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Hepburn Community Wind Farm Environmental Management Plan

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Prepared by
Hydro-Electric Corporation
ARBN: 072 377 158
ABN: 48 072 377 158
t/a **Hydro Tasmania Consulting**
89 Cambridge Park Drive, Cambridge
Tasmania, Australia






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Title	Hepburn Community Wind Farm
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Client organisation	REpower Australia Pty Ltd Systems AG
Client contact	Emilio Urruchi
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Project manager	David Procter
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1. Introduction

The Hepburn Community Wind Farm is being developed by Leonards Hill Wind Operations Pty Ltd on behalf of Hepburn Wind. The wind farm site is located at Leonards Hill, approximately ten kilometres south of Daylesford in Victoria. The wind farm consists of two 2,05 MW wind turbines and will be the first community owned and operated wind farm in Australia.

A detailed description of the Hepburn Community Wind Farm and environmental assessments that have been completed is contained in Hepburn Community Wind Farm – Application for Planning Permit (HREA, 2006).

This Environmental Management Plan (EMP) outlines the management and monitoring requirements to be implemented by Leonards Hill Wind Operations Pty Ltd, its employees, and nominated Engineer, Procure and Construct (EPC) contractor REpower Systems AG.

1.1 Environmental Assessment and Approval

The Hepburn Community Wind Farm has been subject to a rigorous assessment process. Hepburn Wind has completed a number of key studies including:

- Fauna Assessment
- Noise Assessment
- Landscape and Visual Assessment Study
- Archaeological Assessment

The results of these studies have been used to ensure the design and location of the wind farm and associated infrastructure is optimised to minimise environmental impacts. The turbines and infrastructure will be located on land used for grazing and it is anticipated that this activity will be able to continue once the wind farm construction is completed. Noise impacts on surrounding residences were assessed and found to be compliant with prescribed standards.

The project received development approval from the Victorian Civil and Administrative Tribunal in July 2007, subject to compliance to conditions issued in Permit 2006/0321.

This EMP has been developed in response to Permit Condition 7. Table 1-1 summarises Condition 7 and indicates which section of this EMP has addressed the requirement.

Table 1-1
Planning Permit Conditions

No.	Permit Condition	How addressed
7	Before the development starts, an Environmental Management Plan must be prepared to the satisfaction of the Responsible Authority. When approved, the plan will be endorsed by the Responsible Authority. The Environmental Management Plan must include (but is not limited to):	This document
7a	<p>A construction and work site management plan. This Plan must include:</p> <ul style="list-style-type: none"> • Procedures for access, noise and pollution management. • The identification of all potential contaminants, hazardous chemicals, liquids and similar materials to be stored on site. • The identification of all construction and operational processes that could potentially lead to water contamination. • The identification of appropriate storage, construction and operational and spill control methods to control any identified contamination risks including any arising from the identification processes in Conditions 7(a)(ii) and (iii). • Criteria for the siting of any temporary concrete batching plant associated and procedures for its removal and reinstatement of the site once its use finishes. The establishment and operation of any temporary concrete batching plant must be in accordance with the Environment Protection Authority's Environmental Guidelines for the Concrete Batching Industry, Publication No. 628. • The identification of waste re-use recycling and disposal procedures. • Procedures for the storage of any fuels, lubricants or waste oil to be stored in bunded areas and procedures for managing any spills. • The removal of works buildings and staging area • on completion of construction of the project and for the return of the site to its former condition. 	Section 5 and Section 6
7b	A wildfire prevention and response plan.	Section 4
7c	<p>A sediment and erosion management plan. This plan must include:</p> <ul style="list-style-type: none"> • Procedures to ensure that silt from batters, cut-off drains, table drains and road works is retained on the work site during and after the construction stage of the project. All land disturbances must be confined to a minimum practical working area and to the vicinity of the identified work areas. Soil to be removed must be stockpiled and separate soil horizons must be retained in separate stockpiles and not mixed. Stockpiles must be located away from drainage line • All track construction and maintenance equipment, earth moving equipment and associated machinery, must be made free of soil, seed and plant material before being taken to the works site and again before being removed from the works site on completion of the development. • All road-making and maintenance material such as rock, gravel and sand required for the project must come from an area free of 	Section 3 and Section 5

No.	Permit Condition	How addressed
	<p>weeds.</p> <ul style="list-style-type: none"> • The installation of geotextile silt fences (with sedimentation basins where appropriate) on all drainage lines from the site which are likely to receive run-off from disturbed areas. • Procedures to contain any contaminated or turbid run-off during and after construction of the wind energy facility. • Procedures to suppress dust arising from construction-related activities. Appropriate measures may include water sprays of roads and stockpiles, stabilising surfaces, temporary screening and/or wind fences, modifying construction activities during periods of heightened winds and revegetating exposed areas as soon as practicable. • Procedures to ensure that steep batters are treated in accordance with Environmental Protection Authority recommendations detailed in the 'Construction Techniques for Sediment Pollution Control' No 275, May 1991. • Procedures for waste water and discharge management to prevent adverse off-site impacts. 	

