ENVIRONMENTAL MANAGEMENT PLAN

Guidelines for

SOUTH AUSTRALIAN WINERIES

How to set goals for improved environmental performance and how to keep improving

AVOID • REDUCE • REUSE • RECYCLE

ACKNOWLEDGEMENTS

These *Environment Management Plan Guidelines for South Australian Wineries* have been developed by Green Industries SA.

Green Industries SA helps develop the green economy in response to the demand for clean and green produce, and the reduction of emissions to air, water and soil from industry. Green Industries SA promotes the more efficient use of resources, and the conservation and recovery of scarce resources.

Green Industries SA gratefully acknowledges the editorial advice and technical assistance provided by the South Australian Wine Industry Association for the preparation of these guidelines. These guidelines aim to assist the industry to move beyond compliance and to capitalise on the business opportunities associated with better environmental management.

GPO Box 1047
Adelaide SA 5001
Telephone: +61 8 8204 2051
www.greenindustries.sa.gov.au

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CONTENTS

Why create an Environmental Management Plan? 3

Entwine and Freshcare 3

Green Industries SA 3

South Australian Wine Industry Association 3

What to include in your EMP: an overview 4

Questions to ask when building your EMP: what information do you already have, and what do you need to get? 5

Q1: What environmental compliance obligations does the organisation have? 5

Q2: Who in the organisation is responsible? 5

Q3: How does our business affect the environment? 5

Q4: What risks do we face? 6

Q5: What should we focus on? 6

Q6: How do we set our targets? 7

Q7: How will we track what we do? 9

Q8: What shall we aim for? 10

Q9: How do I finalise the draft EMP? 10

Q10: Who has to endorse the EMP? 10

Q11: How will the EMP be implemented? 10

Q12: Who will review the EMP, how and when? 10

Appendix A: Environmental sustainability policy 11

Appendix B: Example environmental responsibility structure 12

Appendix C: Example risk management framework 13

Appendix D: Example environmental objectives and targets 15

Appendix E: Example environmental action plan 16

WHY CREATE AN ENVIRONMENTAL MANAGEMENT PLAN?

Environmental Management Plans (EMPs) are important. They provide a framework from which your business can work towards and achieve environmental best practice. An EMP allows a winery to identify and control the environmental impacts of its activities and improve its environmental performance over time. It is an active document that is reviewed and updated regularly so that performance proceeds step by step towards clearly defined goals.

An EMP is an essential component of an environmental management system and is required in order to meet the requirements for Freshcare Environmental Code – Winery, Entwine Australia, and AS/NZS ISO 14001:2004 Environmental management systems standards.

It demonstrates the winery's commitment to improving environmental performance which can support applications for government funding programs and industry awards including the South Australian Wine Industry Association Environmental Excellence Awards.

Entwine and Freshcare

Entwine Australia is the national wine industry assurance program that allows winemakers and wine grape growers to receive formal certification of practices according to recognised standards. Members are required to:

- gain certification to an approved third party audited environmental certification
- report annually against a set of environmental performance indicators.

Freshcare Environmental – Winery is the most utilised environmental certification program under Entwine Australia. It is governed by a Code of Practice that outlines specific practices that must be implemented and maintained in order to achieve continuous environmental improvements in wine production.

There are a number of benefits in becoming a member of Entwine including:

- independently certified environmental credentials
- improved marketing opportunities and market access
- implementation of sustainable practices to ensure a long-term future
- and assurance of best environmental practice to domestic and international markets.

www.awri.com.au/industry_support/entwine

Green Industries SA

Green Industries SA (GISA) is a South Australian state government organisation. GISA's function is to assist in the development of the green economy in response to the demand for clean and green produce, and the reduction of emissions to air, water and soil from industry. Green Industries SA promotes the more efficient use of resources, and the conservation and recovery of scarce resources.

The Green Industries SA Business Sustainability Program supports organisations to deliver positive environmental, economic and social outcomes. For information on the type of support offered go to:

www.greenindustries.sa.gov.au/business-sustainability

South Australian Wine Industry Association

The South Australian Wine Industry Association (SAWIA) is the peak body representing the viticultural and winemaking interests of South Australia. SAWIA provides practical information and advice to members on a wide range of topics, such as industrial relations, Work Health and Safety (WHS), environment, viticulture and export, to name a few.

SAWIA's Environmental Excellence Awards recognises its members who go above and beyond the basics of environmental management systems and demonstrate leadership in achieving substantial quantifiable improvements in energy use and carbon reduction, protection of land and biodiversity, water and waste management.

www.winesa.asn.au

WHAT TO INCLUDE IN YOUR EMP: AN OVERVIEW

The following lists the minimum recommended contents for an EMP. For more information on each item, refer to the next section, Questions to ask when building your EMP.

Basic company information

Who are you (company details, including who verified the EMP) and which locations or areas will be covered by the EMP?

Environmental statement and policy (if available)

How are you meeting your legal obligations with respect to the environment? For information about legal obligations, refer to *Environmental Compliance Guidelines for the South Australian wine industry* available from SAWIA at www.winesa.asn.au/members/advice-information/environment

Does the organisation have an environmental policy, or is environmental management considered in other policies? (Refer to Appendix A for information about environmental policy and an example)

Environmental responsibility structure

Who is responsible for ensuring the organisation meets its environmental obligations, and who helps to implement environmental management actions in the workplace?

