Australian Wine Industry Environment Strategy



FINAL REPORT to

GRAPE AND WINE RESEARCH & DEVELOPMENT CORPORATION

Project Number: **SWB 99/1**

Principal Investigator: **Keith Jones**

Research Organisation: **South Australian Wine and Brandy Industry Association Incorporated**

Date: **27 September 2002**

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Abstract

The South Australian Wine and Brandy Industry Association Incorporated (SA Wine & Brandy) established an environment program in March 2000 with the financial and in-kind support of various government and industry stakeholders (including the GWRDC). The development of *Sustaining Success: The Australian Wine Industry Environment Strategy* was endorsed by the industry's national peak bodies (WFA & WGCA) and was formally launched on 22 August 2002 at the National Wine Centre. Other activities in the environment program included assisting industry with environmental regulatory requirements, running a National Wine Industry Environment Conference & Exhibition, and the facilitation of a national greenhouse gas reduction program.

Executive Summary

In December 1999, the South Australian Wine and Brandy Industry Association Incorporated (SA Wine & Brandy) signed an agreement with the Australian Greenhouse Office (AGO) to conduct a two-year environment program to improve environmental management through the development of a national environment strategy and the establishment of a greenhouse gas reduction program. The program commenced with the recruitment of Keith Jones in March 2000.

The AGO was the major stakeholder in this program supported by financial and in-kind contributions from individual wine companies, industry organisations, and state and local government agencies. The GWRDC was one of the financial contributors to the program.

The main purpose of the program was to provide strategic direction for the Australian wine industry in relation to the environment. An Environment Strategy Development Working Group and Reference Committee consisting of a broad range of industry representatives, was established to develop the strategy. Taking over two years to complete, *Sustaining Success: The Australian Wine Industry Environment Strategy* was endorsed by the industry's national peak bodies (WFA & WGCA) and was formally launched on 22 August 2002 at the National Wine Centre.

Other activities as part of the environment program addressed the environmental issues associated with wine production and viticulture, which included process efficiencies and government regulation. Through this program, partnerships have been formed and several programs have been initiated.

SA Wine & Brandy's Environment Program has provided support to industry to assist with the compliance of government regulations such as National Packaging Covenant, National Pollutant Inventory and SA EPA requirements.

One of the main initiatives of SA Wine & Brandy's Environment Program was the development of the 1st National Wine Industry Conference and Exhibition held in November 2000 at the Adelaide Showgrounds in South Australia. The conference provided a springboard for the development of *Sustaining Success* and showcased the environmental achievements of the wine industry.

SA Wine & Brandy are Greenhouse Challenge members and have facilitated a national greenhouse program for the wine industry. This program has recruited 5 Greenhouse Challenge members and 20 Greenhouse Allies Partners. In partnership with Energy Efficiency Best Practice, (Commonwealth Department of Industry, Tourism and Resources) the "Wineries of the Future" program was also established.

Background

The South Australian Wine and Brandy Industry Association Incorporated (SA Wine & Brandy) has been pro-active in the environmental area for several years. In 1995, SA Wine & Brandy formed an Environment Committee – formally a sub-committee of SA Wine & Brandy's Executive. The Environment Committee has delegated authority/responsibility from the Executive Committee to address all environmental aspects that relate to the wine industry in South Australia. The Environment Committee has developed a Code of Practice, environmental auditing templates for wineries and facilitated the production of a cleaner production manual.

In December 1999, SA Wine & Brandy signed an agreement with the Australian Greenhouse Office (AGO) to conduct a two-year environment program to improve environmental management through the development of a national environment strategy and establishment of a greenhouse gas reduction program.

It was envisaged that the program would provide the framework for an ongoing national environment program for the wine industry.

The AGO was the major stakeholder in this program supported by financial and in-kind contributions from individual wine companies, industry organisations, and state and local government agencies. The GWRDC was one of the financial contributors to the program.

The program was to commence in December 1999, however initial recruitment failed to find a suitable candidate for the position of environment program manager. The position was re-advertised in January 2000 and Keith Jones commenced in March 2000.

Project Aims and Performance Targets

Project Aims	Outcome
Develop an industry-wide National Environment Strategy.	? Sustaining Success: The Australian Wine Industry Environment Strategy had been completed, formally endorsed by industry and the launch was held at the National Wine Centre on 22 August 2002. ? Generic Action Plan was included in Sustaining Success. ? List of environmental research and development priorities has been included in the Sustaining Success (very high level).
A defensible position as a 'clean and green' industry	? Acquired formal commitment and endorsement from industry to commence annual Public Environment Reporting (first Wine Industry State of the Environment report will be released in August 2003). ? Worked collaboratively with the CRC for Viticulture (EMS Project) to avoid duplication and enhance environmental support for industry.
Improved information on input efficiency and waste minimisation.	? Initiated the 1st National Wine Industry Environment Conference & Exhibition showcasing environmental management activities for both wine production and viticulture. ? Established a national greenhouse abatement program. ? 5 Greenhouse Challenge Members has been achieved (Tarac Technologies, BRL Hardy Ltd, Temple Bruer Wines, CA Henschke Wines & Longview Vineyards Pty Ltd). ? 20 Greenhouse Allies members. ? Established the Wineries of the Future Program with Energy Efficiency Best Practice (Commonwealth Dept of Industry Tourism and Resources). ? Development of generic greenhouse reduction tools and templates to assist industry to quantify greenhouse emissions, initiate action and report on the outcomes. ? Delivery of presentations and workshops at various conferences and industry forums ? Production of the Saving Energy and Money in Wine Production Brochure (design and printing funded by Energy SA).
Capacity to comply with EPA regulations and meeting international environment standards and protocols.	? Worked collaboratively with state EPA's (primary focus SA) in addressing environmental compliance issues. ? Provided input and guidance into the SA EPA's winery audits. ? Highlighted the environmental challenges facing the wine industry in *Sustaining Success* (natural resource security, domestic and overseas regulatory pressures and marketing opportunities). ? Initiated an Environmental Marketing Pressures Workshop with industry (funded by GWRDC) ? Distributed environmental guidelines from overseas retailers.