1.2 Objectives and Scope

The objectives of this EMP are to:

- Detail measures to mitigate any potential impacts on the surrounding environment associated with the construction of the Hepburn Community Wind Farm
- Provide a framework for the construction works to be implemented in accordance with conditions issued in Permit 2006/0321

2. Project Description

The Hepburn Community Wind Farm will consist of two turbines located on the exposed plateau of Leonards Hill. A 22 kV underground cable will link the turbines to the local electricity network via an onsite switchyard and the existing 22 kV overhead power line. The key project components are shown in Figure A-1 in Appendix A of this EMP and described below.

2.1 Wind farm components

2.1.1 Wind Turbines

The project will use the REpower MM82 2,05 MW wind turbine. The turbines have a rotor diameter of 82 m (40 m blade length) and will be installed on 66.15 m steel tube towers. The turbines are designed with rated wind speed of 14.5 m/s and cut in and cut out speeds of 3.5 m/s and 25 m/s respectively. Turbines will be linked to REpower's standard Supervisory Control and Data Acquisition (SCADA) system. The system controls all the functions of the turbine (including blade tip angle, direction, stop/start and electricity generation) and records operating data, energy production and environmental conditions.

A step up transformer will be located adjacent to each turbine to transform electrical output from the turbines to 22 kV.

2.1.2 Hard Stand Areas

Hard Stand areas will be located adjacent to the turbine foundations and will be approximately 25 m x 45 m. Hard Stand areas will be used as a base for cranes required to assemble, service or replace (if required) and decommission the turbines. The Hard Stand areas will be remediated to a state agreed with the Landowner.

2.1.3 Access Roads

An access road will be constructed from the site access on Ballan-Daylesford Road to the turbines as shown in Figure A-1. One tree may need to be pruned or removed to construct the access road. The access roads will be approximately 5.5 m wide with 0.5 m shoulders and be constructed with locally sourced materials. The access road will be used for both construction of the wind farm and to provide access to the turbines for routine maintenance.

2.1.4 Cabling

The turbines will be connected to an onsite switchyard by an underground 22 kV cable. The underground cable will follow the same route as the access road.

2.1.5 Switchyard

The switchyard will consist of a reactive power plant, 22 kV switch room housing 22 kV switchgear, a control booth and an auxiliary power supply. The switchyard will be fenced and will cover an area of approximately 15m x 15m.

2.1.6 Wind Monitoring Mast

There will be no wind monitoring mast on site.

2.2 Construction Activities

2.2.1 Site office

A temporary site office will be established close to the access point on Ballan-Daylesford Road on an existing concrete pad. The temporary site office will be comprised of about 5-6 demountable buildings that will be used for offices, kitchen/mess room, First Aid room and toilets. Temporary amenities will be provided in accordance with Victorian WorkCover Authority Code of Practice No 13 – *Building and Construction Workplaces*. The site will be fenced. All components of the temporary site office will be removed at the completion of construction.

2.2.2 Access Roads and Hard Stand Areas

Construction of the access roads and Hard Stand areas will commence once the site office is established. Construction of the access roads will involve stripping of topsoil, and placement and compaction of suitable crushed-rock sub base and wearing course. Drainage measures will be included in the design of the access roads to prevent erosion as described in Section 3 Sediment and Erosion Control.

2.2.3 Turbine Foundations

Each turbine will require the installation of a steel-reinforced concrete foundation. The final design of the foundations will depend on the results of the detailed geotechnical investigation however, preliminary investigations have shown that mass pad footings are likely to be most suitable. A typical mass pad footing would require the excavation of an area of approximately 12-15 m in diameter and 2.5 m deep. Excavated materials will be stockpiled adjacent to the excavation site, with the top soil

stored separately from the subsoil. Foundations will be covered by approximately 0.5m of backfill and topsoil.

2.2.4 Erection of turbines

Both turbines will be transported to site as individual components. The components for each turbine will consist of three tower sections (upper, middle, lower), three blades and the nacelle. Each turbine component will be required to be transported using oversize (over-dimension) vehicles. Hard Stand areas adjacent to each turbine will be used for storage and assembly of the components. The turbines will be assembled and erected using two cranes. The turbines will be constructed in three stages as follows:

- **Tower:** The lowest tower section is bolted to the foundation. Upper sections are progressively bolted on
- **Nacelle:** The nacelle is lifted by crane and attached to tower
- **Rotor/blades:** The three blades and hub are assembled at ground level, lifted as a single unit and attached to the main shaft which protrudes from the nacelle or each blade is lifted and attached to the hub separately

2.2.5 Cabling

Underground cabling will be installed in trenches approximately 300 mm wide and 900 mm deep. The cable will be laid on a base layer of sand which will be topped by a further layer of sand and backfilled to surface level. The cable route will be revegetated to prevent erosion and erosion control measures as outlined in Section 3 will be implemented to revegetation works.