Environmentalassetsanddrainage information

What assets such as waterways, lakes or wetlands, remnant native vegetation, heritage or biodiversity areas are on or next to the site/s covered by the EMP?

Where does water and wastewater go within the winery site? A requirement of Freshcare is to include a diagram of the drainage system that shows drainage lines through the site, surface drain networks and direction of flow, surface drain interceptions and wastewater storage facilities.

Objectives and targets

What are your objectives and targets for improving the winery's environmental performance and values over the next 12 months? Do you have any shorter or longer term targets?

Measurable and targeted actions thatsupportobjectivesandtargets

How will you achieve each objective and target? Set specific and measurable actions for each, considering the following topics:

Energy and greenhouse gas (carbon) emissions
Water and wastewater
Supply chain: Optional, but consider this once your own performance is improving satisfactorily
Solid waste, recycling and materials (including packaging)
Culture and behaviour change
Noise, odour, dust
Biodiversity – existing or planned areas of native vegetation, areas of biodiversity value, waterways, lakes or wetlands that are on or adjacent to the site/s covered by the EMP
Any other aspects that are identified as having significant environmental impacts or risks, or have potential for significant environmental improvement

Continuous improvement

How will you track, monitor and report on objectives and targets? Include information on staff training and awareness programs and how you will manage corrective actions that arise from the EMP review process.

Don't forget:

Official endorsement

The organisation's Chief Executive (or equivalent) must sign the completed EMP.

Formal review and reporting methods

The EMP must be reviewed, and the results updated and recorded annually. As a minimum, results should be reported to internal management, and where possible, included in the organisation's annual report (or equivalent).

REMEMBER
EMPS ARE WORKING DOCUMENTS AND SHOULD BE UPDATED EVERY YEAR.

QUESTIONS TO ASK WHEN BUILDING YOUR EMP: WHAT INFORMATION DO YOU ALREADY HAVE, AND WHAT DO YOU NEED TO GET?

BEGIN BY IDENTIFYING THE ENVIRONMENTAL RESPONSIBILITIES OF THE WINERY AND ITS STAFF

Q1
What environmental compliance obligations does the organisation have?

Is the winery covered by an environmental licence? Does it need one?

- Refer to *Environmental Compliance Guidelines for the South Australian wine industry* available at www.winesa.asn.au/members/advice-information/environment

Does the organisation subscribe to any non-legislative environmental requirements?

Do you have an environmental policy (or equivalent) that outlines the organisation's environmental commitment and is signed by the Chief Executive?

- To be consistent with ISO14001:2004 requirements, an environmental sustainability policy should include the specific terms "prevention of pollution" and "comply with environmental legal requirements, and other requirements to which the organisation subscribes".
- Refer to Appendix A for information and an example of an environmental policy

Q2
Who in the organisation is responsible for environmental management and performance?

Who or what roles within the organisation include aspects of environmental compliance / management/reporting/actions? Be sure to cover management and operational roles.

- Can this be depicted on an organisational chart that shows the responsibility structure in a hierarchical manner (i.e. relevant roles and their relationships)? Appendix B shows an example structure.
- Is this included in job/position descriptions (this could help to develop the chart structure)?

Q3
How does our business affect the environment?

Ask yourself the following questions:

- Do we have environmental assets such as native vegetation, areas of biodiversity value, waterways, lakes or wetlands on or adjacent to the site/s covered by the EMP?
- Where does our stormwater go?
- How is our wastewater managed?
- Where do our waste and recyclable materials go?
- Why do we have waste materials? Can they be avoided?
- Do we have processes that create waste and /or pollution?
- If we do have pollutants, what do they affect?
- What equipment do we have that uses a lot of energy / power?
- Do staff show an interest in the environment?
- Are any staff trained in environmental management or a similar discipline?

IDENTIFY, IN GENERAL TERMS, ALL THE ENVIRONMENTAL ASPECTS OF THE WINERY. THINK ABOUT POSITIVE AND NEGATIVE IMPACTS, AND POTENTIAL IMPACTS.

Q4
What risks do we face?

Do you have a risk management plan for the winery, possibly related to Work Health and Safety (WHS)?

- If you do, make sure that environmental risks are detailed and fully covered. Could environmental aspects be integrated with WHS risk assessments and/or systems?
- If not, make Environmental Risk Management an action item in your EMP.
- Assessing and reducing risk is an essential requirement for many certification and accreditation programs. Consider using a risk matrix to identify your highest environmental risks in terms of both severity of effect (e.g. catastrophic, major, moderate, minor, insignificant) and likelihood of occurrence (e.g. almost certain, likely, possible, unlikely, rare).
- Impacts can include financial, environmental, workforce, community, health and safety, and broader social risks.

IDENTIFY HOW YOU CAN PREVENT OR MINIMISE IMPACTS BOTH ON AND OFF SITE.

Q5
What should we focus on?

Once you have an understanding of the environmental aspects, impacts and risks, identify the most significant and make these your priorities for the EMP.

FOR WINERIES THAT DO NOT YET HAVE AN EMP

Setting a multitude of actions for the first year may seem like a daunting task; however, there's nothing wrong with setting targets around investigating options for certain courses of action.

