Amendments to the induction may be made at any time as a result of work modifications or amendments to this EMS or related documentation.

5.2. Short-Term Workers Induction

Personnel working on the project for fewer than two days, where their tasks do not have significant risk of environmental harm, will undertake a short-term workers induction which includes a briefing of their responsibilities as contained in the full induction, a site-specific induction for the work scope they are required to undertake and review of relevant JHAs.

Short-term visitors, not conducting physical work, will be required to be accompanied by inducted personnel at all times.

5.3. Toolbox Talks and Environmental Awareness

Toolbox talks, environmental awareness training and construction methodology briefings will be delivered by Future Generation as necessary to achieve a suitable level of workforce awareness and competence appropriate to the activities.

Toolbox talks will be tailored to specific environmental issues relevant to upcoming works or previous incidents and will include general and specific discussion of the key environmental aspects of the project.

Targeted environmental awareness training will be provided to individuals or groups of workers with a specific authority or responsibility for environmental management or those undertaking an activity with a high risk of environmental impact.

5.4. Daily Pre-start Meetings

Daily pre-starts will be conducted by the Future Generation Supervisors prior to the start of work each day to inform workers of key safety, environmental and activity coordination considerations and other information that may be relevant in the performance of the day's work. Records of pre-starts meetings will be maintained and be available on site.

6. COMMUNICATION AND COMPLAINTS MANAGEMENT

6.1. Communication

Snowy Hydro and Future Generation are committed to ensuring effective consultation is undertaken on a regular basis at all levels of the project. A high level of communication is an important factor in the successful and correct delivery of environmental outcomes on the project and it will ensure environmental performance is continually communicated, understood and improved across the project.

6.1.1. Internal Communication

The methods of communication on site will include:

- inductions;
- toolbox talks;
- pre-start meetings;
- alerts, bulletins and / or initiatives; and
- Work Packs.

Future Generation will discuss environmental issues as a regular component of their toolbox and site meeting agenda.

Future Generation will present environmental communications to its workforce on a minimum weekly basis. This will include information on the management of environmental risks or key site environmental issues as required. Records of the topics, attendance and presenter's name will be maintained.

6.1.2. External Communication

Stakeholder

External communication with stakeholders such as government agencies is often required during project delivery. Communication can be for various matters including:

- organising government agency site inspections;
- through consultation on management plans; or
- through notification of relevant incidents.

Regular reporting to DPIE will occur in accordance with the reporting requirements detailed in Section 8.4.

External stakeholders for the project include:

- Department of Planning, Industry and Environment;
- NSW Environmental Protection Authority;
- Biodiversity Conservation Division (formerly OEH);
- Transport for NSW; and
- Snowy Monaro Regional Council.

Communication to these stakeholders will occur in accordance with the reporting requirements set out in Section 8.4 or on an as needs basis.

Community communication

Communication tools which will be used by the project to inform stakeholders and the community will include:

- notifications of construction activities;
- notification of out of hours works (as required);
- written correspondence (letters / emails);
- advertisements (as required);
- meetings / doorknocks;
- the project website; and
- enquiries and complaints line.

Relevant information which is required by Snowy Hydro for communications activities (such as for notifications, maintaining the website etc) will be provided by Future Generation.

6.2. Complaint Management

A complaints management system including the complaints register will be maintained by Snowy Hydro and the Future Generation consistent with *AS4269: Complaints Handling.*

The complaints management system will include a process to manage complaints including receiving, recording, tracking and responding to complaints within a defined timeframe. If a complaint cannot be responded to immediately a follow up phone call or verbal response will be made to the complainant in accordance with the timeframes detailed below. Figure 6-1 details the process of how Future Generation will respond to complaints related to Snowy 2.0 Segment Factory.

The key processes involved in recording complaints and enquiries are as follows:

- all enquiries / complaints will be recorded in a complaints register;
- enquiries or complaints received for the duration of the project will be responded to verbally within 24 hours from the time contact is received. An enquiry received out of hours will be responded to on the next working day;
- all environmental-related complaints such as those relating to noise, water, or dust will be forwarded to the Future Generation Environmental Manager.

The community and stakeholder engagement staff will attend to enquiries and complaints received through the enquiries and complaints 1800 information line, Project email address, from letters mailed to the project team, during community meetings or through construction / site staff.

Enquiries and complaints will be responded to in accordance with the Future Generation Community and Stakeholder Engagement Plan. This helps to ensure that impacts on the community are minimised wherever possible.

The project enquiries and complaints 1800 number will be included on project communications, including notifications, advertisements, and on the Snowy Hydro website.

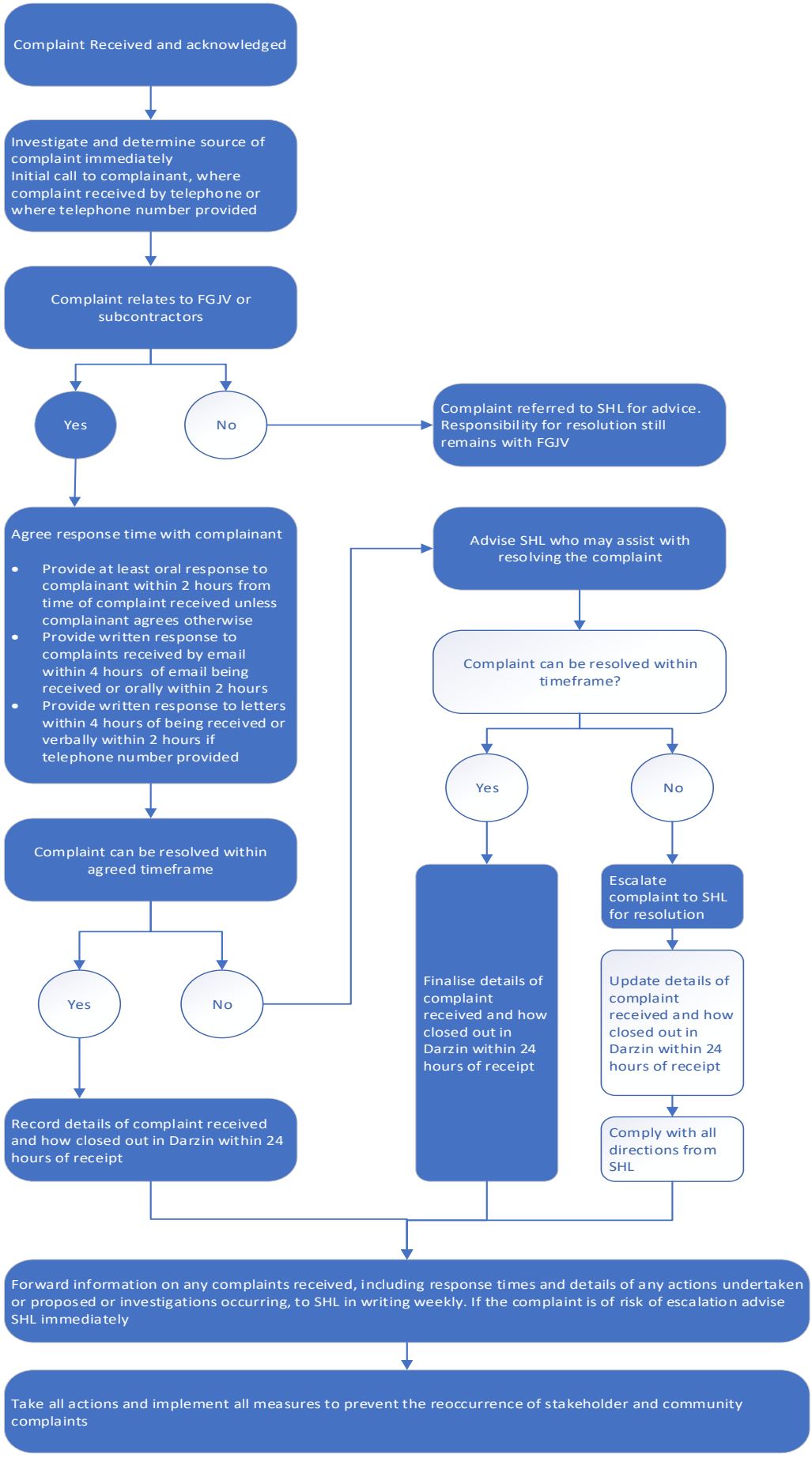


Figure 6-1: Complaints process

6.2.1. Dispute Resolution

Wherever possible, complaints will be resolved directly between Future Generation and the stakeholder.

If a complaints management process has been followed and the issue cannot be resolved, the complaint will be referred to Future Generation's Senior Management and Snowy Hydro's Representative for further review. The escalated review process will include an assessment of the details of the complaint received, any findings of the investigation undertaken in response to the complaint, and any further matters raised by the complainant.

If a complaint requires referral to senior management and Snowy Hydro, the complainant will be informed of this and the outcome of the review process.

7. INCIDENTS AND EMERGENCIES

7.1. Environmental Incidents

Environmental incidents will be managed and reported using the Future Generation Incident Notification, Investigation and Review Procedure. The Procedure flowchart is presented in Appendix A4. The Future Generation Procedure is consistent with Snowy Hydro Quality Management System procedure '*QP14-07 - Incident Management Procedure*' (Procedure).