Method

Environment Strategy
SA Wine & Brandy's Environment Committee (a formal Sub-Committee of SA Wine & Brandy's Executive Committee) provided informal input and feedback of materials related to the development of the Environment Strategy.

The Environment Strategy Development Working Group was established and comprised of representatives from industry and support organisations (eg CRC for Viticulture & GWRDC). The following representatives were part of the Working Group:
? Jim Northey, BRL Hardy Ltd.
? Cecil Camilleri, The Yalumba Wine Company
? Richard Gibson/Steve Hales, Southcorp Wines Pty Ltd.
? Jim Hardy, CRC for Viticulture
? David Baker, CRC for Viticulture
? David Hall, Grape & Wine Research and Development Corporation
? Jeanette Chapman, Waste management consultant
? Dominic Nolan, Australian Wine Regional Forum.
? Linda Bowes, SA Wine & Brandy
? Keith Jones, SA Wine & Brandy

Materials related to the Strategy were discussed with the Working Group in a workshop/meeting environment and recommendations were made by consensus.

An Environment Strategy Development National Reference Committee was also established to provide a wider industry consultation forum. The Reference Committee consisted of industry representatives from all states, some wine regions, and individual winemakers and viticulturalists. Once the Working Group had signed off on materials, the Reference Committee were given the opportunity for input. Feedback was then integrated into the Strategy at consequent meetings of the Working Group.

Additionally, an Environment Strategy Development Workshop was held. Participants of the Workshop consisted of members of the Working Group and Reference Committee and other industry leaders.

The Environment Strategy was formally endorsed by the Winemakers' Federation of Australia and the Winegrape Growers' Council of Australia.

Clean & Green Image, Input Efficiencies, Waste Minimisation & Government Regulations
SA Wine & Brandy's Environment Committee, provided the industry forum to address these areas. Guidance provided by the Committee provided assistance in establishing programs and services. Furthermore, an initiative of SA Wine & Brandy was to invite SA EPA's Operations Manager to Committee meetings to discuss issues face to face. Several workshops/information sessions were initiated and facilitated by SA Wine & Brandy on regulatory requirements, eco-efficiency and environmental marketing.

One of the most important methods of disseminating environmental information, has been the development of a National Wine Industry Environment Conference & Exhibition.

Results/Discussions

Through the process of developing *Sustaining Success: The Australian Wine Industry Strategy* and working with SA Wine & Brandy's Environment Committee, a great deal of information and knowledge has been gathered – both at a strategic and practical level.

Development of Sustaining Success

? Facilitation of the Environment Strategy Development Working Group and National Reference Group.
? Designed, developed and presented at the Environment Strategy Development Workshop.
? Produced, published and distributed *Sustaining Success: The Australian Wine Industry Environment Strategy*.
? Provided assistance in organizing the *Sustaining Success* Launch at the National Wine Centre (2002).
? Provided advice and direction to wine industry organizations (eg WFA, State Wine Industry Associations, AWRI. AWBC) on the implementation of *Sustaining Success*.

Clean & Green Image, Input Efficiencies, Waste Minimisation & Government Regulations

? Established a National Greenhouse Abatement Program for the wine industry.
? Recruited 5 Greenhouse Challenge Members (Tarac Technologies, BRL Hardy Ltd, Longview Vineyards, CA Henschke & Temple Bruer)
? Recruited 20 Greenhouse Allies Partners (Chapel Hill, Bleasedale, Angoves, Bethany Wines, Ballast Stone Wines, Tamburlaine Wines, Kingston Estate, Paulett Wines, Uleybury Wines, St Mary's Wines, Hazelgrove Wines, GWRDC, WFA, AWBC, Land & Energy Pty. Ltd., Archer Environmental Pty Ltd., Tarac Technologies, Longview Vineyards, CA Henschke & Temple Bruer).
? Developed and managed the 1st National Wine Industry Environment Conference & Exhibition, *Setting the Agenda*, which attracted over 300 delegates from industry, support industries, government and environmental groups.
? Participation in numerous workshops including EMS Forum for Horticulture, Mt Lofty Ranges Regional Managing the Impacts of Pesticide Use, Business SA's Public Environmental Reporting and the Murray Darling Basin Commission's EMS proposal.
? Assistance to industry with the mandatory reporting obligations of the Federal government's National Pollutant Inventory.
? Submissions on the Used Packaging Covenant and the National Environment Protection Measure for Used Packaging.
? Established SA Wine & Brandy's National Packaging Covenant Mentor Program to work with members to meet the requirements and obligations of the program. A joint action plan was developed and was accepted by the National Packaging Covenant Council in May 2002.
? Member and participation in Jurisdictional Recycling Group (South Australia) – the combined government/industry forum to allocate funding for environmental projects for the National Packaging Covenant.
? Submission to Planning SA on the Draft Mt Lofty Ranges Watershed Planning Amendment Review.
? In partnership the Commonwealth Department of Industry, Tourism and Resources (Energy Efficiency Best Practice Section), established the "Wineries of the Future" program and provided continued support and guidance.
? Reviewed an industry position on the use of generically modified organisms and initiated industry endorsement of the position proposed by the AWRI.
? Assisted SA Waste Management Committee and PPK Consultants to produce the Marc Management Report and facilitated industry survey.
? Held the "Managing Grape Marc This Vintage" Seminar in February 2001 attended by over 80 industry members at Southcorp's Magill Estate.