Consider segregating actions into those that can be completed within a year, and those that will be investigated during the year.

Example risk matrix

Likelihood	Consequence / Severity of Effect				
	Insignificant	Minor	Moderate	Major	Catastrophic
Almost certain	H	H	E	E	E
Likely	M	H	H	E	E
Possible	L	M	H	E	E
Unlikely	L	L	M	H	E
Rare	L	L	M	H	H

Ratings:

E	extreme risk – take immediate action / top priority
H	high risk – action required / high priority
M	moderate risk – assign responsibility, monitoring or response procedures / medium priority
L	low risk – may be managed by routine procedures / lower priority actions

Refer to Appendix C for an example risk management framework.

Q6
How do we set our targets?

An EMP needs to set short and long term measurable targets that are both practical and commercially sensible. Implementing your EMP should not impact negatively on your company's financial sustainability or productivity. The EMP including key objectives, targets and actions also need to reflect the Policy of your business.

Developing Policy:

Businesses present their Policy in ways that suit their business strategy and culture; some businesses have a Health Safety and Environment Policy, others may have an Environmental Policy. If you are starting from scratch, other organisations may have documents that could help. Check out:

Othercompanies'websites for environmental sustainability policies

A policy is a basic requirement of ISO14001 and some certification programs – make it an action item in the EMP if you don't already have one. The policy should be publicly available, signed by the Chief Executive and include your organisation's commitment to:

- Meeting legal requirements – to be ISO14001 compliant it should include the specific terms "comply with environmental legal requirements, and other requirements to which the organisation subscribes".
- Continuous improvement of environmental performance.
- Monitoring, reviewing, and reporting on environmental performance.
- Working towards cultural change and more sustainable operations.
- Protecting environmental assets including biodiversity - to be ISO14001 compliant it should include the specific terms "prevention of pollution".

YOUR EMP OR A SUPPORTING ENVIRONMENTAL ACTION PLAN SHOULD SPECIFY THE WHO, WHAT, WHEN AND HOW FOR ALL ACTIONS AND ACTIVITIES.

Regional EMPs

There are good EMP examples from Natural Resource Management Boards / Groups and check for other examples from regional groups in your area.

Specific and measurable actions that will be taken in order to achieve each objective and target should also be set. Refer to Appendix D for examples.

It is recommended that an action plan be developed to support the objectives and targets. This should include expected completion times for each action, name/s of the person/s responsible, and where actions have not been completed (determined through the annual EMP review) include a reason why. Refer to Appendix E for an example action plan.

Tips on what to consider when developing your targets:

Over consumption and inefficient use of resources such as gas, electricity and water pose financial risks as well as environmental risks at regional and global levels.

Energy and greenhouse gas (carbon) emissions

Can include electricity, gas, diesel and other fuels, as well as renewable energy such as solar and wind power.

If you don't know where to start to improve in this area, consider doing an energy audit (by yourself/staff or with a consultant/third party), which gives you a baseline energy consumption profile from which you can prioritise improvements. Annual audits can be done by staff or an external contractor and can be used to monitor energy use and identify further improvements. Consider making energy audits or assessment an ongoing action item.

For assistance in identifying energy-saving options, refer to the *Winery Energy Saver Toolkit* available from SAWIA's website at www.winesa.asn.au/members/advice-information/environment/energy-efficiency/winery-energy-saver-toolkit

Other things to consider are:

- Have you appointed someone to be responsible for energy management?
- Do you consider energy efficiency when purchasing new equipment, and is this part of company policy?
- Have you considered purchasing Green Power?

Energy consumption is directly related to greenhouse gas (carbon) emissions as well as financial energy operating costs. So targets for emissions and financial operarting costs can be considered in conjunction with energy targets.

Greenhouse gas emissions can also be related to the use of carbon dioxide gas in the winery, refrigerant gas leakage, wastewater and waste management.

Refer to *A guide to greenhouse gas reduction for South Australian grapegrowers and winemakers* available from SAWIA at: www.winesa.asn.au/general-public/resources/sector-agreement for more information about greenhouse gas emissions from wineries, including how emissions can be reduced.

Audits set a baseline and helpidentifyimprovement opportunities.Withaclear baseline, you can identify ways to improve your performance. Once the EMPisbeingimplemented, audits help measure progress and identify new areas to improve.

Q6 (CONTINUED)

Water and wastewater

Can include mains water, recycled water and rain water, plus wastewater sent to sewer, aeration ponds, and/or for other uses (such as use on woodlots).

Consider conducting a water audit or assessment (by yourself/staff or with a consultant/third party) to establish a water use baseline and highlight areas for improvement.

Also consider:

- Are taps, pipes and water fixtures routinely inspected, repaired and maintained?
- Is the quality and quantity of wastewater being monitored and recorded weekly?
- Are you keeping appropriate records for regulatory or other requirements (such as the EPA or Freshcare Environmental Code of Practice - Winery) to monitor the impacts of wastewater reuse?
- Are there opportunities to replace mains water with rain-water harvested from roofs?

CURRENT CONTRACTS AND WASTE PROVISIONS OFFER VALUABLE INFORMATION TO YOUR PLANNING.