Environmental incidents and regulatory compliance incidents may include the following events caused by the works:

- chemical spills and leaks (including hydrocarbons);
- unauthorised discharge of contaminated waters to the environment;
- unauthorised damage or interference to threatened species, endangered ecological communities or critical habitat;
- unauthorised death or injury of native fauna;
- any potential breach of legislation, including a potential breach of a safeguard;
- unauthorised dumping of waste;
- breaches of hygiene management requirements; and
- fires which result from project works.

All efforts will be undertaken to avoid and reduce impacts of incidents. A decision may need to be made by the supervisor and/or manager to suspend work. A supervisor/manager may request additional staff be deployed to the site to provide additional capacity or capability to manage the incident.

Incidents will be closed out as quickly as possible, taking all required action to resolve each environmental incident and regulatory compliance incident.

7.2. Incident Reporting

All workers (employees and contractors) are responsible for ensuring timely and effective initial internal reporting of Incidents that they are involved with or witness.

Snowy Hydro are to be informed of any environmental incidents or regulatory compliance incidents immediately verbally and within 24 hours in writing. The written notification is to occur through completion of the Snowy Hydro 'incident notification form'.

Information provided must be facts only, not statements of opinion or assumptions.

7.2.1. Incident Reporting in Accordance with the Conditions

Future Generation will immediately notify Snowy Hydro of an incident which arises through the Infrastructure Approval. The notification must be in writing to enable notification to DPIE and must include:

- the application number (SSI 10034);
- the time and date of the incident;
- details of the incident (including location); and
- any non-compliance with the approval.

Snowy Hydro will then immediately notify DPIE via the NSW Major Projects portal immediately after becoming aware of an incident.

Where the incident results in a non-compliance with the Infrastructure Approval, within 7 days after becoming aware of the non-compliance, Future Generation will provide Snowy Hydro with a detailed report of the incident and any further reports as may be requested.

Non-conformances will be reported in accordance with Section 8.5 of this EMS.

7.2.2. Incident Reporting in Accordance with the POEO Act

Future Generation will notify Snowy Hydro for notification to the EPA of pollution incidents on or around the site via the EPA Environment Line (telephone 131 555) in accordance with Part 5.7 of the POEO Act. The circumstances where this will take place include:

- if the actual or potential harm to the health or safety of human beings or ecosystems is not trivial.
- if actual or potential loss or property damage (including clean-up costs) associated with an environmental incident exceeds $10,000.

7.2.3. Management Actions

Management actions that will be implemented in response to an incident are detailed below in Table 7-1.

Table 7-1: Environmental incident management actions

Management Action	Responsibility
All suspected environmental incidents will be reported to the Snowy Hydro.	Future Generation
The cause will be investigated as soon as reasonably practicable (generally within 24 hours of the incident).	Future Generation
The responsible Contractor will undertake any required remediation works or measures.	Future Generation
The responsible Contractor will provide a briefing to all site personnel following the investigation of a confirmed environmental incident. The briefing will include any identified construction process improvements that could prevent reoccurrence of the same environmental incident.	Future Generation

7.3. Environmental Emergencies

An emergency is an event that injures people, adversely affects the environment, or damages assets, and requires a coordinated deployment of emergency resources to provide a first response.

The Segment Factory is in an easily accessible location for the response of emergency services to potential site emergencies and incidents.

All incidents on Snowy 2.0 project sites will be managed in accordance with the project's Emergency Response Management Plan (ERMP). The objectives of the ERMP is to define the organisational responsibilities, actions and resources available to the Emergency Management Team (EMT) to provide a timely and effective response to all incidents associated with the Snowy 2.0 Project. The ERMP includes:

- emergency response infrastructure;
- bushfire prevention strategies;
- escape routes and exits;

- muster arrangements;
- drills and exercises;
- incident response;
- incident recovery; and
- incident management guides for specific incidents.

Environmental emergency response plans specific to the Segment Factory include the Flood Emergency Response Plan and Spill Management Procedure.

The Flood Emergency Response Plan has been developed in accordance with schedule 3, condition 26 of the Approval and is provided as Appendix B3.

Chemicals and fuels used in the precast factory and workshops, will be stored and managed in a manner that is consistent with the conditions of Approval and REMMs. Details of preventative and reactive spill management requirements are detailed in the Spill Management Procedure, which is located within Appendix A of the Surface Water Management Plan.

In order to prevent, and where necessary manage, fires on site and bushfires within the project footprint, all offices and buildings will be fitted with smoke alarms and fire extinguishers and there will be a dedicated fire water supply. All mobile plant, heavy vehicles and light vehicles on the project will be fitted with portable fire extinguishers to enable prompt initial response to vehicle fires. Fires within the site boundary and on adjacent land will be managed and / or responded to in accordance with the ERMP.

8. INSPECTIONS, MONITORING AND AUDITING

8.1. Environmental Inspections

Implementation of a regular program of inspections is an essential part of the success of work activities. The effectiveness of environmental protection measures described in this EMS and management plans will be inspected and assessed on a weekly basis by Future Generation's environmental staff. The weekly checklist for the project will be developed by Future Generation prior to commencement of construction. The purpose of the checklist is to:

- provide a surveillance tool to ensure that safeguards are being implemented;
- identify where problems might be occurring;
- identify where sound environmental practices are not being implemented; and
- facilitate the identification and early resolution of problems.

Deficiencies and required actions will be analysed and prioritised at the completion of the inspection and timeframes for implementation of corrective actions agreed. Any non-conformances identified through the checklist process will be highlighted and an environmental inspection report (minor issues) or an environmental incident report completed.

The issue will remain 'open' until:

- the issue has been resolved;
- a new or revised procedure has been established and implemented; or
- training has been provided to relevant personnel / subcontractors.

The findings of inspections will be discussed at toolbox meetings and concerns raised will be considered by the Future Generation project management team for review or improvement of the environment procedures.

In addition to the weekly inspections, the Future Generation Environmental Manager and Supervisors and Snowy Hydro environment staff will jointly undertake regular inspections of works sites, and in particular critical activities throughout construction of the project. Stakeholders such as DPIE and EPA will be invited to attend relevant inspections.

An inspection schedule is provided in Table 8-1.

Table 8-1: Inspection schedule

Activity	Frequency	Location	Responsibility	Record
Environmental Site Inspection	Weekly	Site wide	Future Generation Environmental Manager	Site inspection checklist
Joint Environmental Site Inspection	Fortnightly or at a greater frequency as requested by Snowy Hydro. This may also form the weekly inspection.	Site wide	Snowy Hydro, Future Generation Environmental Manager and Foreman / engineer	Snowy Hydro inspection report
Management Site Visit Inspections	Min. quarterly	Site wide	Corporate Senior Management	Inspection Report
Site preparation rainfall inspection (during construction)	When significant rainfall is forecasts ((i.e. > 80 mm in 24 hours).	Site wide	Future Generation Environmental Manager or nominated representative	Site inspection checklist

Activity	Frequency	Location	Responsibility	Record
Post rainfall Inspection (during construction)	Following significant rainfall (i.e. > 80 mm in 24 hours).	Site wide	Future Generation Environment Team and/ or Site Supervisor	Post-rainfall Inspection Form

8.2. Monitoring

8.2.1. Monitoring Programs

Monitoring will be undertaken for environmental aspects of the project to confirm the adequacy of implementation of the management measures and will highlight any non-conformances or potential non-conformances across the life of the project. Specific monitoring programs have been developed for high risk aspects of the project and these are included within the relevant management plans. This includes a Noise Monitoring and Management Plan.

The monitoring programs have been developed to address the requirements of the conditions of Approval.

The timing, frequency, methodology, locations and responsibilities for the proposed environmental monitoring programs are specified in the respective management plans and summarised in Table 8-2. The monitoring programs range from those involving formal sample collection, analysis and measurement, to those involving a more qualitative assessment.