2.2.6 Site restoration

Rehabilitation of construction areas will be undertaken progressively to minimise exposed areas. At the completion of construction the temporary site office, waste and surplus materials will be removed. Any exposed areas will be revegetated to prevent erosion and erosion control measures as outlined in Section 3 will be implemented to revegetation works.

2.2.7 Working hours

Working hours are expected to be from 7.00am to 6.00pm Monday to Friday and 7.00am to 1.00pm on Saturdays.

2.2.8 Construction program

Construction is expected to commence in September-October 2010. A preliminary construction program is outlined in Table 2-1.

Table 2-1 Preliminary Construction Program

Construction phase	Month								
	1	2	3	4	5	6	7	8	9
Site establishment	■								
Access Roads and Hard Stands		■							
Turbine foundations			■	■					
Turbine installation					■	■	■		
Electrical (inc SCADA)						■	■	■	
Commissioning and operation								■	■

2.2.9 Operation and maintenance

Once commissioned, the wind turbines will operate continually, except during periods when wind conditions are outside of the operating regime of the turbine or during regular maintenance periods. Automatic control systems allow the turbines to operate unattended. The wind farm will be remotely monitored 24 hours a day 7 days a week by REpower.

2.2.10 Decommissioning

The leasing agreements with the landowners provide Hepburn Wind with 25 year tenure to operate a wind farm on the site. A decision will be made at the end of the initial operating period on whether to replace the existing turbines or to decommission the wind farm and return the site to its original condition.

If the site were to be decommissioned, the tower foundations would be demolished and top soil and pasture reinstated. The Hard Stand areas would then be rehabilitated. The access roads would be removed unless the landowner requests otherwise. All above-ground infrastructure would be removed and reused (if appropriate), recycled or removed for disposal. A site contamination assessment of the switchyard would be performed and any contaminated material would be moved to an appropriate disposal facility.

3. Sediment and Erosion Control Management Plan

3.1 Introduction

Construction of the wind farm has the potential to cause erosion, loss of soil and sedimentation of water courses through:

- Sediment laden runoff or dust from exposed or stockpiled soils resulting from earthworks for turbine foundations, laydown areas, access roads, cable trenches and switchyard
- Runoff from unsealed access roads or Hard Stand Areas
- Altering the drainage characteristics of the site by the construction of access roads, Hard Stand areas and underground cabling trenches
- Migration of dust from access roads, stockpiles and exposed areas
- Inappropriate disposal of sewerage or waste waters from site amenities

The site is protected by an Environmental Significance Overlay (ESO – 1) Proclaimed Catchment Protection under the Hepburn Shire Planning Scheme. There are no public water supply points however, there are several private dams located close to the site. The site is not close to any recorded significant wetlands. There are no defined streams or rivers on or close to the site. It is likely that surface water drains from the site via poorly defined drainage lines to private dams.

3.2 Objectives

The objectives of this Sediment and Erosion Control Management Plan are to:

- Prevent erosion, the loss of soil and sedimentation of drainage lines by appropriately managing planned works
- Maintain or improve the quality of surface water during construction

3.3 Key Guidance

- [Environmental Protection Authority Victoria Publication 275 – Construction Techniques for Sediment Pollution Control](#)
- [EPA Victoria Publication 891.2 – Code of Practice – Onsite Waste Water Management](#)

- [State Environment Protection Policy \(Waters of Victoria\), EPA Victoria, revised 2004.](#)
- [Building and Construction Workplaces – Code of Practice No. 13, Worksafe Victoria, 1990.](#)

3.4 Performance Criteria

- No discharge of sediment laden water from site
- No significant erosion on site
- Correct design and function of erosion and sedimentation control measures

3.5 Contingencies

If erosion and sediment controls are found to be insufficient the following measures will be implemented:

- The ineffective control will be modified or replaced
- The construction method will be reviewed and modified if necessary