Use these to identify clear achievable goals and actions.

Solid waste, recycling and materials

Can include recycling, reuse, waste to landfill, waste services procurement, and product procurement (one good way to avoid waste is by ordering to demand, that is, only ordering what is needed for a particular job).

Consider:

- Do you have a waste management plan that documents all the types of waste generated on site/s, how wastes are treated/removed, and ways the winery can avoid, reduce, reuse and recycle?
- Are waste materials stored and disposed using approved facilities/ methods?
- Do you have formal waste and recycling contracts, and are they reviewed regularly?
- What commitment can you make to reduce packaging waste?

Noise, odour and dust

Do the operations of the winery have potential to cause annoyance to neighbours, such as issues with noise, odour and/or dust?

If so, how can this be minimised or avoided?

CONSIDER WHAT YOU DO AND WHAT YOU COULD DO TO IMPROVE SURROUNDING ENVIRONMENTAL ASSETS.

Biodiversity

Include all relevant environmental assets identified as part of Q3 (e.g. native vegetation, areas of biodiversity value, waterways, lakes or wetlands on or adjacent to the site/s covered by the EMP), and consider:

- Are the areas managed to protect both on and off-site biodiversity conservation values?
- Do you have any strategies to reduce environmental impacts on the land surrounding ecosystems?
- Do you have a documented feral animal, weed, and /or disease control program?

If there are no environmental assets associated with your site/s, you can skip this section.

THINK ABOUT HOW YOUR STAFF AND CONTRACTORS CONTRIBUTE TO ENVIRONMENTAL MANAGEMENT.

How could they contribute to improvements? Could they help identify improvements and/or implement actions?

Culture and behaviour change

Consider:

- Are staff encouraged to practice sustainable behaviour at work and are they aware of environmental targets / strategies? Is this included in staff / contractor inductions?
- Is there at least one staff member trained and/or accountable for managing environmental issues?
- Do you have any programs aimed at embedding a culture of environmental responsibility within the organisation, and do they include staff at all levels, including senior management?
- Are contractors informed about on-site protocols and made aware of their environmental obligations?

Refer to your workplace environmental obligations and environmental structure (Q1 and Q2) when considering staff involvement.

YOUR EMP OR A SUPPORTING ENVIRONMENTAL ACTION PLAN SHOULD SPECIFY THE WHO, WHAT, WHEN AND HOW FOR ALL ACTIONS AND ACTIVITIES.

PERHAPS SUPPLIERS CAN HELP TO SUPPORT YOUR TARGETS.

Look for and request environmentally sustainable products and services.

Q6 (CONTINUED)

Supply chain

Consider encouraging others in your supply chain to take steps towards environmental sustainability, which will ultimately help you reach your goals. Things to consider include:

- Do you ask suppliers to provide reusable, recyclable or returnable packaging?
- Is sustainability performance included as part of the assessment process for the purchase of new products, especially major purchases?
- In comparing suppliers for new equipment do you consider operational energy, materials and water usage as well as waste generation?
- Are sustainability principles incorporated by product developers into the design of new products and services?
- Has an audit been undertaken to investigate sustainable practices and solutions within the supply chain?

Do you use local products and/or services, thereby reducing the impacts of transport across large distances and supporting the local community?

Suggestions for target setting:

The following targets are provided as a guide only. You will need to consider your organisation's own unique circumstances when setting targets, as it will depend on how well it's currently performing and what resources – staff, time, and finances – are available to implement change.

- Reduce energy use intensity[1] and greenhouse gas emissions by 30% from a baseline year.
- Source at least 10% of energy requirements from GreenPower and / or renewable resources (such as solar or wind power).
- Reduce water use intensity from baseline year (reduction amount should consider what is reasonably achievable given that reductions in winery water consumption can lead to increases in wastewater chemical concentrations).
- Divert at least 75% of waste from landfill, or achieve 30% reduction in waste intensity.
- No complaints relating to environmental impacts (e.g. pollution, noise, odour).
- Implement corrective actions relating to any environmental incidences within 3 months of the incident being reported.
- Comply 100% with environmental legal requirements.
- Review and update EMP every 12 months.

USE THESE TARGETS AS A GUIDE TO DRAFT YOUR EMP.

Develop and review your own targets as you progress.

Q7
How will we track what we do?

What system will work best for you to record energy, fuel, water, and waste so you can track improvements?

– Could you use something simple like an Excel spreadsheet, or perhaps you need something more sophisticated?

– Do you have any existing data records that can be built upon (e.g. consolidated records of energy, water and /or fuel use)?

– Do you have information readily available such as utility bills and detailed waste and recycling invoices or do you need to gather more so that you can start tracking progress?

Recording, monitoring and reporting on performance should be a standing action item in your EMP.

YOU CAN'T MANAGE WHAT YOU DON'T MEASURE.

Recording and monitoring environmental performance is an important component of continuous improvement.

[1] *Intensity can relate to resource use per tonne of grapes crushed or per bottle of wine produced. For example, there could be a target to reduce energy consumption by 30% for every bottle of wine produced by 2020 (based on baseline year 2014-15)*

EMP ACTIONS OFFER YOU A STEP BY STEP WAY TO HELP YOU TO ACHIEVE YOUR LONGER TERM GOALS.