Table 8-2: Environmental monitoring summary

Activity	Management Plan	Frequency	Responsibility	Record
Weekly environmental site inspection	Environmental Management Strategy	Weekly	Site Supervisor / Future Generation Environment Team	Site inspection checklist
Validation noise monitoring for: • construction noise levels, • road traffic noise; and • operational noise levels.	Noise Monitoring and Management Plan	During initial construction and operation	Future Generation Environment Team	Noise monitoring sheet
Attended noise monitoring at nearest sensitive receivers	Noise Monitoring and Management Plan	Quarterly	Future Generation Environment Team	Noise monitoring sheet
Noise intensive plant and equipment spot checks	Noise Monitoring and Management Plan	Throughout construction and operation	Future Generation Environment Team	Noise monitoring sheet
Driver Code of Conduct Measures Monitoring	Traffic Management Plan	Quarterly	Site Supervisor / Future Generation Environment Team	Various
Road closures	Traffic Management Plan	Weekly	Site Supervisor / Future Generation Environment Team	Traffic inspection report
Cooma/Tumut	Traffic Management Plan	Monthly during heavy vehicle or over-dimension vehicle use	Site Supervisor / Future Generation Environment Team	Traffic inspection report
Extreme weather monitoring	Flood Emergency Response Plan	Category 1: Site preparation • when 80 mm (or greater) of rainfall is forecast over a 24 hour period (or less), sediment and erosion controls will be inspected and prepared in accordance with the erosion and sediment control plan Category 2: Alarm • if 50 mm (or greater) of rainfall falls within a 2 hour period, Site Supervisor to monitor flooding conditions and overland flows, and initiate flood evacuations from the site if required.	Site Supervisor / Future Generation Environment Team	Site inspection checklist
Weed monitoring	Weed Management Control Plan	Bi-annually	Future Generation Environment Team	Weed monitoring record

8.2.2. Monitoring Results Outside of Expected Range

Irrespective of the type of monitoring conducted, the results will be used to identify potential or actual problems arising from construction processes. Where monitoring results are outside of the expected range, the process described below implemented, which will include:

- the results will be analysed by the Future Generation Environmental Manager or Environmental Coordinator with the view of determining possible causes for the exceedance including a review of the potential construction activities impacting that site of the exceedance;
- a site inspection will be undertaken;
- relevant personnel will be contacted and advised of the problem;
- an agreed action will be identified; or
- action will be implemented to rectify the problem.

Any exceedances which may result in a non-compliance of the conditions, will be reported in accordance with condition 5 of schedule 4 of the Approval.

Monitoring outcomes which exceed certain thresholds may be subject to the implementation of a trigger action response plan (TARP). These have been developed and provided within the relevant management plans to allow prompt identification of unpredicted impacts and to guide the implementation additional management measures and corrective actions should certain conditions arise. They provide potential indicators to the exceedances beyond those predicted, assigning a hierarchy of alarms or trigger levels to each potential indicator, specifying appropriate responses and when these should be applied.

8.3. Auditing

The purpose of auditing is to assess compliance with the EMS and sub-plans, the Approval and any relevant legal and other requirements (e.g. licences, permits, regulations, Snowy Hydro contract documentation).

8.3.1. Internal Audits

Internal auditing will be undertaken with the environmental management documents and environmental aspects audited based on the stage of the project and environmental risk. The audit schedule will be maintained by Future Generation for the duration of the project and updated as required, when the schedule requires change.

8.3.2. External Audits

An independent environmental audit will be commissioned by Snowy Hydro and conducted within of three months the commencement of operation and two years after commencing operation unless the Planning Secretary directs otherwise. The audit is to be carried out by a suitably qualified lead auditor and an experience independent team of experts, including a traffic management expert whose appointment has been endorsed by the Planning Secretary. The audit shall:

- include consultation with relevant agencies;
- assess whether the development complies with the relevant requirements in this approval, and any strategy, plan or program required under this approval; and
- recommend appropriate measures or actions to improve the environmental performance of the development and any strategy, plan or program required under this approval.

Within 3 months commissioning this audit, or as otherwise agreed by the Planning Secretary, Snowy Hydro must submit a copy of the audit report to DPIE, together with a response to any recommendations and a timetable for implementation.

As deemed necessary by Snowy Hydro, Snowy Hydro will conduct an audit of the EMS, sub-plans or contract requirements on Future Generation. Snowy Hydro will provide Future Generation with a copy of the audit reports, identifying non-compliance and corrective actions required.

Audit findings will be recorded in the quality system database by Future Generation for action and close out. The action register will detail the source of the action (e.g. audit, inspection or other), the action required, target close out date, actual close out date and the person responsible for the action item.

Further details are provided in Section 8.5 in relation to non-conformance and corrective action.

8.4. Reporting

8.4.1. Reporting Non-Compliances

Future Generation is to notify Snowy Hydro as soon as possible and at least within 24 hours of becoming aware of a non-compliance.

Future Generation is to prepare a report for Snowy Hydro within 7 days of becoming aware of the non-compliance. The report shall be prepared in accordance with condition 6 of schedule 4 of the Approval, which details:

- the application number (SSI-10034);
- set out the condition of Approval that the project is non-compliant with;
- the way in which it does not comply;
- the reasons for the non-compliance (if known); and
- what actions have been taken, or will be taken, to address the non-compliance.

Snowy Hydro will notify DPIE in writing to via the NSW Major Projects portal within 7 days of becoming aware of any non-compliance, with the details provided above.

8.4.2. Other Reporting

Future Generation are required to prepare and submit various reports to Snowy Hydro and to undertake their own reporting needs including those under the conditions of Approval. A summary of these reports is provided in Table 8-3. This table will be updated as required by Future Generation during the progress of the project.

Table 8-3: Other reporting requirements

Report	Requirement	Timing	Responsibility	Recipient
EPL Monthly Report	As required by the EPL	As required by the EPL	Snowy Hydro or Future Generation	EPA and Snowy Hydro
EPL Annual Return	As required by the EPL	Annual based on date of EPL issue	Snowy Hydro or Future Generation	EPA and Snowy Hydro
Snowy Hydro and/or EPA environmental inspection reports	Response to matter raised in Snowy Hydro and/or EPA site inspections.	As required. Timing of close out of actions dependent on risk.	Environmental Manager, Environmental Coordinators	Snowy Hydro / EPA

8.4.3. Project Website

A website will be maintained that includes the following:

- links to the EIS;
- final layout plans for the development;
- current statutory approvals for the development;
- approved strategies, plans or programs required under the conditions of this approval;
- the proposed staging plans for the development if the construction, operation or decommissioning of the development is to be staged;
- how complaints about the development can be made;
- a complaints register;
- compliance reports;
- any independent environmental audit, and the Proponent's response to the recommendations in any audit; and
- any other matter required by the Planning Secretary.

8.5. Non-Conformance, Corrective and Preventative Action

A non-conformance is the failure to comply with the requirements of this EMS, sub-plans and other supporting documentation. Where a non-conformance has been identified, a correction action/preventative action will be developed and implemented to minimise the potential for recurrence.

In the event of a non-conformance the following will occur:

- the nature of the event will be investigated by the Environmental Manager (or representative);
- monitoring may be undertaken;
- the effectiveness or need for new/additional controls will be reviewed;
- an appropriate preventative and corrective action will be implemented;
- strategies will be identified to prevent reoccurrence;
- environmental documentation will be reviewed and revised; and
- the activities may be stopped, if necessary, by the Environmental Manager in consultation with the Project Director and project HSE Manager. A hold will be placed on the area until appropriate actions have been undertaken.

Corrective actions may be generated from a number of sources, including but not limited to incidents, audits, inspections and management reviews. Corrective actions will be systematically managed to ensure issues raised are recorded and closed out in a timely manner.

Corrective/preventative actions will be entered into Future Generation's quality system database and include detail of the issue raised, the action required, and timing and responsibilities. The database will be reviewed regularly to ensure actions are closed out as required. The close out details shall include the date closed and the name of the person verifying completion of the required action. The corrective actions register shall be provided to Snowy Hydro upon request.

9. DOCUMENTATION

9.1. Records

The Environmental Manager is responsible for maintaining all environmental management documents as required by the Approval, the EPL, this EMS, the Contract and any other licences and approvals. The following records are those which are likely to be generated through delivery of the project:

- monitoring and inspection records;
- correspondence with public authorities;
- induction and training records;
- site specific records such as those prepared for out of hours works, clearing records, unexpected finds etc;
- waste classification records, waste disposal and recycling records, and section 143 notices for transporting and disposing of waste;
- plans, strategies and reports, and revisions thereof, to ensure compliance with the conditions of Approval and the EPL;
- reports on environmental incidents, environmental non-conformances, and corrective actions;
- compliance reports, monthly reports and annual reports; and
- audit reports.

All environmental management documents are subject to ongoing review and continual improvement.

Refer to Section 1.7 for details around revisions to this EMS.

All relevant schedules/ records will be on site at all times during construction and operation. The Environmental Manager is to make available environmental records to Snowy Hydro if requested.

9.2. Document and Data Control

The Environmental Manager will coordinate the preparation, review and distribution, as appropriate, of the environmental documents listed above. During construction, environmental documents will be stored at the main site office and can be accessed on request to the Environmental Manager.

A document and data control procedure has been implemented to control the flow of documents and data within the Future Generation teams and between Future Generation, Snowy Hydro and stakeholders.

Documents and data that are to be issued and liable to change will be controlled to ensure that they are approved before issue and that the current issue or revision is known to and available to those requiring them. Controlled documents and data will be uniquely identified and will bear a defined revision number recorded on each page of the document.