- Negotiated with the Environment Protection Agency and Development Assessment Commission to allow on-site trials of new composting technologies (eg grape marc).
- Supported the Conservation Council of SA's Swamp Day Tour for grape growers to promote the conservation of the endangered Mount Lofty Ranges Southern Emu Wren and published an article in their newsletter.
- Participation in the steering committee for the Murray Darling Basin's Environmental Stewardship (focus on viticulture) project for the Langhorne Creek region.
- Ongoing negotiations with EPA concerning the Environmental Code of Practice (Waste, Odour & Noise) and the renewal of EPA Winery Licences.
- Developed an environmental contingency plan framework for wineries, which is being utilised by industry and the SA EPA.
- Organised and facilitated a half-day seminar on environmental SA regulatory requirements addressing the proposed EPA winery audits, understanding investigation procedures from the EPA Investigations Branch, processes developments with the National Pollutant Inventory, and the National Packaging Covenant.
- Participation in the state governments Grape Marc Management Taskforce, which investigated the environmental concerns of managing surplus grape marc. The association was active in encouraging government to support on-site composting of grape marc, which has resulted in several large composting sites, many of which are located in the Langhorne Creek and Clare Valley regions.
- Responded to EPA concerns regarding the disposal of treated pine posts. The association supported a proposed research project to incinerate treated timber, which would produce renewable energy and reuse the metals and chemicals used in the treatment process. The association will be working with government to develop guidelines designed to assist industry manage vine posts in the interim.
- Facilitated a workshop on market pressures for industry from environmental and social issues (funded by GWRDC).
- Collaboration with the Environmental Management System's program of the CRC for Viticulture to coordinate environmental support to industry. Provided input into the development and fine-tuning of Viticulture Environmental Risk Assessment (VERA™) tool.
- Conducted various workshops and presented at a range of forums which included 1st National Wine Industry Environment Conference, BRL Hardy Annual Envoironmental Coordinators Meeting, Southcorp's Grapemarc Seminar, Adelaide Hills Wine Industry Association Annual Strategic Workshop (2002), Biosolids Regulatory Committee (2001), AGM of the NSW Wine Industry Association (2001), Winery Engineers Conference (2001), Australian Wine Industry Technical Conference (2001), University of Adelaide (2001 & 2002), CRC for Food Manufacturing (2001) and the National Vine Health Steering Committee (2002).

Outcome/Conclusion

A copy of Sustaining Success: The Australian Wine Industry Environment Strategy has been included in this report.

A SWOT analysis was conducted targeting the main environment strategy of the Strategy 2025 – "Accelerate the adoption of ecologically sustainable practices throughout all aspects of the industry". SA Wine & Brandy's Environment Committee and the Environment Strategy Development Working Group provided additional input into the SWOT analysis (See Table 1).

Table 1. Sustaining Success SWOT Analysis

INTERNAL	
Strengths	**Weaknesses**
Willingness and commitment to proactively develop, invest in and adopt new techniques, methods and technologies	Rapid growth has resulted in unanticipated environmental and social impacts
General support for research & development	Lack of coordination in addressing environmental impacts
Generally low environmental impacts relative to other industries	Lack of information, data and limited access to existing data in relation to environmental impacts and risks
Collaboration at an industry level	Lack of integration of environmental criteria into decision making processes
Market driven and consumer focused	Limited access, utilisation and availability of environmental management tools
Well established education programs	Poor representation of environmental issues within industry's communication networks
Proven capacity to apply and adopt self-regulation	Focus on short-term solutions
Awareness of importance of being clean and green	Tendency to take for granted the clean & green image
Emphasis on producing high integrity, quality products	Inactive representation in broader environmental forums

EXTERNAL	
Opportunities	**Threats**
Support from Commonwealth, State and Local Governments in terms of adopting better practices, access to resources and funding	Government intervention through regulation – future increases in fines, court action, liability and criminal proceedings.
Willingness of governments and community groups to form partnerships with industry	Diminishing community and political support
Unable to meet or demonstrate compliance with international standards or guidelines	Deterioration of natural resources (water access, water quality, salinity, top soil, climate change)
Gains in market share and exports from nations that are environmentally poor performers	Priorities placed on environmental credentials by overseas governments and customers and a growing environmental awareness of domestic markets
Improve environmental performance by working collectively with support industries, other sectors/industries and the community	Loss of buyer support with retailers and customers – not meeting consumer criteria and/or expectations
Pioneer new market segments and products	Damage to clean & green reputation of industry
Demonstrate wine industry as national and international leaders in environmentally sustainable business practices	Poor Government policy and regulation – non-resolution of competing priorities – short term vision
	Increased competition for resources
	Social and environmental restrictions on industry development and expansion
	Impacts of other industries and other activities to natural resources

Sustaining Success has identified the main environmental drivers for the wine industry, which are:

? Natural resource security – degradation of natural resources such as water, climate, soil and ecological processes.
? Regulatory requirements – Current and potential regulations from governments (domestic and overseas).
? Resource use efficiency – Increasing efficiencies within the production cycle to reduce environmental impacts and reduce costs.
? Competitive Advantage – Utilise good environmental performance to gain market share.

Through this project, a greater understanding of the environmental requirements of the wine industry has been ascertained. Clearly, wine industry members in both viticulture and wineries are demanding a service provision/advocacy role is relation to the environment. The strategies and actions highlighted within Sustaining Success advocates greater industry involvement in environmental matters.

Recommendations

Please refer to *Sustaining Success* (pp 14-15).