3.6 Control Measures

Table 3-1 Sediment and Erosion Control

Audit Ref	Control Measure
General	
SE 1	Site access roads and lay-down areas will incorporate existing tracks where ever possible to minimise disturbance of the site.
SE 2	All land disturbances will be confined to the minimum practicable working area to ensure that the minimum land area is exposed to erosion for the shortest possible time.
SE 3	All vehicles will use only designated access roads and movement of vehicles on and off site will be through approved access points only.
SE 4	Existing drainage lines will be protected and diversion of drainage lines avoided wherever practicable.
SE 5	Surface water will be diverted around the construction footprint using structures such as catch drains, silt fences or bunds. Surface water will not be diverted across erosion prone slopes.
SE 6	Sediment controls shall be installed in accordance with the relevant guidelines and standards for such controls e.g. EPA Victoria Publication 275 – Construction Techniques for Sediment Pollution Control
SE 7	Erosion control works and measures will be installed to control surface water runoff and prevent the export of sediments from the site by ensuring;

	<ul style="list-style-type: none"> Discharge of stormwater is to stable preferably vegetated land Erosion control measures closely follow land contours to reduce runoff velocity from exposed soils
SE 8	Silt fences will be constructed across all drainage lines and erosion control from site that are likely to receive runoff from exposed or disturbed soils. Sediment basis will be installed where required.
SE 9	Tower foundations will be designed to ensure there is no impact on groundwater.
Cable Trenches	
SE 10	Trenches will remain open for the shortest duration possible and prevailing weather conditions taken into consideration.
SE 11	Excavated spoil will be stockpiled on the uphill side of the exposed trench and silt fences installed where necessary.
SE 12	Where cable trenches will be open for a significant length of time trench plugs may be used if appropriate.
Soil Stockpiles	
SE 13	All soil stockpiles will be located at least 30m from drainage lines.
SE 14	Soil will be stockpiled to maintain separate soil horizons.
SE 15	Stockpiles will be designed with slopes no greater than 2:1.
SE 16	Steep Batters will be treated in accordance with EPA Victoria Publication 275 – Construction Techniques for Sediment Pollution Control
SE 17	Stockpiles will be stabilised and control measures implemented including watering to suppress dust.
SE 18	If required, sediment controls will be installed around unstable stockpiles.
Access Roads	
SE 19	Access roads and Hard Stand areas will be designed to minimise erosion both during and after construction by: <ul style="list-style-type: none"> Constructing roads using compacted crushed rock Providing regular gutters along the main access road that runs up the face of the hill Implementing a regular maintenance program for access roads and Hard Stand areas
SE 20	Access roads will be designed to avoid the generation of mud.
Dust	
SE 21	Dust suppression measures will be implemented as required and may include: <ul style="list-style-type: none"> wetting access roads and or Hard Stand areas revegetating exposed areas as soon as practicable
Rehabilitation	
SE 22	Rehabilitation of disturbed areas will be completed progressively to ensure disturbed land is exposed for the shortest possible time.
SE 23	Rehabilitation will include at a minimum reinstatement of soil and pasture and surface levelling.
Site Hygiene	
SE 24	All earth moving and track construction equipment shall be thoroughly cleaned prior to entering or leaving the site.
SE 25	All materials (sand, aggregate etc) imported on to site must be sourced from weed and

	pathogen free sites.
Maintenance	
SE 26	All drains will be regularly cleaned to remove silt and other debris and replaced immediately if damaged.
SE 27	Access roads and Hard Stand areas will be maintained for the duration of the project to prevent erosion.
Sewerage and waste water management	
SE 28	Appropriate sanitary facilities will be provided for construction personnel in accordance with Building and Construction Workplaces – Code of Practice No. 13, Worksafe Victoria, 1990.
SE 29	Sanitary facilities will be self contained and serviced in accordance with the supplier's information and instruction.
Monitoring	
SE 30	Sediment and erosion control measures will be inspected daily and after a significant rainfall event by the Site Manager.
SE 31	All personnel will report damaged or ineffective sediment control measures or potential water contamination to the Site Manager immediately
SE 32	Monitoring for erosion and sedimentation will be undertaken at 6 months and 12 months after the completion of construction.
SE 33	This plan shall be audited at the commencement of works and at regular intervals throughout construction works.

4. Wildfire Prevention and Response Plan

4.1 Introduction

Wildfires have the potential to significantly impact the community of Leonards Hill through the loss of property and livestock and the endangerment of resident's lives. The wind farm has been sited in a cleared paddock in part, to reduce the risk of wildfire. The nearest vegetated area is located more than 250m from the closest turbine.