APPENDIX A1 – LEGAL AND OTHER REQUIREMENTS

Relevant Legislation

Legislation	Activity / aspect	Reference	Requirement	Responsibility	Applicable
General					
Environmental Planning and Assessment Act 1979	All	Section 5.19	Approval of the Minister required to carry out State significant infrastructure (SSI). Comply with the conditions of Approval and the revised environmental management measures from the Submissions Report.	Snowy Hydro	Yes Snowy Hydro including the Segment Factory is declared to be Critical State significant infrastructure (CSSI) with the declaration coming into effect on 9 March 2018. Construction and operation of the Segment Factory may be carried out without development consent under Part 4 of the EP&A Act, however application for approval of the CSSI is to occur. The Environmental Impact Statement for the Segment Factory as submitted to Department of Planning and Environment in September 2019 and publicly exhibited between 10 October 2019 and 06 November 2019. In December 2019 the response to submissions was prepared (Polo Flat Segment Factory Response to Submissions for Snowy 2.0). Approval for the Snowy 2.0 Segment Factory was granted by the Minister for Planning on 31 March 2020.
Environment Protection and Biodiversity Conservation Act 1999	Proposed action	Section 28	A person must not take an action that has, will have or is likely to have a significant impact on any of the matters of national environmental significance without approval.		No The proposed Segment Factory is not located near matters of national environmental significance (MNES) including national heritage places.
Protection of the Environment Operations Act 1997	Scheduled activity	Section 47 Section 48	Do not carry out or allow an activity listed in Schedule 1, or carry out work to enable such an activity, unless the premises are licensed by the EPA.		Yes An EPL will be obtained for the project for the scheduled activity of concrete works.
	Harming the environment	Section 115 Section 116 Section 117	Do not risk harming the environment by wilfully or negligently: • disposing of waste unlawfully. • causing any substance to leak, spill or otherwise escape (whether or not from a container); or • causing any controlled substance to be emitted into the atmosphere.	Contractor	Yes
	Notification of pollution incidents	Section 148	Notify the EPA immediately of pollution incidents where material harm to the environment is caused or threatened.	Snowy Hydro / Contractor	Yes Included within the EMS.
	PIRMP prepared if EPL required	Section 153A-F	Requires the holder of an EPL to prepare a pollution incident response management plan (PIRMP)	Snowy Hydro / Contractor	Yes A PIRMP will be prepared as part of the EPL.

Legislation	Activity / aspect	Reference	Requirement	Responsibility	Applicable
Roads Act 1993	Road use	Section 138	Road occupancy licences (ROLs) required for any activity likely to impact on traffic flow	Contractor	Yes ROLs will be required to be obtained by the Contractor.
Environmentally Hazardous Chemicals Act 1985	Hazards and risks	Section 28	The legislation aims to minimise the risks to human health and the environment from hazardous industrial chemicals. Obtain a licence to undertake prescribed activities involving environmentally hazardous chemicals or declared chemical wastes.	Contractor	Prescribed activities are activities which, by reason of a chemical control order, may lawfully be carried on only under the authority of a licence. Prescribed activity is defined in the *Environmentally Hazardous Chemicals Act 1985* as 'in relation to a chemical or any chemical waste, means the act of manufacturing, processing, keeping, distributing, conveying, using, selling or disposing of the chemical or waste or any act related to any such act.' A licence to carry out an activity prohibited by a chemical control order must be obtained from EPA. EPA currently have five chemical control orders in place for: • aluminium smelter wastes containing fluoride and / or cyanide; • dioxin-contaminated waste materials; • organotin waste materials; • polychlorinated biphenyl compounds; • scheduled chemical wastes. There is no known handling of these substances which would occur, however should the requirements of the *Environmentally Hazardous Chemicals Act 1985* be triggered, then a licence may be required.
Dangerous Goods (Road and Rail Transport) Act 2008	Hazards and risks	Section 9	Ensure that dangerous goods are transported in a safe manner.	Contractor	Dangerous goods are required to be transported in a safe manner. Vehicles that transport dangerous goods are required to be licensed. Drivers transporting dangerous goods are required to be licensed. Licences to transport dangerous goods will be obtained if required.
Pesticides Act 1999	Hazards and risks	Section 12 Section 13 Section 14 Section 15 Section 17	Use pesticides in an environmentally sensitive manner. Do not use an unregistered pesticide without a permit. Read the label or permit for the pesticide. Use registered pesticides in accordance with instructions on the label. Do not use any restricted pesticide unless authorised by a certificate of competency or a pesticide control order under the Act. Compliance with pesticide codes of practice is required.	Contractor	The Contractor is required to undertake project works in accordance with relevant legislative requirements including (if required), the application of pesticides in accordance with the *Pesticides Act 1999.* In the event that an unregistered pesticide is used, a permit will be required to be obtained.

Legislation	Activity / aspect	Reference	Requirement	Responsibility	Applicable
National Greenhouse and Energy Reporting Act 2007 and Regulations 2008	Greenhouse gas emissions	-	Accounting and reporting of greenhouse gases produced and energy consumed during construction.	Snowy Hydro / Contractor	Yes Applicability dependent on thresholds.
Water					
Protection of the Environment Operations Act 1997	Water pollution	Section 120 Section 122	Do not cause water pollution (other than to a sewer), except in accordance with the conditions of any EPA licence.		Yes Management measures have been incorporated within the EMS.
Water Management Act 2000	Water use approval	Section 89	A water use approval confers a right on its holder to use water for a particular purpose at a particular location.	-	No Certain approvals and authorisations are not required for approved SSI projects. In accordance with s 5.23 of the EP&A Act, SSI projects are exempt from requiring a water use approval under section 89.
	Water management works approval	Section 90	Do not construct/use a water supply work, drainage work or flood work without the appropriate approval.	-	No There are three kinds of water management work approvals, namely, water supply work approvals, drainage work approvals and flood work approvals: • a water supply work approval authorises its holder to construct and use a specified water supply work at a specified location. • a drainage work approval confers a right on its holder to construct and use a specified drainage work at a specified location. • a flood work approval confers a right on its holder to construct and use a specified flood work at a specified location. Certain approvals and authorisations are not required for approved SSI projects. In accordance with s 5.23 of the EP&A Act, SSI projects are exempt from requiring a water management work approval under section 90.
Biodiversity					
Biodiversity Conservation Act 2016	Flora and fauna		Legislation responsible for the conservation of biodiversity in NSW through the protection of threatened flora and fauna species, populations and Endangered Ecological Communities (EECs). The BC Act, together with the Biodiversity Conservation Regulation 2017, established the Biodiversity Offsets Scheme.	Snowy Hydro	Yes A Biodiversity Offsets Strategy has been incorporated into the RTS.

Legislation	Activity / aspect	Reference	Requirement	Responsibility	Applicable
Biosecurity Act 2015	Weed management	Section 22	Under Part 3 of the Biosecurity Act 2015, landowners or land managers have a general biosecurity duty to prevent, eliminate or minimise the biosecurity risk posed or likely to be posed by priority weeds. A biosecurity risk exists where priority weeds have the potential to negatively impact on agriculture, industry, the liveability of our city, human health or the environment. Invasive weeds are known as 'Biosecurity Matter' or 'Priority Weeds'.	Contractor	Yes The Riverina Regional Strategic Weed Management Plan 2017 - 2022 (RLLS 2017) outlines how government, industry, and the community will share responsibility and work together to identify, minimise, respond to and manage weeds within the Riverina Region, which includes the Segment Factory area. The plan also supports regional implementation of the Biosecurity Act. African Lovegrass (*Eragrostis curvula*), identified within the Segment Factory site, is a weed of regional priority within the South East. This species is subjected to regional recommended measures as per those detailed in the South East Regional Strategic Weed Management Plan.
Heritage					
Heritage Act 1977	Heritage	Section 57	Do not undertake an activity that will affect a place, building, work, relic, moveable object or precinct which is subject to an Interim Heritage Order or is listed on the State Heritage Register without approval from the Heritage Council.	Not applicable	No Certain approvals and authorisations are not required for approved SSI projects. In accordance with s 5.23 of the EP&A Act, SSI projects are exempt from requiring approvals under Part 4 of the *Heritage Act 1977.* Section 57 is within Part 4 of the *Heritage Act 1977.*
		Section 139	An excavation permit is required under certain circumstances. A person must not disturb or excavate land with knowledge or reasonable cause to suspect that the disturbance or excavation will or is likely to result in a relic being discovered, exposed, moved, damaged or destroyed; or a person must not disturb or excavate land on where a relic has been discovered or exposed.	Not applicable	No Certain approvals and authorisations are not required for approved SSI projects. In accordance with s 5.23 of the EP&A Act, SSI projects are exempt from requiring approvals under section 139 of the *Heritage Act 1977.*
		Section 146	Notify the heritage Council on discovery of a relic.	Contractor / Snowy Hydro	Yes A person who is aware or believes that he or she has discovered or located a relic must within a reasonable time notify the Heritage Council of the location of the relic, unless he or she believes on reasonable grounds that the Heritage Council is aware of the location of the relic, and within the period required by the Heritage Council, furnish the Heritage Council with such information concerning the relic as the Heritage Council may reasonably require.
Aboriginal and Torres Strait Islander Heritage Protection Act 1984 (Commonwealth)	Protection of areas and objects	Section 20	Report any discovery of Aboriginal remains to the Federal Minister for the Environment and Heritage.	Snowy Hydro / Contractor	Yes
		Section 22	Comply with the provisions of any declaration in relation to a significant Aboriginal area or object.	Snowy Hydro / Contractor	Yes