Appendix 1: Communications:

Communication mechanisms have been included in the main body of this report. The main areas included:

? 1st National Wine Industry Environment Conference & Exhibition.
? Running seminars and workshops
? Presentations at various conferences and industry forums
? Formal Launch of Sustaining Success at the National Wine Centre
? Representation of industry at various government forums and committees
? Articles in various newsletters.

Appendix 2: Intellectual Property

Intellectual property remains with SA Wine & Brandy

Appendix 3: References

No external material was referenced in this report.

Appendix 4: Staff

Assistance was provided by SA Wine & Brandy staff, SA Wine & Brandy's Environment Committee, and the Environment Strategy Development Working Group and Reference Committee.

Appendix 5: Data and Information

Some of the data and information acquired during the program is confidential and can not be released at this time. However, some materials have been supplied and are attached for your perusal. This includes:

? Environment Contingency Plan Framework
? Solid Waste Survey for SA Wineries
? Draft Greenhouse Gas Abatement Generic Action Plan
? Swamp Day Tour Article
? SA Wine & Brandy's National Packaging Covenant Mentor Program Action Plan

Environmental Contingency Plan Framework – Draft

Identify Risks

- Type
  - Fire
  - Spill
  - Gaseous Escape
  - Contamination
  - Overloaded Systems – Capacity limits
- Cause – Source of emergency
  - Damage, Breakdown & Faults
  - Over/under loaded systems – eg Effluent overflows
  - Human and System Error
  - Unavailability of adequately skilled personnel
  - Natural Disasters (floods, storms, earthquakes)
  - Power Failures/Interruptions
- Scale – Category of emergency
  - Minor – On-site containment, no risk to health or environment
  - Major – Off-site impacts, risk to health or environment, Requires Notification
- Impact – influenced by sensitivity of local environment/catchment
  - Human Health – workers, local community
  - Surrounding Environment - ecological integrity (water, land, air, biota)
  - Nuisance (odours, noise, light)
  - On/Off Site
  - Community Perceptions

Response Procedures

- Recognition of Event
- Raise Alarm
- Assessment of Event
  - Assess Emergency/Contingency Risk (eg Major or Minor)
  - Identify areas of human & environmental risks
- Response Actions – IF SAFE TO DO SO
  - Aid any injured persons
  - Safety Procedure – Staff safety, evacuation (site/area)
  - Cease production – Isolate processes
  - Internal Communications – Notify appropriate staff/management
  - Control Point Source(s)
  - Containment – immediate area, on-site
  - Restore Power/Instigate backup systems
  - Mobilise auxiliary equipment – eg Temporary pumps
  - Replace/repair damaged equipment/devices
- Notification Procedures
  - Emergency Services
  - EPA
  - Local Government
  - Local Community

Management System

- Documented Response Procedures – Staff Awareness, Summary sheet displayed in key areas
- Staff Training & Induction – Awareness raising & procedural
- Responsibility – Designated roles of staff/management
- Internal Communications – Management structure, Communication channels
- External Communications – Documented notification procedures (Who is notified and by whom)

? Monitor – Data Monitoring Results, Community Complaint Log
? Testing Procedures – Drill emergency scenarios & monitor responses
? Preventative Actions – New procedures, technologies, alarms, bunding etc…

Verification of EPA Licence Examples against Proposed Generic Framework

EPA Licence Examples (315-330)	Generic Framework - Cause
1.1 disruption of power supplies;	Power Failures/Interruptions
1.2 storms, fires and flooding;	Natural Disasters (floods, storms, earthquakes)
1.3 plant instrument or equipment breakdowns;	Damage, Breakdown & Faults
1.4 rupture of pipes or tanks;	Damage, Breakdown & Faults
1.5 failure of valves and fittings;	Damage, Breakdown & Faults
1.6 escape or spillage of winery effluent;	Damage, Breakdown & Faults, Over/under loaded systems
1.7 inundation of wastewater storage, treatment and disposal system by floodwaters;	Natural Disasters (floods, storms, earthquakes), Over/under loaded systems
1.8 over-loading or under-loading of effluent treatment systems;	Over/under loaded systems, Unavailability of adequately skilled personnel, Natural Disasters (floods, storms, earthquakes)
1.9 accidental discharge of hazardous materials into the effluent stream;	Human and System Error, Damage, Breakdown & Faults
1.10 temporary loss of access to effluent disposal areas;	Over/under loaded systems, Damage, Breakdown & Faults.
1.11 temporary unavailability of trained operators; and	Unavailability of adequately skilled personnel
1.12 spillage of hazardous substances stored in bulk containers to ensure that the environment is protected during such situations;	Human and System Error, Unavailability of adequately skilled personnel, Damage, Breakdown & Faults

South Australian
Waste Management Committee

PPK
Environment & Infrastructure

ATTENTION WINERY MANAGERS

REVIEWING OPPORTUNITIES TO RECYCLE SOLID WASTE FROM THE WINERY INDUSTRY

SURVEY OF CURRENT PRACTICES

The South Australian Wine and Brandy Industry Association (SA Wine & Brandy) in partnership with the South Australian Waste Management Committee is reviewing recycling opportunities for winery solid wastes. PPK Environment & Infrastructure Pty Ltd (PPK) have been engaged to assist in this research. We are asking all wineries in South Australia to participate in the attached survey to help the industry determine its waste management requirements and to identify viable recycling practices.

South Australia's winery industry is growing rapidly and solid waste management is becoming increasingly important. Alcohol recovery may be limited in the future and tartaric acid recovery is restricted to certain times of the year therefore the industry is reviewing options for the management of its solid wastes such as grape marc, lees and filter medium. The industry has an opportunity to recycle its wastes into valuable resources such as composts and mulches and ensure sustainable waste management treatment options for the future.