4.2 Objectives

The objectives of the Wildfire Prevention and Response Plan (WPRP) are to:

- Prevent the occurrence of a wildfire at the Hepburn Community Wind Farm Site
- In the event of a fire, ensure the safety of personnel on site and residents and minimise damage to property

4.3 Key Guidance

- [Emergency Management Guidelines for Wind Farms, CFA, 2007.](#)
- Australian Standard 1851 – *Portable Fire Extinguishers*, 1997

4.4 Performance Criteria

- Extent of fuel in the designated areas
- Presence of spark arrestors and plant and machinery
- Number of fires that occur on site

4.5 Contingencies

In the event of a fire on site the following measures will be implemented:

- Dial 000 immediately
- All reasonable attempts will be made by onsite personnel to extinguish the fire without compromising personnel safety
- All onsite equipment will be made available as requested by the CFA

4.6 Control Measures

Table 4-1 Wildfire Prevention and Response

Audit Ref	Control Measure
During a declared 'Fire Danger Period' the following measures will be implemented:	
WF 1	For a distance of 30m from both turbines and in all areas where plant and heavy equipment will be working grass will be maintained below 100mm high and leaf litter below 10mm deep.
WF 2	A fuel reduced area of 4m will be maintained around the switchyard.
WF 3	All plant and heavy equipment will at a minimum carry at least one nine litre water stored pressure fire extinguisher to a minimum rating of 3A.
In addition the following basic measures will be implemented at all times:	
WF 4	Access roads will be constructed in accordance with guidance provided in Emergency Management Guidelines for Wind Farms, CFA, 2007 , and be a minimum of four meters wide with appropriate vertical clearance and suitability for all weather access by CFA vehicles.
WF 5	No fires will be lit on site for any purpose at any time.
WF 6	No hot work will be conducted on Extreme Fire Days and Code Red (Catastrophic) days.
WF 7	All hot work will be conducted using a permit systems and will be undertaken in a manor that minimises the risk of fire.
WF 8	Spark arresters will be installed and maintained on all plant and equipment.
WF 9	The induction procedure for employees and contractors working on site will include site specific fire response procedures.
WF 10	All vehicles will be equipped with suitable fire extinguishers compliant with AS1851.
WF 11	The CFA will be provided with: <ul style="list-style-type: none"> • A construction works schedule • Maps showing access roads and locations of access gates • Security information such as the location of locked gates and restricted access areas
WF 12	The CFA will be briefed on planned fire response measures and invited to inspect the site prior to construction.
WF 13	Prior to the commencement of construction advice will be sought from the CFA regarding access to and the location of water access points on the site.
Monitoring	
WF 14	The extent of fuel (grass height and leaf litter depth) will be monitored weekly during 'Fire Danger Periods' and monthly at all other times.
WF 15	This plan shall be audited at the commencement of works and at regular intervals throughout construction works.

5. Hydrocarbon and Hazardous Materials Plan

5.1 Introduction

The construction of the Hepburn Community Wind Farm has the potential to contaminate the aquatic environment through the inappropriate transport, handling, storage and disposal of hazardous materials and hydrocarbons.

The Hydrocarbon and Hazardous Materials Management Plan (HHMP) describes the management measures for the storage, use and disposal of hydrocarbons and hazardous substances.

5.2 Objectives

The objectives of the HHMP are to:

- Minimise the potential for hydrocarbon or chemical spills and ensure the availability of appropriate hydrocarbon spill kits
- Prevent the contamination of surrounding waters through the mismanagement of hazardous materials.

5.3 Key Guidance

- [EPA Victoria Publication 347 – Bunding Guidelines](#)
- AS1940:2004 – *The storage and handling of Flammable and Combustible materials*
- AS1216:2006 – *Class labels for dangerous goods*
- [Hazardous Substances Information System – List of Designated Hazardous Substances](#)
- [Dangerous Goods Storage and Handling – Code of Practice No. 27, Worksafe Victoria, 2000.](#)
- [Hazardous Substances – Code of Practice No. 24, Worksafe Victoria, 2000.](#)

5.4 Performance Criteria

- No spillage of hydrocarbons or hazardous substances beyond containment areas
- No discharge of hydrocarbons or hazardous substances to land or waterways

- Minimal storage of hydrocarbons and hazardous substances on worksites

5.5 Contingencies

In the event of a spill of hydrocarbons or hazardous materials the following measures will be implemented:

- The cause of the spill shall be immediately stopped
- Clean up measures including the deployment of spill kits and any MSDS requirements will be instigated immediately
- If required, EPA Victoria will be informed
- Any wastes arising from a spill, including contaminated soil, will be disposed of in an appropriate manner.