Legislation	Activity / aspect	Reference	Requirement	Responsibility	Applicable
Contaminated material					
Protection of the Environment Operations Act 1997	Land pollution	Section 142A – Section 142E	Do not cause or permit land pollution other than under authority of a licence or regulation (however it is not a land pollution offence to place virgin excavated natural material or lawful pesticides and fertilisers on land, or by placing matter on land that has been notified to the EPA as an unlicensed landfill and which is operated in accordance with the regulations.)	Contractor	Yes
Contaminated Land Management Act 1997	Reporting contamination	Section 60	Duty to report contamination.	Snowy Hydro / Contractor	Yes If project activities have caused land contamination, or a landowner becomes aware of land that is contaminated, there is a legal duty under section 60 of the *Contaminated Land Management Act 1997* to notify the EPA. The level of contaminants in the soil is to be above the *National Environmental Protection (Assessment of Contamination) Measure 1999*; or meet the criterion prescribed by the regulations; or the contaminant has or will enter neighbouring land, the atmosphere, groundwater or surface water.
Noise					
Protection of the Environment Operations Act 1997	Plant maintenance and operation	Section 139	Do not operate plant if it emits noise caused by failure to maintain or operate the plan in a proper and efficient manner.	Contractor	Yes
Protection of the Environment Operations Act 1997	Materials management	Section 140	Do not cause noise by failing to properly and efficiently deal with materials.	Contractor	Yes
Waste					
Protection of the Environment Operations Act 1997	Littering	Part 5.6A	Do not litter in a public place or an open private place. Do not litter from a vehicle. Only deposit advertising material in receptacles provided for mail or newspapers or under the door of the premises. Do not deposit advertising material on or in vehicles.	Contractor	Yes
	Waste and transportation	Part 3.2 Section 47 Schedule 1	Do not undertake a scheduled waste activity unless in accordance with an environment protection licence.	Contractor	Yes A licence must be obtained when undertaking scheduled activities at the site. Section 143 notices should be obtained in accordance with the Waste Management Strategy for the application of any waste off site.

Legislation	Activity / aspect	Reference	Requirement	Responsibility	Applicable
		Section 143	Only transport waste to a facility that can lawfully accept the waste.		Yes Section 143 Notices are to be obtained for waste that is sent to a facility / premise outside of the project boundary in accordance with the EMS.
		Section 115	Do not dispose of waste in a manner that harms or is likely to harm the environment.		Yes Relevant management measures have been included in the EMS.
Protection of the Environment Operations (Waste) Regulation 2005	Waste and transportation	Regulation cl.49	Comply with general requirements for the transport of waste.	Contractor	Yes For example, any vehicle used by the person to transport waste must be kept in a clean condition and be maintained so as to prevent spillage of waste. For some wastes only licensed transporters can be used.
		Regulation Part 3	Comply with record keeping requirements in relation to the transport of certain types of waste.	Contractor	Yes
Local Government Act 1993	Wastewater	Section 68	Section 68 of the LG Act requires approval of the relevant local council to build/install and operate a sewage management system.	Contractor	Yes
Notification requirements (summarised from the details above)					
Protection of the Environment Operations Act 1997	Notification of pollution incidents	Section 148	Notify the EPA immediately of pollution incidents where material harm to the environment is caused or threatened.	Contractor / Snowy Hydro	Yes
Heritage Act 1977	Notify the Heritage Council on discovery of a relic	Section 146	Notify the Heritage Council on discovery of a relic.	Contractor / Snowy Hydro	Yes A person who is aware or believes that he or she has discovered or located a relic must within a reasonable time notify the Heritage Council of the location of the relic, unless he or she believes on reasonable grounds that the Heritage Council is aware of the location of the relic, and within the period required by the Heritage Council, furnish the Heritage Council with such information concerning the relic as the Heritage Council may reasonably require.
Contaminated Land Management Act 1997	Reporting contamination	Section 60	Duty to report contamination.	Snowy Hydro / Contractor	Yes If project activities have caused land contamination, or a landowner becomes aware of land that is contaminated, there is a legal duty under section 60 of the *Contaminated Land Management Act 1997* to notify the EPA. The level of contaminants in the soil is to be above the *National Environmental Protection (Assessment of Contamination) Measure 1999*; or meet the criterion prescribed by the regulations; or the contaminant has or will enter neighbouring land, the atmosphere, groundwater or surface water.

APPENDIX A2 – ENVIRONMENT, SUSTAINABILITY AND COMMUNITY POLICY

Policy for Environment, Sustainability & Community

Future Generation strives to deliver environmentally sustainable outcomes for energy, materials and water, during all stages of its operations. Future Generation values sustainable development and believes respect for the environment and the community in which it operates is fundamental to business success.

Future Generation ensures human, financial and technological resources are provided for the active management and maintenance of the Future Generation Management System, aligned with the requirements of ISO 14001 to drive continual improvement.

At Future Generation, employees and contractors show their commitment to minimising environment and social impacts and promoting sustainable development by:

- Sharing a belief in a culture of zero harm where harm to people or the environment is unacceptable;
- Stopping work where an activity could harm the environment or community;
- Planning and performing activities to achieve zero harm outcomes; and
- Understanding their roles, responsibilities and behaviours expected of them.

Future Generation engages with clients, partners, communities and other interested parties to understand key social and environmental aspects, and assess potential impacts to ensure that its operations are conducted in accordance with the principles of this policy.

PRINCIPLES

Wherever Future Generation operates the following principles apply to promote sustainable development, in all its operating environments:

- Personal Responsibility – Individuals take personal responsibility to comply with relevant laws and regulations and apply responsible standards as detailed in the Future Generation Management System where laws do not exist.
- Social Responsibility – Future Generation respects the traditional rights of indigenous peoples and values cultural heritage in the areas we work.
- Accountability – Future Generation holds all levels in our organisation accountable for compliance with relevant laws and regulations, regular monitoring, reviewing and reporting on our progress against our targets that enhance performance and promote efficient use of resources.
- Risk Management – Future Generation identifies, assesses and manages risks to the environment and our host communities.
- Learning Culture – Future Generation maintains regular, transparent and effective communication with all employees, interested parties, stakeholders and communities affected by its activities and improves the livelihoods of the communities in which we operate through local employment and training opportunities.
- One Consistent Approach - Design and construct to efficiently use energy and raw materials, minimise waste, reduce and prevent pollution with a focus on sustainable solutions.

Future Generation undertakes to communicate this policy and environmental performance to all persons working for or on its behalf, and to the public or other interested parties as required. The policy will be reviewed every three years to maintain relevance to Future Generation business activities.

The Project Director of Future Generation Limited is accountable to the Board of Directors for ensuring that this Policy is implemented throughout Future Generation's operation.

Signed:
Name:
Executive Committee Representative
April 2019

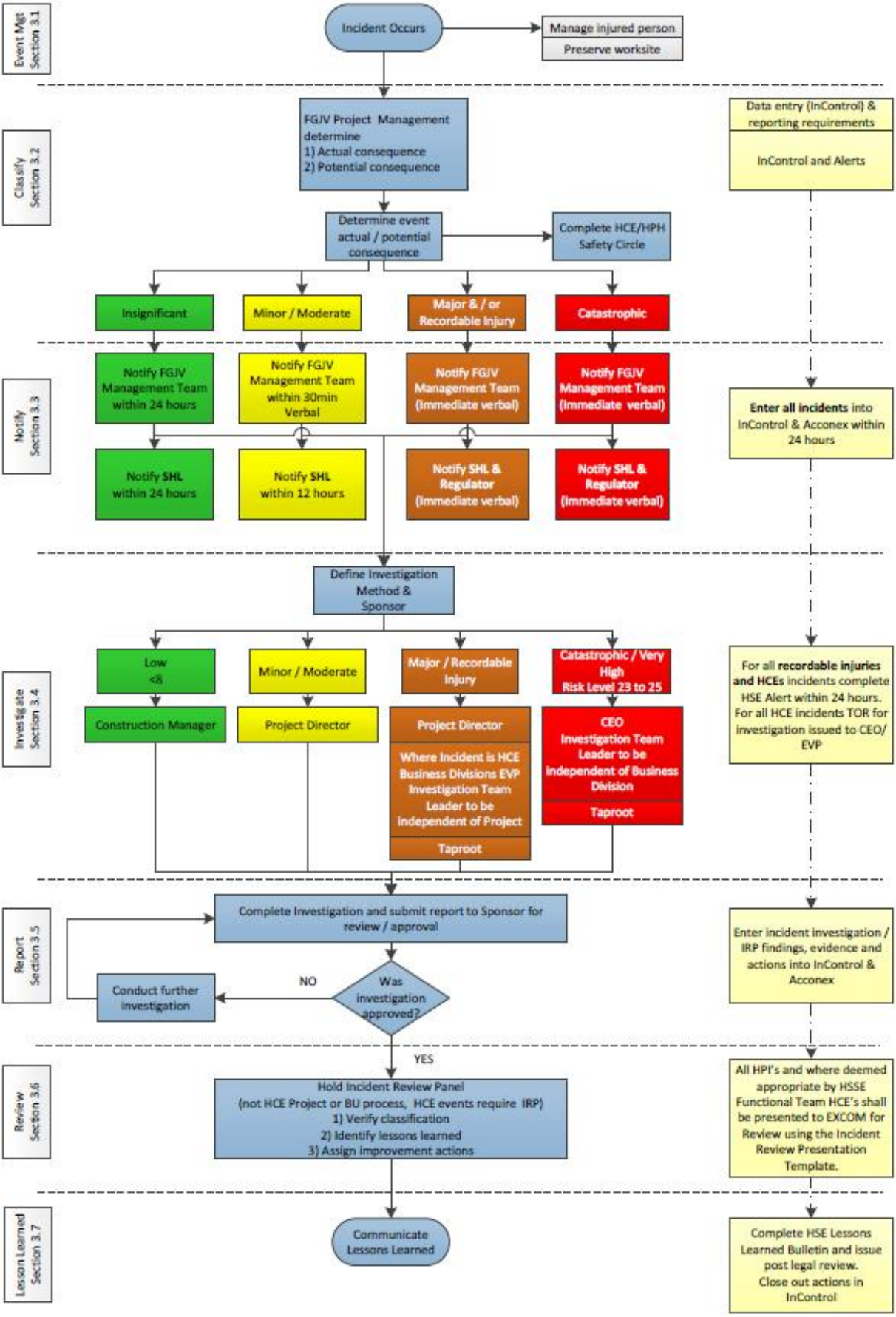
Signed:
Name:
Executive Committee Representative
April 2019