By completing and returning the attached brief survey you will help the winery industry:

- quantify the waste generated by the industry and estimate;
- determine the viability of current waste management practices;
- develop a benchmark of regional and state-wide waste management practices;
- quantify the associated cost benefits of value adding winery wastes through recycling initiatives such as composting, mulching and renewable energy options;
- determine the current and future infrastructure requirements for waste recovery and treatment within the various wine regions
- estimate the economic costs associated with waste disposal and identify the potential savings that sustainable waste management may provide to the South Australian wine industry.

PLEASE NOTE: The information from this survey will remain strictly confidential and all completed survey forms will remain with SA Wine & Brandy. The survey results will be collated into winery regions at SA Wine & Brandy's office and NO individual company details (name and contact details) will be passed on to the any organisation including the SA Waste Management Committee or PPK.

Once completed would you please forward your completed survey to Keith Jones, Environment Program Manager, at the SA Wine and Brandy by post or fax.

Post: **Wine Industry House**
555 The Parade Magill
SA 5072

Fax No.: **8331 0722**

Please return your survey by Friday, 29 September.

Should you have any queries please do not hesitate to contact Keith Jones at SA Wine & Brandy by phone 8331 0042 or email keith@winesa.asn.au

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Should you have any queries please do not hesitate to contact Keith Jones at SA Wine & Brandy by phone 8331 0042 or email keith@winesa.asn.au

Your Contact Details

Winery Name: …….

Contact Details:

Address:……
……..

Phone……Fax……
…..…

email……
…….

Management of Grape Marc and Lees Waste

Wine Region: ……..

What was your estimated grape crush for the year 2000 vintage?

……

What is your estimated grape crush for the next five years?

2001……2002……2003……..2004……
……2005……

What was the estimated grape marc produced from your winery for the last 12 months (in tonnes or kilograms or approximate in volume)?

……

What is the estimated grape marc waste generated from waste water treatment (in tonnes or kilograms or approximate in volume)?

……

Please complete the following table to detail your current disposal methods for grape marc and lees waste…

Disposal Method	Sent to Distillation	Composted on-site for reuse as mulch	Processed as mulch for external markets	Other (please indicate)
% of waste disposed by this method				
Associated cost $$$				

Management of Filter Earth Waste

Diatomaceous Earth

What was the estimated amount of diatomaceous earth waste produced by your winery for the last 12 months (in tonnes or kilograms or estimate in volume)?

……...

Please complete the following table to detail your current disposal methods for diatomaceous earth and perlite waste.

Disposal Method	Tartaric Acid Extraction	Landfill Disposal	Other (please indicate)
% of waste disposed by this method			
Associated cost $$$			

Perlite

What was the estimated amount perlite waste produced by your winery for the last 12 months (in tonnes or kilograms or estimate in volume)?

……...

Please complete the following table to detail your current disposal methods for diatomaceous earth and perlite waste.

Disposal Method	Tartaric Acid Extraction	Landfill Disposal	Other (please indicate)
% of waste disposed by this method			
Associated cost $$$			

Bentonite Clay

What was the estimated amount of bentonite clay waste produced by your winery for the last 12 months (in tonnes or kilograms or estimate in volume)?

……..

Please complete the following table to detail your current disposal methods for bentonite clay waste.

Disposal Method	Tartaric Acid Extraction	Landfill Disposal	Other (please indicate)
% of waste disposed by this method			
Associated cost $$$			

Thank you for your participation in this survey.

Draft Greenhouse Gas Abatement Generic Action Plans

Action	Estimated CO_2–e savings (Tonnes p.a.)	Priority
A. Plant Expansion		
Ensure that energy efficiency design is incorporated into plant extensions taking into consideration location of plant and associated pipe work, thermal requirements, optimal use of natural light, modular design and the use of gravity.		
Ensure that new pipe work (wine transfer, water, air and refrigeration/brine pipes) are designed to reduce pumping loads by minimising pipe length, avoiding unnecessary bends, ensuring pipe interiors are smooth and larger diameter pipes are installed.		
Ensure that life cycle analysis is applied when purchasing new equipment and machinery (eg ensure that energy and maintenance costs are evaluated over the lifetime of a new products).		
Investigate the feasibility of utilising energy efficient and variable speed drive (VSD) pumps.		
Ensure that appropriate insulation is installed for buildings, boilers, and refrigeration lines.		
Investigate the thermal balance between plant items with a focus on utilising waste heat (heat recovery) from refrigeration plants and generating electricity through cogeneration.		
Investigate the feasibility of supplementing energy requirements through renewable forms of energy such as solar hot water panels and generation opportunities through biomass (eg waste marc), geothermal, wind turbines, photovoltaics and solar-thermal devices.		
Investigate the feasibility of purchasing air conditioning systems that incorporate an ambient temperature cycle (eg when suitable the AC will utilise the external ambient temperature).		
B. Refrigeration		
Ensure that refrigeration systems are regularly maintained and serviced (eg seals and oil maintenance) making sure that condenser coils and fins are clean and air can circulate freely.		
Ensure appropriate insulation for refrigeration/brine lines and tank farms and instigate an insulation maintenance program.		
Investigate ways to reduce grape temperatures prior to crushing.		
Investigate ways that head pressure of compressors can be raised and condensing temperatures can be reduced.		
Ensure that condensers of refrigeration units are appropriately sized.		
Ensure that tank farms and refrigeration units are shaded from solar radiation.		
Ensure that air trapped in refrigeration brine lines is regularly purged.		