5.6 Control Measures

Table 5-1 Hydrocarbon and Hazardous Materials

Audit Ref	Control Measure
HH 1	Storage areas for hazardous substances shall be bunded in accordance with EPA Victoria Publication 347 – Bunding Guidelines and Australian Standard AS1940.
HH 2	Hydrocarbon and hazardous substance storage areas shall be clearly identified with the appropriate signage and labels, in accordance with AS 1216:2006. All hydrocarbon and hazardous substances stored and used shall have a current Material Safety Data Sheet (MSDS) and be readily accessible.
HH 3	Appropriate spill kits shall be kept on site. The location of spill containment materials will be included in the site induction. Training for spill clean up will be provided to nominated persons.
HH 4	All plant and equipment shall undergo maintenance in accordance with their individual service requirements. Equipment leaks shall be addressed immediately.
HH 5	Where practicable, all plant and mobile equipment will be parked in designated Hard Stand areas when not being used in construction activities.
HH 6	Oil and grease spills shall be cleaned immediately in accordance with EPA and Local Government Authority requirements. Disposal of contaminated soil and clean up materials shall be to an approved waste disposal facility.
HH 7	Significant quantities of fuel will not be stored on site. Equipment and machinery that requires refuelling on site (e.g. cranes) will be refuelled by a dedicated refuelling vehicle. The refuelling vehicle will have adequate spill kits and containment devices readily available.
HH 8	Post construction, there may be small volumes of hazardous materials used in the maintenance of the wind turbines. All materials will be stored in accordance with Australian Standard AS1940.

Monitoring

HH 9	Documented inspections of all plant and equipment for fuel, oil or hydraulic leakage will be carried out at least weekly. Any leakages must be repaired before plant and equipment is permitted to be used.
HH 10	Regular documented inspections of chemical, oil and fuel stores shall be undertaken.
HH 11	This plan shall be audited at the commencement of works and at regular intervals throughout construction works.

6. Construction and Work Site Management Plan

6.1 Introduction

In addition to the specific plans contained within this Environmental Management Plan a Construction and Work Site Management Plan (CWSMP) has been prepared to ensure that the environmental impact of the construction of the Hepburn Community Wind Farm is minimised.

To ensure all requirements of condition 7a of the Planning Permit are addressed this CWSMP considers each requirement separately.

6.2 Objectives

The objectives of the Construction and Work Site Management Plan are to:

- Minimise the impact of construction of the Hepburn Community Wind Farm on the surrounding environment
- Reduce as far as practicable construction noise
- Minimise the generation of waste and to appropriately manage waste generated

6.3 Key Guidance

- [Noise Control Guidelines, EPA Publication 1254, 2008.](#)
- [EPA State Environmental Protection Policy \(Control of noise from commerce industry and trade\) No. N-1, 1989.](#)
- [Environmental Guidelines for Major Construction Sites, Best Practice Management Series, EPA Publication 480, 1995.](#)
- [Policy and Planning Guidelines for Development of Wind Energy Facilities in Victoria, Sustainable Energy Authority Victoria, 2002.](#)
- [Best Practice Guidelines for Implementation of Wind Energy Projects in Australia, AusWEA, 2006](#)

6.4 Performance Criteria

- Compliance with *Noise Control Guidelines*, EPA Publication 1254, 2008
- Appropriate segregation and disposal of wastes

6.5 Control Measures

6.5.1 Procedures for access, noise and pollution management

Access

Other than landowners, access to the site will be restricted to authorised personnel and construction contractors at all times. The site office and compound enclosure will be fenced and construction sites will be appropriately managed to prevent unauthorised access.

Traffic access to the site is described in the Traffic Management Plan prepared for the Hepburn Community Wind Farm.

Noise

Noise will be managed to comply with the *Noise Control Guidelines*, EPA Publication 1254, 2008. The following general noise mitigation measures will be implemented:

- Wherever possible working hours will be between 7am and 6pm Monday to Friday and 7am to 1pm on Saturdays. Where safety or technical reasons require work to be completed outside these hours' noise levels will be in compliance with [Noise Control Guidelines, EPA Publication 1254, 2008](#).
- Prior to the commencement of construction local residences will be informed of the planned construction schedule and be made aware of periods when works are expected to be noisy
- All mechanical plant will be silenced by the best available means
- As far as is practicable noisier works will be scheduled at times of least disturbance to landowners
- The site induction will include information on noise awareness

Pollution

Pollution will be managed through the implementation of the Sediment and Erosion Control Management Plan (Section 3) and Hydrocarbon and Hazardous Materials Plan (Section 5).

6.5.2 Identification of all potential contaminants on site

The following potential contaminants are considered likely to be stored on site during construction:

- Small quantities of liquid fuels will be stored on site. Larger quantities of fuel will be on site periodically when refuelling
- Lubricants and hydraulic oils –new and used
- Wash down waters
- Aggregates and cement
- Domestic waste (food wastes)

6.5.3 Identification of all construction and operational processes that could potentially lead to water contamination

Processes that could potentially lead to water contamination are identified in the Sediment and Erosion Control Management Plan (Section 3) and Hydrocarbon and Hazardous Materials Plan (Section 5).

Operational processes are confined to routine maintenance activities none of which are considered likely to potentially lead to water contamination.

6.5.4 Identification of appropriate storage, construction and operational methods to control any identified contamination risks

Methods to control potential contamination risks are described in the Sediment and Erosion Management Control Plan (Section 3) and Hydrocarbon and Hazardous Materials Plan (Section 5).