APPENDIX A3 – ENVIRONMENTAL ASPECTS AND IMPACTS REGISTER

Element	Activities / Aspects	Risk	Cause	Possible Outcome	Consequence	Likelihood	Initial Risk Rating	Risk Treatment(s)	Consequence	Likelihood	Residual Risk Rating	Risk Owner
Biodiversity	• Vegetation clearing • Topsoil stripping	• Injury/mortality of fauna • Habitat removal	• Removal of occupied habitat • Fragmentation of habitat	• Reputational impacts • Potential regulatory action	2 - Minor	4 - Likely	8 - Medium	• Unexpected Species Finds Procedure • Pre-clearing and Clearing Procedure • Establishment of hard no-go exclusion zones and defined clearing limits prior to construction. • Site induction to include information on the threatened flora and fauna species • Sensitive Area Plans	2 - Minor	2 - Unlikely	4 - Low	Future Generation
Biodiversity	• Movement of vehicles • Use of artificial light • Development of the site	• Disturbance to fauna	• Increase in noise, dust and light pollution	• Disturbance of fauna	2 - Minor	3 – Possible	6 - Medium	• Traffic Management Plan • Fencing around the site • Exclusion zones and defined clearing limits and no-go zones • Sensitive Area Plans	2 - Minor	2 - Unlikely	4 - Low	Future Generation
Weed dispersal	• Vegetation Clearing • Topsoil stripping	• Introduction and spread of weeds, pests and pathogens	• Inadequate management of cleared weeds and topsoil	• Establishment of invasive populations outside of the project area • Potential regulatory action • Financial penalties • Reputational impacts	2 - Minor	4 - Likely	8 - Medium	• Weed Management Control Plan • Weed washdown station • Pre-clearing and Clearing Procedure	2 - Minor	2 - Unlikely	4 - Low	Future Generation
Contamination	• Site decontamination • Topsoil stripping • Earthworks	• Spreading existing contaminated materials into soil and surface water • Construction activities resulting in the creation of additional areas of contamination • Exposure of workers and / or the public to contaminated material	• Inadequate management of pre-existing ACM and other contamination	• Exposure of workers or the public to contamination • Spread of contamination • Potential regulatory action from agencies • Financial penalties • Reputational impacts	4 – Major	4 - Likely	16 - High	• Unexpected Contamination Finds Procedure • Asbestos Management Plan (under safety legislation)	3 - Moderate	2 - Unlikely	6 - Medium	Snowy Hydro
Contamination	• Storage and use of fuels, oils and other hazardous substances	• Spreading existing contaminated materials into soil, surface water and ground water • Construction activities resulting in the creation of additional areas of contamination	• Inadequate management of hazardous substances during construction and operation	• Exposure of workers or the public to contamination • Spread of contamination • Potential regulatory action from agencies • Financial penalties • Reputational impacts	4 – Major	4 - Likely	16 - High	• Bunding of chemicals • Weekly environmental inspections • Audits	3 - Moderate	2 - Unlikely	6 - Medium	Future Generation
Noise	• Earthworks • Facility Operations	• Increased noise levels at sensitive receivers	• Noise levels from construction and operational activities and transport of materials, equipment and personnel exceeds the levels assessed in the project approval.	• Sleep disturbance at sensitive receiver locations • Decreased amenity Potential regulatory action from agencies • Loss of support from local community	3 - Moderate	3 - Possible	9 - Medium	• Noise Monitoring and Management Plan • Traffic Management Plan • Out of hours work procedure	3 - Moderate	1 - Rare	3 - Low	Future Generation
Traffic	• Transport of materials, equipment and personnel • Transport of precast concrete segments to Exploratory and Main Works sites	• Increased traffic volumes and congestion, increased road noise, degradation of roadways, traffic delays	• Heavy and light vehicles moving in convoys through local towns to the project site.	• Traffic delays on local and regional roads • Increased safety hazard • Adverse reputational impacts • Increased noise and air quality impacts	3 - Moderate	4 - Likely	12 - High	• Traffic Management Plan • Drivers code of conduct	3 - Moderate	3 - Possible	9 - Medium	Future Generation
Surface Water - Construction	• Vegetation Clearing • Topsoil stripping • Earthworks • Stockpiling	• Erosion and sedimentation • Contamination of surface water and breach of EPL water quality performance standards • Mud tracking on public roads	• Inadequate management of exposed sediment and topsoil	• Potential regulatory action • Potential project delays • Financial penalties • Reputational impacts • Water pollution • Loss of topsoil	3 - Moderate	3 - Possible	9 - Medium	• Erosion and sediment control plans • Clean water diversions • Process and intercepted water management • Sediment basins and water treatment • Entry / Exit sediment controls including rumble grids or wheel washes where necessary	2 - Minor	2 - Unlikely	4 - Low	Future Generation

Element	Activities / Aspects	Risk	Cause	Possible Outcome	Consequence	Likelihood	Initial Risk Rating	Risk Treatment(s)	Consequence	Likelihood	Residual Risk Rating	Risk Owner
								• Where necessary public sealed roads will be maintained with sweepers. • Dirt on public roads will be inspected at the main entry and exit points				
Surface Water - Operational	• Overflows • Water use and extraction	• Contamination of stormwater runoff (including improper spill management). • Water quality impacts	• Changes to flow regime from new infrastructure	• Potential regulatory action • Financial penalties • Reputational impacts • Water pollution	3 - Moderate	3 - Possible	9 - Medium	• Erosion and sediment control plans • Clean water diversions • Sediment basins and water treatment • Spill Response Procedure	2 - Minor	2 - Unlikely	4 - Low	Future Generation
Surface water	• Storage of hazardous materials • Facility operation	• Contamination of surface water, breach of EPL water quality performance standards	• Spill of stored hazardous material escaping containment into waterways	• Hydrocarbon pollution • Potential regulatory action from agencies • Potential project delays • Financial penalties • Reputational impacts	3 - Moderate	3 - Possible	9 - Medium	• Erosion and sediment control plans • Clean water diversions • Process and intercepted water management • Sediment basins and water treatment	2 - Minor	2 - Unlikely	4 - Low	Future Generation
Waste	• Remediation of ACM and other contaminants • Waste generated from chemical and/or spill clean-up and remediation	• Unlawful disposal of materials	• Inadequate management of contaminated material storage, disposal and tracking	• Potential regulatory action from agencies • Financial penalties • Reputational impacts	3 - Moderate	3 - Possible	9 - Medium	• Asbestos Management Plan • Unexpected Contamination Finds Procedure	2 - Minor	1 - Rare	2 - Low	Future Generation
Waste	• General waste from offices and other facilities	• Excess consumption of resource and energy use • Excess waste being directed to landfill	• Over order of products • Poor waste disposal practices • Poor waste separation practices	• Reputational impacts	2 - Minor	3 - Possible	6 – Medium	• All waste to be classified in accordance with EPA Waste Classification Guidelines • No waste will be received or disposed of on site • Where possible, wastes will be recycled or reused	2 – Minor	2 - Unlikely	4 - Low	Future Generation
Air Quality - Operational	• Wind erosion from material storage areas • Unloading and loading of CBP products • CBP processes	• Increased dust emissions • Visible dust plumes and deposition of dust on surfaces	• Inadequate dust suppression mitigation measures on-site	• Excessive dust emission/deposition in surrounding environment • Non-compliance with EPL • Potential regulatory action • Financial penalties • Loss of community support • Reputational risk	2 - Minor	3 - Possible	6 - Medium	• Weekly inspections • Audits • Bays / wings on storage areas • Sealed roads • Routine sweeping of sealed roads • Review of weather forecasts on a regular basis for unfavorable weather (dry weather, strong winds) and reactive measures implemented.	2 - Minor	1 - Rare	2 - Low	Future Generation
Air Quality - Construction	• Demolition • Material handling • Movement of vehicles along unpaved traffic routes • Wind erosion of exposed surfaces	• Increased dust emissions • Visible dust plumes and deposition of dust on surfaces	• Inadequate dust suppression mitigation measures on-site	• Excessive dust emission/deposition in surrounding environment • Non-compliance with EPL • Potential regulatory action • Financial penalties • Loss of community support • Reputational risk	2 - Minor	3 - Possible	6 - Medium	• Weekly inspections • Audits • Use of water cart or other physical means as required (polymers) • Topsoil stripping to be minimised • Dirt on public roads will be inspected at the main entry and exit points • Review of weather forecasts on a regular basis for unfavourable weather (dry weather, strong winds) and reactive measures implemented.	2 - Minor	1 - Rare	2 - Low	Future Generation
Flood Emergency	• Earthworks and change in catchment	• Localised flooding within project boundary	• Alterations to existing hydrological regime	• Localised flooding • Damage to project infrastructure • Project access/egress interrupted • Project delays • Water quality impacts • Potential regulatory actions	3 - Moderate	2 - Unlikely	6 - Medium	• Flood Emergency Response Plan • Consideration of hydrology throughout detailed design	3 - Moderate	1 - Rare	3 - Low	Future Generation