	Investigate the feasibility of decentralising refrigeration systems and utilising split systems (eg separate systems for temperature regulation and cold stabilisation).		
	Investigate the feasibility of utilising a more efficient cooling medium than brine such as ice slurry or carbon dioxide.		
	Investigate the feasibility over chilling over night and reducing refrigeration loads during the day.		
	Investigate the feasibility of recapturing waste heat from refrigeration units through cogeneration, de-superheaters and 'pipe in pipe' technology.		
	Investigate opportunities for avoiding the use of electricity during peak demands (demand shift management).		
C. Motors, Pumps & Air Compression			
	Ensure that full-life cycle costs (purchase, maintenance and energy consumption costs) are applied in the procurement of new pumps and equipment.		
	Replace fixed speed motors with variable speed drives.		
	Ensure that pipework (wine transfer, water, air and refrigeration/brine pipes) are designed to reduce pumping loads by minimising pipe length, avoiding unnecessary bends, ensuring pipe interiors are smooth and larger diameter pipes are installed.		
	Implement a air compressor maintenance program which focuses on identifying and repairing leaks in compressor lines and connections.		
D. Boilers			
	Ensure boilers are routinely maintained ensuring that temperature controls, air/fuel mixtures, and the rate of combustion are set at optimal efficiency.		
	Utilise fuels that are less greenhouse intensive per unit of energy such as LPG & natural gas.		
	Investigate the feasibility of installing economisers in boilers such as utilising wasted energy fro the flue to pre-heat water and air.		
	Investigate the feasibility of utilising solar hot water to pre-heat water.		
E. Office & Buildings			
	Ensure that all buildings are insulated.		
	Ensure that heat, ventilation and air conditioning systems (HVAC) are adequately maintained and serviced regularly.		
	Establish shading overhangs for north-facing windows to provide protection from the summer sun while allowing the winter sun to penetrate the building.		
	Ensure that new office equipment has the highest Energy Star rating (eg 5 or 6 stars) and where available, engage energy conservation modes on Energy Star compliant equipment.		

	Ensure that Energy Star compliant equipment has been engaged (eg sleep mode on computer monitors, fax machines, and photocopies.		
	Shut down all non-essential equipment when office is unoccupied.		
F. Lighting			
	Progressively update to high efficient lights and fittings such as tri-phosphor florescent tubes with low-watt ballasts, electronic ballasts or light emitting diode (LED) lighting.		
	Evaluate the feasibility of installing intelligent controls (eg. daylight/occupancy sensing, one shot timers) and task-based lighting where appropriate.		
	Ensure lamps and reflectors are cleaned regularly.		
	Maximise the use of natural lighting by installing solar tubes and skylights.		
	Investigate the feasibility of utilising external solar lights.		
G. Waste Management			
	Investigate the feasibility of on-site composting of vineyard green waste and grape marc.		
	Participate in a recycling program for paper and cardboard and if possible aluminium, tin and plastics.		
	Investigate the feasibility of supplementing energy use (electricity and/or heat) through biomass energy recovery (anaerobic digestion, incineration, gasification or pyrolysis).		
	Ensure that wastewater management supports aerobic decomposition through applying to woodlot, use of aeration, flocculation, and/or biological treatment.		
H. Land-use			
	Utilise composting and mulch on vineyards to enhance soil carbon and conserve water.		
	Encourage the use of cover crops (especially nitrogen fixing grasses) in vineyards to enhance soil carbon, and reduce the application of artificial fertilisers.		
	Employ minimum tillage practices in the vineyards.		
	Establish vegetation buffers in vineyards and wineries with a focus on indigenous species. Investigate opportunities for planting additional trees and shrubs with particular attention to providing shade for buildings and car parks.		
I. Transport			
	Ensure that greenhouse gas emissions are considered when engaging transport services (eg favour CNG powered vehicles for heavy truck transport)		
	Match vehicles to tasks. Include consideration of fuel consumption when selecting leased vehicles.		

	Investigate the feasibility of utilising alternative, less greenhouse intensive fuels with transport vehicles such as LPG, Compressed Natural Gas or hybrid electric.		
	Ensure all vehicles are regularly serviced and maintained to ensure optimal fuel efficiency.		
	Actively work with suppliers and transport consultants to optimise transport requirements through schedule management.		
J. System Management			
	Ensure that greenhouse management is addressed in staff meetings and information session.		
	Integrate environmental issues (including greenhouse) into staff training and induction courses.		
	Develop a corporate/business environmental policy, objectives and action plan and monitor the progress of environmental improvements.		
	Establish an environmental committee to coordinate environmental and greenhouse action throughout the organisation.		
	Make key staff accountable for energy, waste and land-use management.		
	Provide monthly/bimonthly/quarterly/annual reports on energy performance to senior management.		
	In conjunction with industry bodies, develop suitable indicators to assist in the reporting of energy performance data.		
	Install intermediate metering as required to capture energy costs for each business unit or product line.		
	Examine ways of 'greening' the supply chain such as integrating environmental and greenhouse performance within contract briefs.		
	Integrate environmental reports (including greenhouse gas emissions) into the organisations annual reports.		
	Educate staff on reducing greenhouse gas emissions in their homes.		

SA Wine & Brandy

Swamp Day Tour

21 July 2001

The Swamp Day tour was an initiative of the Mount Lofty Ranges (MLR) Southern Emu-Wren Recovery Program based at the Conservation Council of South Australia. As part of the Recovery Program's awareness raising activities, a bus tour for the wine industry was organised to experience the swamps and wetlands of the Fleurieu Peninsula. SA Wine & Brandy provided assistance by promoting the tour and providing key industry contacts. The tour was well represented by the local grape and wine industry personnel.