Separate actions you could implement within a year from those that need further investigation and analysis.

Q8
What shall we aim for?

For each of the key areas (listed as Measurable and targeted actions on page 4), choose at least one priority improvement (more if you can) that you believe your company can achieve within the year and which will support your targets. Make these priority actions in your EMP. Also refer to your risk analysis when determining priority actions.

Q9
How do I finalise the draft EMP?

Review and revise your EMP. Get feedback and input from other staff before you prepare a final draft. Check that all actions, their priority, who is responsible and the expected outcome and timeframe are included and items for immediate action are clearly identified.

Q10
Who has to endorse the EMP?

The EMP must be signed by the Chief Executive (or equivalent). Make sure he/she supports the priority actions and necessary resource requirements (staff, time, finance) to implement actions.

Q11
How will the EMP be implemented?

This guide helps you to create an EMP. How you implement it needs to be decided by you and other staff within your organisation.

In general terms, once you have finalised the EMP and it's endorsed, those with responsibility for actions will work to complete the actions within the nominated timeframes and report on results. This may require some staff training (or staff information / awareness sessions as a minimum).

Someone will need to take responsibility for ensuring actions are being addressed and that some progress is being made. Someone will also need to be responsible for leading the EMP review and update process.

Q12
Who will review the EMP, how and when?

An EMP should be reviewed annually and staff at all levels, including senior management, must be involved in review processes.

When the EMP is reviewed, you will need to take note of completed actions, actions that were not able to be completed, outcomes, further actions and changed priorities. Make sure these are incorporated into the new EMP for the following year.

Your revised EMP should specify the 'who, what, when and how' for all actions and activities.

Contact the Environment Protection Authority on (08) 8204 2004 for further information about your legal requirements for environmental compliance.

Visit **www.greenindustries.sa.gov.au/business-sustainability** for more information about the Green Industries SA Business Sustainability Program.

More information on Entwine can be found at **www.awri.com.au/industry_support/entwine**

Visit **www.freshcare.com.au** for more information on this certification and accreditation system.

Visit the South Australian Wine Industry Association website at **www.winesa.asn.au** for more information on environmental support and services available to members.

APPENDIX A: ENVIRONMENTAL SUSTAINABILITY POLICY

An environmental policy is a statement made on behalf of an organisationtoshowtheintentions and principles of the organisation in relation to its overall environmental performance. The policy provides a framework for setting objectives and targets, and for taking action.

It is recommended that the policy:

- be documented and communicated to all employees
- be signed by the Chief Executive (or equivalent)
- be available to the public
- be specific to the organisation and local / regional conditions
- include a commitment to continuous improvement
- include a commitment to the prevention of pollution (ideally those words used specifically)
- include a commitment to comply with environmental legal requirements, and other requirements to which the organisation subscribes (ideally those words used specifically).

Also consider linking the environmental sustainability policy with other organisational policies such as Work Health and Safety (so it could become a Work Health Safety and Environment, WHSE, policy).

Example Policy Statement

Company X recognises it has the potential to impact negatively on the environment and is committed to complying with environmental legal requirements, and other requirements to which the organisation subscribes, including the prevention of pollution.

Company X recognises that appropriate environmental management is not only important for matters concerning legislative compliance, but also for the protection of the environment and to minimise its impacts on resource use, biodiversity and the local area in general.

We aim to achieve continual environmental improvement through setting, implementing, reviewing and updating our environmental management plan objectives and targets to minimise our environmental footprint.

At Company X, we are also committed to:

- allocating adequate resources for environmental management
- consulting with staff, contractors and other community stakeholders on environmental matters
- ensuring employees and contractors comply with all relevant environmental rules and regulations
- providing a safe and sustainable work environment suited to our operations and local conditions
- improving resource efficiency and minimising waste wherever possible
- controlling environmental hazards that may pose a risk to the community and environment
- meeting and exceeding, wherever possible, environmental legislation, regulations and other relevant standards.