APPENDIX A4 – ENVIRONMENTAL INCIDENT PROCESS


Event Mgt Section 3.1
Incident Occurs
Manage injured person
Preserve worksite
Classify Section 3.2
FGJV Project Management determine
1) Actual consequence
2) Potential consequence
Data entry (InControl) & reporting requirements
InControl and Alerts
Determine event actual / potential consequence
Complete HCE/HPH Safety Circle
Insignificant
Minor / Moderate
Major & / or Recordable Injury
Catastrophic
Notify Section 3.3
Notify FGJV Management Team within 24 hours
Notify FGJV Management Team within 30min Verbal
Notify FGJV Management Team (Immediate verbal)
Notify FGJV Management Team (Immediate verbal)
Enter all incidents into InControl & Acconex within 24 hours
Notify SHL within 24 hours
Notify SHL within 12 hours
Notify SHL & Regulator (Immediate verbal)
Notify SHL & Regulator (Immediate verbal)
Define Investigation Method & Sponsor
Investigate Section 3.4
Low <8
Minor / Moderate
Major / Recordable Injury
Catastrophic / Very High Risk Level 23 to 25
For all recordable injuries and HCEs incidents complete HSE Alert within 24 hours. For all HCE incidents TOR for investigation issued to CEO/ EVP
Construction Manager
Project Director
Project Director
Where Incident is HCE Business Divisions EVP Investigation Team Leader to be independent of Project
Taproot
CEO Investigation Team Leader to be independent of Business Division
Taproot
Report Section 3.5
Complete Investigation and submit report to Sponsor for review / approval
Enter incident investigation / IRP findings, evidence and actions into InControl & Acconex
Conduct further investigation
NO
Was investigation approved?
YES
Review Section 3.6
Hold Incident Review Panel
(not HCE Project or BU process, HCE events require IRP)
1) Verify classification
2) Identify lessons learned
3) Assign improvement actions
All HPI's and where deemed appropriate by HSSE Functional Team HCE's shall be presented to EXCOM for Review using the Incident Review Presentation Template.
Lesson Learned Section 3.7
Communicate Lessons Learned
Complete HSE Lessons Learned Bulletin and issue post legal review.
Close out actions in InControl

Future Generation	Definition	Description	Notification/Reporting process
Very High/ Catastrophic	Potential prosecution Guiding factors that will be considered when determining whether there has been 'significant' environmental harm include: • When there has been actual or potential harm to the health or safety of people or to the environment that is not trivial • Actions required to prevent, mitigate or make good the actual or potential environmental harm are likely to exceed $10,000	Actual High category incidents will be escalated to the Executive when they have the potential for: • Regulatory action (e.g. EPA/DPIE Penalty Infringement Notice) and/or • Reputational damage (e.g. media coverage) and/or • Significant environmental harm.	• Incident occurs -construction team make safe and immediately notify supervisor and HSSE Team. • Future Generation HSSE Manager/Environment Manager notify Future Generation project team, Snowy Hydro immediately • Snowy Hydro to notify DPIE/EPA immediately (DPIE on compliance email and EPA on pollution line 131 555) • Future Generation project Director/HSSE Manager Notify Clough Business Division Team within 2 hours • Future Generation HSSE project team enters incident report into InControl within 24 hours • Future Generation HSSE team notifies the Snowy Hydro via Aconex with incident report within 24 hours. • Snowy Hydro to provide EPA/DPIE report written report within 7 days of non-compliance within 7 days
Major	Potential breaches of legislation or failures of process that result in actual off-site environmental harm, or residual on-site environmental harm or Works undertaken outside approved areas, without required approval or without environmental assessment or Any Material Harm pollution incident as defined by Part 5.7 of the *Protection of the Environment Operations Act 1997* (POEO Act).	***Pollution Incidents*** • Discharge of waters from site not in accordance with any approval requirements safeguard or Environment Protection Licence (EPL) condition) • Pollution, or potential pollution, of waters • Unmanaged vehicle tracking of materials or emissions of dust, offensive odours or noise beyond the site boundary that are not managed in accordance with approval requirements and/or might impact on nearby land users • Pollution incidents that threaten harm to the health or safety of people (e.g. uncontrolled releases of hazardous substances)	• Incident occurs -construction team make safe and immediately notify supervisor and HSSE Team. • Future Generation HSSE Manager/Environment Manager notify Future Generation project team, Snowy Hydro immediately • Snowy Hydro to notify DPIE/EPA immediately (DPIE on compliance email and EPA on pollution line 131 555) • Future Generation project Director/HSSE Manager Notify Clough Business Division Team within 4 hours • Future Generation HSSE project team enters incident report into InControl within 24 hours

		• Unauthorised or illegal disposal or transport of waste • A spill or other incident that causes pollution to land ***Conservation Breaches*** • Unauthorised harm or damage to native flora and fauna (terrestrial or aquatic/marine) • Unauthorised dredging or reclamation works within a watercourse ***Heritage Breaches*** • Unauthorised harm to Aboriginal objects, Aboriginal places • Unauthorised damage to any State or locally significant relic or Heritage item, ***Planning and Compliance Breaches*** Failure to comply with the requirements of: • The *Environmental Planning and Assessment Act 1997* (EP&A Act), including Conditions of Approval • An *Environment Protection and Biodiversity Conservation Act 1999* (EPBC Act) approval • An EPL • A CEMP or environmental work method statement • A permit from a regulator	• Future Generation HSSE team notifies the Snowy Hydro via Aconex with incident report within 24 hours. • Snowy Hydro to provide EPA/DPIE report written report within 7 days of non-compliance within 7 days
Minor/ Moderate	Failures of process or events that do not result in off-site environmental harm, or residual on-site environmental harm. These incidents may result in temporary on-site environmental harm that can be rectified to pre-existing conditions.	A procedural, administrative or technical breach of environmental requirements, including: • Failure to prepare or submit required documents, reports or other correspondence • Failure to comply with the requirements of: • The *Environmental Planning and Assessment Act 1997* (EP&A Act), conditions of approvals • An *Environment Protection and Biodiversity Conservation Act 1999* (EPBC Act) approval • An EPL	• Incident occurs -construction team make safe and immediately notify supervisor and HSSE Team. • Future Generation HSSE Manager/Environment Manager notify Future Generation project team, and Snowy Hydro • Snowy Hydro to notify DPIE/EPA (if required) • Future Generation project Director/HSSE Manager Notify Clough Business Division Team within 12 hours

		• A CEMP or environmental work method statement • A permit from a regulator	• Future Generation HSSE project team enters incident report into InControl within 24 hours • Future Generation HSSE team notifies the Snowy Hydro via Aconex with incident report within 24 hours. • Snowy Hydro to provide EPA/DPIE report written report within 7 days of non-compliance within 7 days (if required)
Low/ Insignificant	Failures of process or events that do not result in off-site environmental harm, or residual on-site environmental harm. These incidents may result in temporary on-site environmental harm that can be rectified to pre-existing conditions.	• Spills and discharges that do not leave a site boundary and are cleaned up without residual on-site environmental harm, and the area of temporary impact can be restored to pre-existing conditions • Procedural, administrative or technical breach of environmental requirements, including: - Failure to prepare or submit required documents, reports or other correspondence - Failure to comply with the requirements of: o Environmental work method statement o An internal permit	• Incident occurs -construction team make safe and immediately notify supervisor and HSSE Team. • Future Generation HSSE Manager/Environment Manager notify Future Generation project team, and Snowy Hydro within 24 hours • Future Generation HSSE project team enters incident report into InControl within 24 hours • Future Generation HSSE team notifies Snowy Hydro via Aconex with incident report within 24 hours.