6.5.5 Criteria for siting of any temporary concrete batching plant

There will be no concrete batching plant established during the construction of the Hepburn Community Wind Farm.

6.5.6 Identification of waste re-use, recycling and disposal procedures

The construction of the Hepburn Community Wind Farm is not expected to generate a significant quantity of waste. Wherever possible the generation of waste will be avoided. Sources of waste include:

- Containers, packaging and wrapping materials
- Construction wastes including scrap timber, metal and concrete
- Topsoil, spoil and rock wastes from turbine foundation excavations

- Domestic waste and litter

The following measures will be implemented to manage the waste streams identified above:

- Recycling bins and skips will be available on site
- Wastes will be collected and disposed by licensed contractors
- Wastes will be collected progressively and not allowed to stockpile
- All relevant legislative requirements relating to prescribed and other wastes will be adhered to

6.5.7 Procedures for the storage of any fuels, lubricants or waste oil to be stored in bunded areas and procedures for managing any spills.

Procedures for the storage and managing spills of fuels lubricants or waste oils are contained in the Hydrocarbon and Hazardous Materials Plan (Section 5).

6.5.8 The removal of works buildings and staging area on completion of construction of the project and for the return of the site to its former condition.

All works buildings will be contained within the site office that will be established on an existing concrete slab. At the completion of construction all buildings and fencing will be removed and the site returned to its original condition.

Areas disturbed during construction will be rehabilitated as outlined in the Sediment and Erosion Control Management Plan (Section 3).

6.6 Summary of Control Measures

Table 6-1 Construction and Worksite Management

Audit Ref	Control Measure
Noise	
CW 1	Noise will be managed to comply with the Noise Control Guidelines, EPA Publication 1254, 2008.
CW 2	Wherever possible working hours will be between 7am and 6pm Monday to Friday and 7am to 1pm on Saturdays. Where safety or technical reasons require work to be completed outside these hours noise levels will be in compliance with Noise Control Guidelines, EPA Publication 1254, 2008.
CW 3	Prior to the commencement of construction local residences will be informed of the planned construction schedule and be made aware of periods when works are expected to be noisy.

CW 4	All mechanical plant will be silenced by the best available means.
CW 5	As far as is practicable noisier works will be scheduled at times of least disturbance to landowners.
CW 6	The site induction will include information on noise awareness.
Waste	
CW 7	Recycling bins and skips will be available on site.
CW 8	Wastes will be collected and disposed by licensed contractors.
CW 9	Wastes will be collected progressively and not allowed to stockpile.
CW 10	All relevant legislative requirements relating to prescribed and other wastes will be adhered to.
Monitoring	
CW 11	Waste management practices will be periodically audited.
CW 12	Waste documentation records will be checked and recorded.
CW 13	This plan shall be audited at the commencement of works and at regular intervals throughout construction works.

7. Complaints

A complaints procedure shall be established to receive and respond to complaints from the community and stakeholders associated with the construction of the wind farm. The following information about each complaint shall be recorded:

- Name of complainant (anonymous if preferred)
- Address/general location of complainant when complaint occurred
- Nature of complaint (e.g. noise, sediment release)
- Detailed description of complaint (e.g. noise characteristics)
- When complaint event occurred
- If ongoing, frequency and duration of events

All complaints shall be recorded and, where construction activities are considered likely to be the cause of the complaint, action shall be taken to rectify the cause and prevent the incident recurring.

The following information shall be recorded:

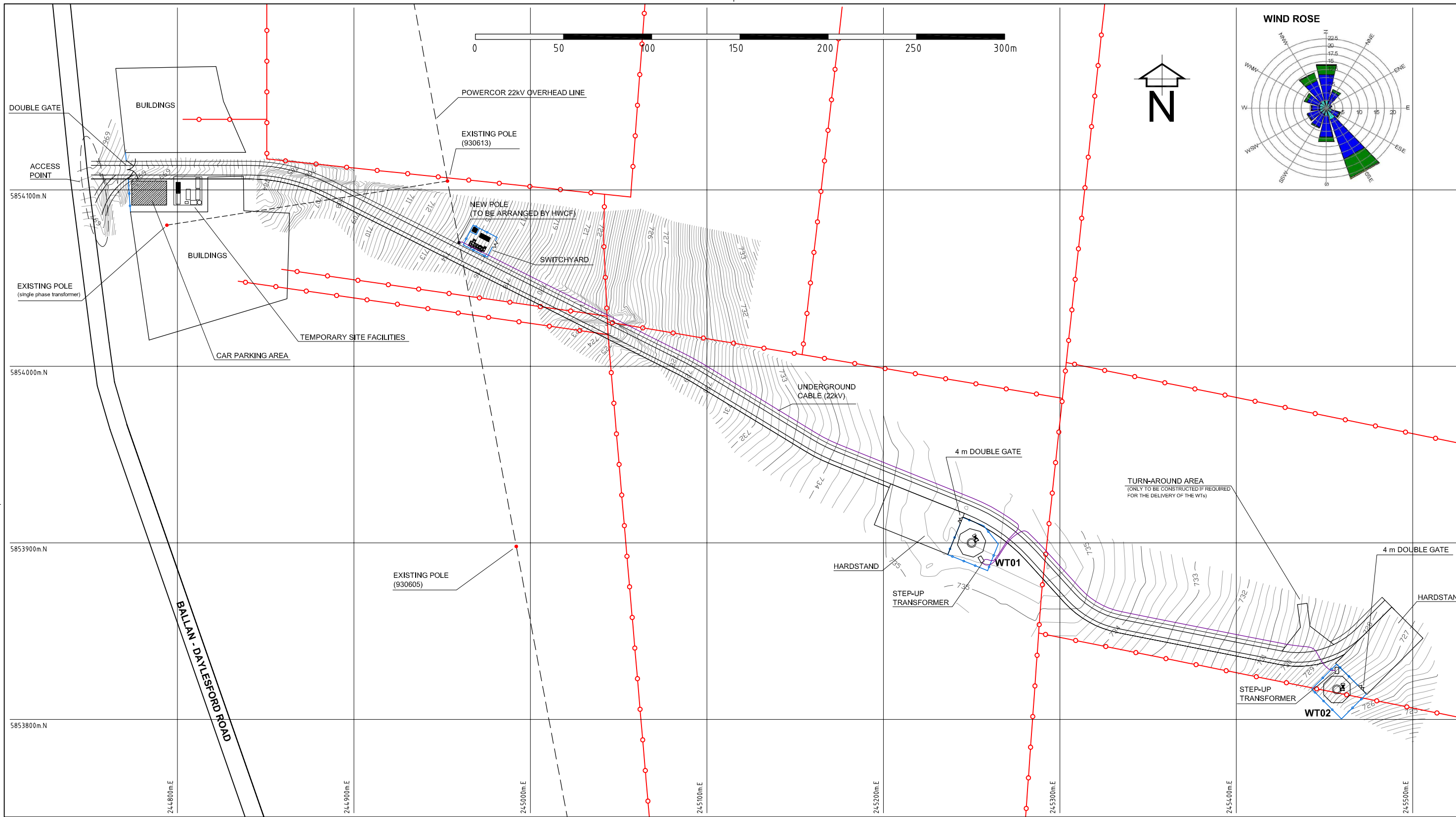
- Details of the activities undertaken at the time of the complaint (e.g. excavating foundations)
- Details of the nature of any abnormal activities or environmental conditions
- Results of on-site observations and investigations
- Results of on-site observations of wind speed, wind direction, cloud cover, any discharges evident
- Details of actions taken to alleviate or mitigate the identified causal factors of the complaint and actions to reduce the risk of recurring complaints
- Steps taken to notify complainant of the outcomes of any investigations

8. Auditing

An audit program will be established that includes at a minimum an audit of this plan at the commencement of construction and at least one follow up audit during construction.

Appendices

A Preliminary site plan



Coordinates WTs	
MGA 94 Zone 55	
WT01	245250, 5853900
WT02	245457, 5853817

LEGEND	
	EXISTING FENCELINE
	NEW FENCELINE
	UNDERGROUND CABLING

NOTE:
Any coordinates in this document are just for information purposes and will have to be checked by a certified surveyor before construction.

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	gezeichnet / drawn: 09-08-10 geprüft / checked: 09-08-10 freigegeben/released: 09-08-10		Name/name: E. URRUCHI Name/name: E. URRUCHI Name/name: E. URRUCHI	Name/name: E. URRUCHI Name/name: E. URRUCHI Name/name: E. URRUCHI	Angegebene Spezifikation ist zwingend zu beachten! Indicated Specification has to be strictly observed!	Version / revision: A-0 Blatt/Sheet: 1/1 DIN-Blatt/ANSI-Blatt: A3
	Stückzahl pro Anlage / No. of Pieces per Turbine: N/A SAP-No.: N/A EDP NO.: N/A		Schutzvermerk DIN ISO 16016 Protection Mark DIN ISO 16016 Pos.-Nr.: N/A	Name/name: E. URRUCHI Name/name: E. URRUCHI Name/name: E. URRUCHI	Angegebene Spezifikation ist zwingend zu beachten! Indicated Specification has to be strictly observed!	Version / revision: A-0 Blatt/Sheet: 1/1 DIN-Blatt/ANSI-Blatt: A3
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