OTHER EXAMPLES

Wirra Wirra Vineyards: https://www.wirrawirra.com/who-are-we

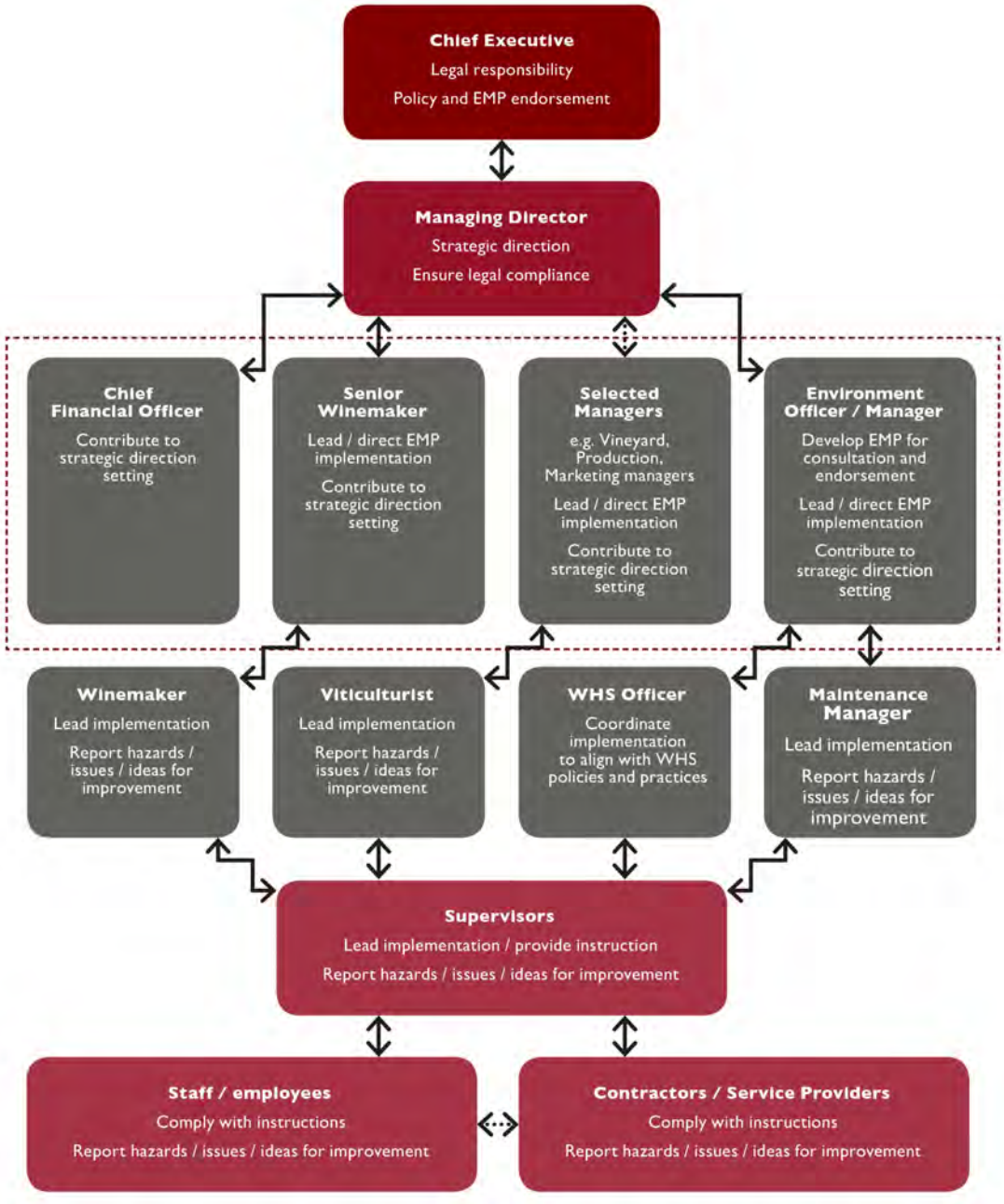
Margan, Hunter Valley Wines: **www.margan.com.au/About-Us/Sustainability**

National Gallery of Australia: **nga.gov.au/AboutUs/policies/environment.cfm**

More examples can be found via internet search engines (note that not all companies publish policies online).

APPENDIX B: EXAMPLE ENVIRONMENTAL RESPONSIBILITY STRUCTURE

The following environmental responsibility structure is included as a guide. The structure in your organisation may be different depending on legal requirements and/or staff positions and communication channels. The responsibilities of staff may also differ depending on the wineries' unique circumstances and working arrangements of staff. Responsibilities included below represent the key items – there may be others relevant to specific wineries.



APPENDIX C: EXAMPLE RISK MANAGEMENT FRAMEWORK

The following page shows an example of a risk management plan. To develop this plan (or a similar plan) the following steps are recommended:

1. Identify hazards and potential hazards, along with their current control measures

- Talking to staff and conducting a site walk through / inspection can assist with this task

2. Determine the level of risk

- Use a risk matrix to plot the level of risk posed by each hazard (an example risk matrix is included on page 6; check if your organisation uses another risk matrix or risk assessment criteria, possibly to assess Work Health Safety risks, and if so, follow your organisational guidelines for risk assessment)

3. Determine appropriate control measures to reduce the likelihood and/or severity of occurrence

- Consult with relevant staff when determining appropriate control measures
- Does the organisation have any guidelines for applying a hierarchy of controls for risk, perhaps something similar to the WHS risk management diagram below?

ELIMINATION: physically remove the risk permanently

SUBSTITUTION: replace the hazard or the cause of the hazard with something of lower risk or something that does not produce a hazard

ENGINEERING CONTROLS: use physical barriers / enclosures to isolate people from hazards and/or reduce hazards

ADMINISTRATIVE CONTROLS: change the way people work to reduce or prevent exposure to hazards, e.g. develop and implement Standard Operating Procedures (SOPs); provide appropriate training; install signs / warning labels; provide additional supervision for certain tasks.