APPENDIX A5 – UNEXPECTED HERITAGE FINDS PROCEDURE

UNEXPECTED HERITAGE FINDS PROCEDURE

In the event that unexpected objects or values are encountered during construction, the following steps should be followed:

1. All construction that could potentially harm objects or values must cease. Only construction that is required to comply with occupational and environmental health and safety standards and/or to protect the cultural heritage should occur;
2. The person who identified the objects or values must immediately notify the person in charge of the activity. The Project Superintendent or Supervisor and the Future Generation Environmental Manager is to be notified;
3. The item is to be protected by the establishment of a no-go zone;
4. The Future Generation Environmental Manager is to notify Snowy Hydro;
5. If the item is likely to be a human bone, follow the ancestral human remains process below and notify the Police;
6. Works may continue outside of the minimum 20 m barrier;
7. A suitably qualified archaeologist is to be notified;
8. The archaeologist is to attend site where required and conduct a preliminary assessment and recording of the item. The location and context of the object or value is to be recorded;
9. Where the item is not heritage, works can resume with the Environmental Manager's approval;
10. If artefacts are Aboriginal, the Registered Aboriginal Parties (RAPs) are to be notified, with a representative (of the RAP or Local Aboriginal Lands Council) invited to attend site;
11. Where the item is an object, the discovery must be reported to NSW OEH as soon as practicable;
12. Where the item is confirmed as a heritage item, the scientific significance of the objects or values will be assessed;
13. Within 60 days of being notified, complete and submit relevant recording forms to NSW OEH.
14. For confirmed heritage items or objects, work may commence within the area of exclusion when:
    a. the appropriate protective measures have been undertaken;
    b. where the relevant cultural heritage records have been updated and/or completed; and
    c. there is no other prudent or feasible course of action.

Ancestral human remains

Any human skeletal remains uncovered during project activities will be removed in a sensitive and dignified manner. Approval from NSW Health, under the Public Health Act 1991 (NSW), will be required prior to removing/exhuming any skeletal remains. Controlled excavation and removal by the site archaeologists and other appropriate specialists (forensic anthropologist, registered Aboriginal parties, NSW Police Force, as appropriate) will be undertaken in accordance with relevant guidelines and any requirements of DPC, DPIE and NSW Health.

Should suspected ancestral human remains be encountered, the following process will be adhered to:

1. Do not further disturb or move the remains.
2. Immediately cease work in the vicinity and cordon area off (with buffer of 2m).
3. Notify the NSW Police.
4. Notify a suitably qualified archaeologist and the NSW OEH Environment Line on 131 555 as soon as practicable and provide available details of the remains and their location.

5. In the event that the bones are not human, works may recommence.
6. If the bones are human and are archaeological in nature (i.e. likely to be Aboriginal remains), the relevant Aboriginal communities must be notified.
7. If the bones are required to be subject to Police investigation, then direction from the Police shall be followed.

If the bones are considered to have historic heritage value, an Archaeological Management Plan will be prepared.

APPENDIX A6 – UNEXPECTED FINDS PROCEDURE – CONTAMINATED LAND

UNEXPECTED CONTAMINATION FINDS PROCEDURE

A procedure of the S2-FGJV-ENV-PLN-0065 – Environmental Management Strategy

Future Generation
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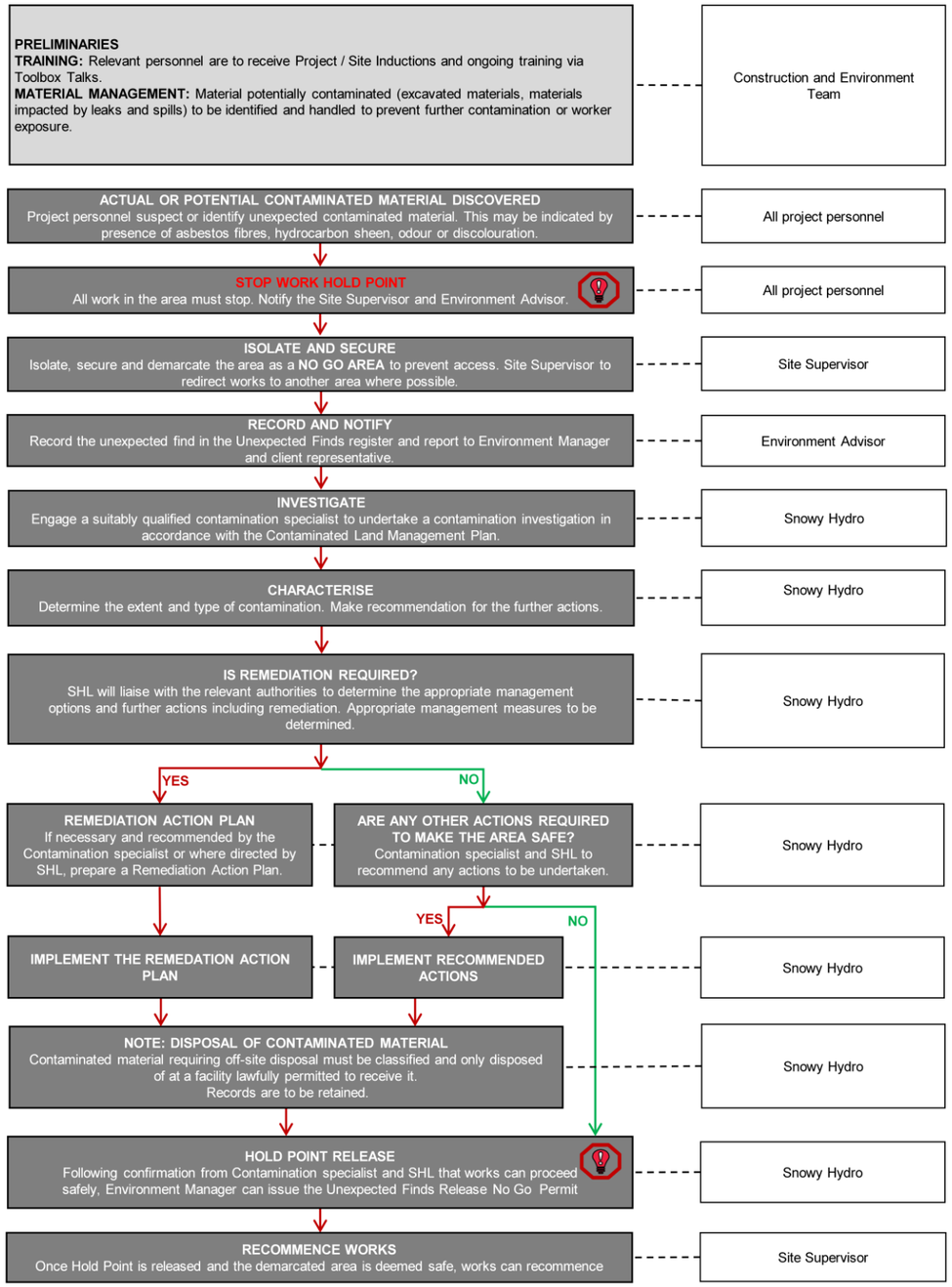
MANAGEMENT AND RESPONSIBILITY



REQUIREMENTS

Context

This Unexpected Finds Procedure (UFP) applies to the discovery of unexpected contaminated material during the course of the construction of the Polo Flat Segment Factory

Discovery

In the case of discovery of any unexpected contaminated material, further disturbance will be prevented through the following measures.

- stop all work in the immediate area;
- notify the Contractors Supervisor and the Contractor's Environmental Representative;
- do not recommence work until advised to do so by the Environment Manager or their delegate via completion of Unexpected Finds Release No Go Permit; and
- isolate the area from the rest of the works where practicable.

Inspection and Investigation

Future Generation Environmental Manager or delegate will notify Snowy Hydro of the find. Snowy Hydro will engage a suitably qualified contamination specialist to undertake a contamination investigation in accordance with the Contaminated Land Management Plan.

Snowy Hydro will undertake the necessary investigation and testing to determine the extent and type of contamination including making recommendation for the further actions and remediation required.

If necessary, liaise with the relevant authorities will occur to determine the appropriate management options and further actions including remediation. Snowy Hydro will determine the appropriate management measures to be implemented. This may include leaving contamination undisturbed, capping of contamination, treatment or offsite disposal.

Snowy Hydro will ensure that contaminated material requiring off-site disposal will be classified in accordance with the Waste Classification Guidelines – Part 1: Classification of Waste, NSW EPA 2014. If the material is to be disposed of offsite, the waste facility is to be appropriately licensed.

Remediation Action Plan

If necessary and recommended by the contaminated land specialist directed by Snowy Hydro, a Remediation Action Plan will be prepared in accordance with the EPA guidelines on contaminated land management.

APPENDIX B – MANAGEMENT PLANS

Appendix B1 – Traffic Management Plan

Appendix B2 – Noise Monitoring and Management Plan

Appendix B3 – Flood Emergency Response Plan