The Mt Lofty Ranges Southern Emu-wren (*Stipiturus malachurus intermedius*) is a small, shy bird found in wet and/or coastal heath vegetation on the Fleurieu Peninsula south of Adelaide. The long stick-like tail carried by the Emu-wren is comprised of only six tail-feathers, resembling emu feathers. This poor flier is unable to cross most areas of cleared land that separate patches of wet heath (swamps). Its body length is 60-70mm and tail length 90-120mm. The male has an upper body, which is grey-brown in colour with black striations, a rufous-tan crown, the remainder being buff-coloured with throat, upper breast and brow pale sky-blue, and whiter belly. The female is as male but with throat, breast and brow all buff-coloured and prominent striations on upper body (Internet Reference: Mount Lofty Ranges Southern Emu-wren Profile Sheet[http://ecofriends.nccnsw.org.au/member/tsn/context/profiles/162.html]).

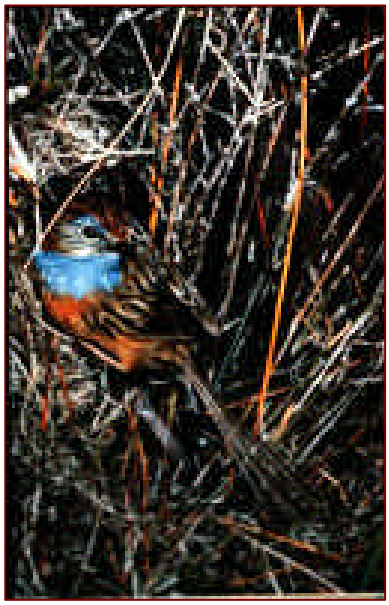
The tour commenced with a presentation at Mt Compass Area School, which emphasised the ecological importance of swamp and wetland habitat. The presentation discussed the geology, hydrology and biology associated with the swamps of the Fluereiu Peninsula and made special mention of the conservation status MLR Southern Emu-wren. With population estimates believed to be as low as 500, the MLR Southern Emu-wren is considered Critically Endangered on the National Threatened Species List.

Fact sheets and conservation information was distributed and participants could also view plant specimens. Industry participants were interested in how to best manage swamps on their property so that ecological processes are optimised and threatened species are preserved. The Recovery Program is currently developing swamp management guidelines to assist landholders in managing swamps and a draft release for the guidelines is due in November 2001.

After a light morning tea at the school, it was a short walk across the road to the Mt Compass swamp. A guided tour through the boardwalks of the swamp provided participants with a closeup examination of swamp vegetation. The bus tour then proceeded to Currency Creek, observing several swamps along the way. It was clear that many swamp environments have been significantly degraded.

Currency Creek Winery provided a venue for several presentations and lunch. Robyn Sutherland from Nature Conservation Society provided an outline of the species currently under threat in the region. There are 84 native plant species that are of state conservation significance and 96 species that have a regional conservation status. Just over half of these plants come from swamp or wetland habitat. Threatened animal species include two reptiles, one amphibian, two mammals and five birds (including the MLR Southern Emu-wren). These swamps are severely threatened by vegetation clearance, altered hydrology and catchment processes, inappropriate management, exotic species, nutrient imbalance, isolation and fragmentation.

Tour participants enjoyed an excellent lunch overlooking vineyards and in the distance, the heritage-listed Black Swamp. During lunch tour participants had the opportunity to discuss conservation issues with presenters and conservation experts. The presentation following lunch focused on the multiple benefits associated maintaining healthy swamps. Swamps provide habitat for natural species that predate many vineyard pest species and also reduces the risk of frost damage to crops. The tour concluded with the trip back to Mt Compass.



The Swamp Day tour was clearly a great success. The presentations from conservation professionals provided good balance between theory and practical information which was then reinforced in the field by experiencing swamp habitat first-hand. As an industry that is committed to sustainable development, we keenly await the release of the swamp management guidelines. SA Wine & Brandy, wish to thank the MLR Southern Emu-wren Recovery Program for an informative and comprehensive tour and look forward to working together again in the future.

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Photographs courtesy of the Mount Lofty Ranges Southern Emu-wren Recovery Program.

South Australian Wine and Brandy Industry Association



National Packaging Covenant Mentor Program: 1st Year Action Plan 2002/2003 (FY)

Report Contents

- Summary
  - Industry Context
    - Commitment to the Environment
      - Aims of Program
      - Strategy 1: Recruitment
    - Strategy 2: Winery Action
  - Strategy 3: Support Program
- Milestones

Please Note:
The intent of this electronic action plan is to reduce paper use. Please do not print this report unless absolutely necessary.

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April 2002

Prepared by Keith Jones, Dr Jeanette Chapman & Linda Bowes

Print Plan

GREENHOUSE CHALLENGE MEMBER

Summary

Aim 1: To enhance the sustainable use of wine packaging by greater incorporation of cleaner production, eco-efficiency and product stewardship principles.		**Aim 2:** To further improve customer participation in recycling of wine packaging.
Strategy 1: Recruit SA Wine & Brandy members into the NPC mentor program.	**Strategy 2:** Develop a NPC Mentor support program which assists winery members adopt more sustainable packaging systems – 1st Year Packaging Use Profile.	**Strategy 3:** Establish support links and communication networks with relevant industry, community and government programs.
1.1 Develop a NPC Information Kit highlighting the Mentor program.	2.1 Identify the type (including brands) and quantity of wine industry packaging found in the waste/recycling stream – utilise the results JRG SA Packaging Waste Study.	3.1 Participate in the South Australian Jurisdictional Recycling Group.
1.2 Disseminate NPC Information Kits to the wine industry in South Australia.	2.2 Run a suite of workshops with mentor members to develop a packaging audit methodology and template.	3.2 Work collaboratively with other wine industry programs and major wine companies.
1.3 Publicise the Mentor program through wine industry journals and magazines, forums, seminars and conferences.	2.3 Assist mentor members to conduct packaging audits identifying: type and amount of packaging materials, and supplier contact details for each material type.	3.3 Liaise with relevant government bodies, industry associations (eg Australian Wine Industry Suppliers Association) and research organisations.
1.4 Develop a NPC Mentor Program web-page.	2.4 Aggregate and interpret the results of audits and produce a combined Wine Packaging Profile report with recommendations.	3.4 Establish a forum with wine industry packaging suppliers and manufacturers to address packaging issues related to the NPC.