PERSONAL PROTECTIVE EQUIPMENT (PPE): provide equipment that will provide some level of protection from hazards – this is the least effective method of control as there is a risk that PPE will fail or be rendered ineffective (especially without proper maintenance)

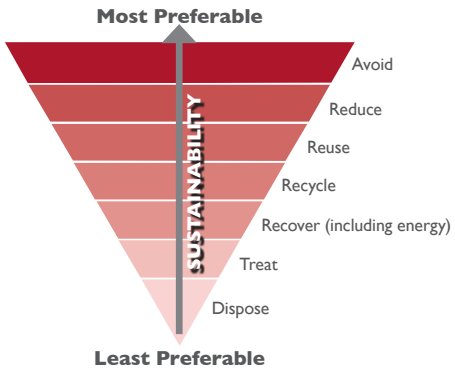
4. Assign responsibility for the management of risks (i.e. who is responsible for controlling risks)

5. Assign timeframes for each hazard / control measure (i.e. when should control / management start)

EXAMPLE Risk Management Plan (Note: this example has been created for these EMP guidelines only; it is not a copy of a risk management plan developed for a specific winery)

Risk (i.e. events that might (or might not) happen)	Potential Impact / Hazard	Risk Rating	Control Measures	Responsible Person	When	Residual Risk Rating (after control measures applied)	Completed
Spillage of wine / lees	Waste water treatment plant overload – odour issues	Moderate	Staff training in appropriate wine management techniques	Senior winemaker	As required (new staff)	Low	2014
Spillage of hazardous materials	Site contamination / pollution	High	Spill kit readily available in high-risk areas; staff training	Maintenance Manager	As required (new staff)	Moderate	2014
Flooding	Waste water overflow into surrounding areas (pollution)	Low	Bunding	Environment Manager	Ongoing maintenance	Low	2012
Power shortage / disruption	Waste water treatment plant cannot operate – odour issues	High	Back-up generators regularly maintained	Maintenance Manager	Half-yearly	Moderate	Annually
Inappropriate waste management	Site contamination / pollution - odour and vermin issues	Moderate	Waste contract covers the removal of all waste material off-site	Environment Manager	Contract review every 2 years	Low	2012
Construction works and heavy vehicle access	Issues with noise and/or dust – air quality issues	Low	Access roads are sealed	Environment Manager	Ongoing monitoring	Low	2010
Erosion	Water flow from concrete areas causes soil erosion	Moderate	None currently – requires improved drainage infrastructure	Environment Manager	April 2014	Moderate	tba

Waste Hierarchy



The waste hierarchy can also be considered when determining appropriate controls of environmental risks and can be applied to other resources as suggested below:

AVOID: eliminate / remove the cause of making waste / environmental harm

REDUCE: reduce the total amount of waste produced / energy consumed / water used / greenhouse gas emissions

REUSE: use waste products / resources elsewhere (e.g. use organic waste for vineyard composting; use treated water for irrigation)

RECYCLE: send waste products for recycling and/or recycle resources within the facility so they can be used elsewhere

RECOVER: use waste products and materials for energy recovery (e.g. send dry waste to an energy recovery facility for processing; recover energy from waste heat for use within the facilities)

TREAT: treat wastes / resources to reduce environmental impacts before they leave the site – some treatment may be done offsite

DISPOSE: dispose of waste to landfill / accept level of environmental risk – this is the least preferable option

APPENDIX D: ENVIRONMENTAL OBJECTIVES AND TARGETS

An objective is something that you strive to attain or accomplish through effort / action. It is generally written as a broad or high-level statement.

A target (or goal) is something you are trying to do or achieve. It is more specific than an objective and should complement / support an objective (if you have one).

Actions are the foundation of objectives and targets. These can be set in a series of steps that build upon each other in order to achieve a specific target, which in turn compliments and supports an objective.

Examples of environmental objectives and targets are provided below. Actions are shown in Appendix E.

Objectives:

- Maintain 100% environmental compliance.
- Minimise electricity and gas consumption and greenhouse gas emissions.
- Reduce transport-related greenhouse gas emissions.
- Minimise the consumption of mains water through better water management practices.
- Increase water reuse.
- Reduce the amount of waste sent to landfill.
- Increase recycling and material reuse, and avoid purchasing unnecessary goods/components.
- A supply chain that contributes to good waste management outcomes and minimises environmental impacts.
- All staff undertake work practices that reduce their impact on the environment.
- Visitors are encouraged to reduce their impact on the local environment.

Targets:

- 25% reduction in electricity consumption by 2015-16 (based on 2014-15 consumption); and 10% reduction in electricity consumption by 2016-17 (based on 2015-16 consumption).
- A minimum of 10% GreenPower purchased by 2016-17 (if renewable energies have not been installed prior to 2016-17).
- 10% reduction in transport-related greenhouse gas emissions by 2015-16 (based on 2014-15 consumption).
- 20% increase in water reuse by 2016-17 (based on 2014-15 consumption).
- Achieve 75% waste diversion from landfill by 2016-17 by increasing the combined recycling and reuse rate to 75%.
- 100% of staff trained in "environmental awareness at work" (or have undertaken training on the implementation of the Environmental Management Plan) by 2015-16.
- All visitor areas equipped with recycling bins and information about public transport options are available at the cellar door by 2015-16.

APPENDIX E: EXAMPLE ENVIRONMENTAL ACTION PLAN

Environmental Action Plan 2013-14 (example only)								
No.	Related objective	Action	Aspect of Operations	Importance	Key Performance Indicator / Target	Timeframe for Completion	Responsibility	Status
1a	Minimise electricity and gas consumption and greenhouse gas emissions	Maintain electricity, gas and fuel (transport) consumption records	Winery, vineyards, cellar door	High	All records up-to-date by end of August each year	Yearly (August)	Environment Manager	Updated August 2013
1b	Reduce transport-related greenhouse gas emissions	Update greenhouse gas emissions figures to align with latest available greenhouse gas emissions factors (updated yearly in July – check National Greenhouse Accounts Factors prepared by Australian Gov)		Medium	All records up-to-date by end of August each year	Yearly (August)	Environment Manager	Updated August 2013
1c		Review energy audit report - identify and agree to priority areas for reducing electricity, gas and fuel consumption		Medium	Priority list established and signed	December 2013	Environment Committee	Audit completed June 2013
1d	Reduce transport-related greenhouse gas emissions Minimise electricity and gas consumption and GHG emissions.	Implement top priority energy reduction actions (tbc)		High	25% reduction in electricity consumption and 10% reduction in transport-related greenhouse gas emissions by 2015-16 10% GreenPower purchased OR renewable power sources installed	2015-16 2016-17	Operations Manager, Cellar Door Manager, Vineyard Manager (for transport/fuel reductions)	Pending completion of 1c

Environmental Action Plan 2013-14 (example only)								
No.	Related objective	Action	Aspect of Operations	Importance	Key Performance Indicator / Target	Timeframe for Completion	Responsibility	Status
2a	Minimise consumption of mains water through better management practices	Maintain water consumption records	Winery, vineyards, cellar door	High	All records up-to-date by end of August each year	Yearly	Environment Manager	Updated August 2013
2b		Review mains water use – identify and agree to areas for improvement		Medium	Priority list established, and signed	June 2014	Environment Committee	Preliminary review completed
2c		Implement top priority mains water reduction actions (tbc)		High	tbc	tbc	Operations, Cellar Door, and Vineyard Managers	Pending completion of 2b
3a	Increase water reuse.	Establish water reuse record, including baseline figures for 2014-15	Winery, vineyards	High	Records established and up-to-date	January 2015	Environment Manager	Pending
3b		Identify and agree to ways for improving water reuse		Medium	Priority list established and signed	June 2015	Environment Committee	Pending
3c		Implement top priority actions for increasing water reuse (tbc)		High	20% increase in water reuse	2016-17	Operations, Cellar Door, and Vineyard Managers	Pending completion of 3b
4a	Reduce the amount of waste sent to landfill Increase recycling and material reuse	Establish waste and recycling record, including baseline figures for 2014-15	Winery, vineyards, cellar door	High	Records established and up-to-date	January 2015	Environment Manager	Pending
4b		Complete a waste and recycling assessment - identify and agree on areas for improvement		Medium	Priority list established and signed	June 2015	Environment Committee	Pending
4c		Implement top priorities to reduce landfill waste (tbc)		High	Achieve 75% waste diversion from landfill	2016-17	Operations, Cellar Door, and Vineyard Managers	Pending completion of 4b

Environmental Action Plan 2013-14 (example only)								
No.	Related objective	Action	Aspect of Operations	Importance	Key Performance Indicator / Target	Timeframe for Completion	Responsibility	Status
5a	A supply chain that contributes to good waste management outcomes and minimises environmental impacts.	Review company procurement policy and identify and agree to steps to ensure waste and resource consumption are included in purchasing decisions	All	Medium	Priority list established and signed	2015-16	Environment Committee	Pending
5b	Minimise consumption of mains water through better management practices	Develop a 'sustainable procurement policy'		Low	Policy endorsed by Chief Executive	2016-17	Environment Manager	Pending completion of 5a
5c		Implement sustainable procurement policy		Low	tbc	2017-18	All Managers	Pending completion of 5b
6a	All staff undertake work practices that reduce their impact on the environment	Train senior staff in environmental awareness	All	High	100% of staff trained in "environmental awareness at work"	2015-16	Environment Manager	Drafted content of awareness session
6b	Increase recycling and material reuse	Train other staff in environmental awareness		Medium	Policy endorsed by Chief Executive	2016-17	Environment Manager	Pending completion of 5a
7a	Reduce the amount of waste sent to landfill Increase recycling and material reuse Visitors are encouraged to reduce their impact on the local environment	Review waste and recycling contracts, and update if deemed necessary	Winery, vineyards, cellar door	Low	Waste and recycling contracts renewed	October 2015	Environment Manager, Procurement Manager	Pending
7b		Install recycling bins in cellar door for public use		Medium	Bins installed	2015-16	Cellar Door Manager	Pending completion of 7a
8	Maintain 100% environmental compliance	Review environmental compliance protocols and update if necessary	Winery, vineyards	High	No compliance issues	Ongoing	Chief Executive	Ongoing – zero issues to date

Example Endorsement Statement

Updated (date): _____

By (name) : _____ (title) _____

Environment Manager (signature): _____

Name: _____ Date: _____

Managing Director (signature) : _____

Name: _____ Date: _____

Chief Executive (signature): _____

Name: _____ Date:. _____

Contact

Green Industries SA
Level 4, 81-95 Waymouth Street
ADELAIDE SA 5000

www.greenindustries.sa.gov.au

Telephone +61 8 8204 2051

AVOID • REDUCE • REUSE • RECYCLE