Industry Context

The South Australian wine industry is a leading contributor to the economic success of the state, which gives it a higher public profile compared with most other of the state's industries. As a result, there is a general perception that the wine industry should show leadership in participation of environmental initiatives such as the National Packaging Covenant.

While SA is the 'production home' of the four major corporate winery businesses, most wineries by numbers are small family centered operations. These small companies play an equally important role in the success of the South Australian wine industry. Association of 'fine wine with fine food' means that almost all the state's wineries with their own brands sell product interstate, therefore are required to sign to the National Packaging Covenant regardless of wine sales in South Australia.

This action plan was developed for its member wineries by the South Australia Wine and Brandy Industry Association Incorporated (trading as SA Wine & Brandy) which registered with the NPC as a mentor. Therefore, this report is submitted on behalf of SA Wine & Brandy's Mentor Members to satisfy the requirements of the National Packaging Covenant. To view a list of Mentor Members please access our website.

The scope of the plan is externally sold product, which represents the core business activity of the wine industry. Within the packaging chain the wine industry represents a product filler and marketer. Packaging waste associated with onsite winery and ancillary developments primarily cellar door sales and restaurants, will be covered in a future joint action plan.

Commitment to the Environment

SA Wine & Brandy strongly encourages its membership to maximise environmental improvement and is committed to assisting its members achieve best practice environmental systems and practices.

The association has been the key body responsible for the development of industry environment initiatives such as:

- Produced "Cleaner Production in the Wine Industry", a manual to assist members minimise water use and maximise its reuse;
- Established an industry standing committee on environmental issues;
- Developed (in conjunction with SA EPA) an Environmental Code of Practice for Wineries and Distilleries;
- Developed a (draft) audit tool for wineries to implement the Code of Practice
- Conducted industry workshops on the code and the National Pollutant Inventory;
- Developed (in conjunction with various SA government agencies) Planning Guidelines for Wineries and Distilleries (currently at first draft stage);
- Established (in partnership with Energy Efficiency Best Practice, DITR) the "Wineries of the Future" program;
- Developed the National Wine Industry Environment Strategy.

The association has a dedicated environment program manager on staff and provides the focal point for wine industry technical advice and support. The association is also a member of the Greenhouse Challenge, runs a Greenhouse Allies Partners Program, is a member of the Conservation Council of South Australia and holds a biannual 2-day national environmental conference & exhibition to keep the wine industry informed of issues and to facilitate the transfer of new technologies and initiatives.

Aims of the Program

SA Wine & Brandy's NPC Mentor Program promotes a staged approach to environmental management which builds upon each years' activities. The first year of the program will focus on developing a wine industry packaging profile. This involves conducting packaging materials audits, identifying the amount and type of discarded wine packaging found in the waste and recycling streams and a list of actions to address priority areas. The second year will address implementation of those actions which involves working with wine industry stakeholders (especially suppliers) to improve the recyclability of packaging materials. The third year will introduce a continual improvement process that assesses current progress.

Hence, the development, implementation and review aspects of a management system is supported over the first three years of the project.

While the strategies and actions may change during the three year period, the aims of the SA Wine & Brandy's Mentor Program will remain constant. The aims of the Mentor Program are:

Aim 1: To enhance the sustainable use of wine packaging by greater incorporation of cleaner production, eco-efficiency and product stewardship principles.

Sustainable use addresses the long-term environmental, social and economic aspects of packaging use. Examining the life cycle of packaging materials (eg cradle-to-grave) is an important tool in gaining a more accurate assessment of environmental impact.

Product stewardship relates to the environmental responsibility over the entire life cycle of packaging materials and places the onus on each participate within the supply chain, to minimise that impact.

Cleaner production and **eco-efficiency** advocate a hierarchical approach to problem solving (ie avoid, minimise, reuse and recycle) that focuses on the source, rather than an end-of-pipe solution. Often with this approach financial benefits are realised through using resources more efficiently.

Aim 2: To further improve customer participation in recycling of wine packaging.

Recycling participation rates have increased in both the residential and business sectors. Existing information from government waste and kerbside recycling audits will be used to identify the priority areas, possible recycling barriers, information gaps and assist in formulating corrective actions.

Strategy 1: Recruitment

Strategy 1: Recruit SA Wine & Brandy members into the NPC mentor program.	Indicator	Number of NPC Mentor members
	Target	20 members in the 1st year

Description:
SA Wine & Brandy will initiate a recruitment program for the NPC Mentor Program. Recruitment will focus on medium and small organisations and will provide information on the NPC, NEPM and SA Wine & Brandy's role as NPC Mentor. SA Wine & Brandy will promote the Mentor Program through periodical direct mail-outs and the association's newsletter and website.

Actions	Outcomes	Timeframe
1.1 Develop a NPC Information Kit highlighting the Mentor program.	NPC Information kit – hard & electronic versions	Since Dec 2001
1.2 Disseminate NPC Information Kits to the wine industry in South Australia.	2 Direct mail-outs/email. Electronic access.	Jul 2002
1.3 Publicise the Mentor Program through wine industry journals and magazines, forums, seminars and conferences.	Aim to publicise one article in industry wine journal. Focus presentations at wine industry regional meetings.	Jun 2003
1.4 Develop a NPC Mentor Program web-page.	Web-based support to Mentor members.	Jul 2002

Strategy 2: Winery Action

Strategy 2: Develop a NPC Mentor support program which assists winery members adopt more sustainable packaging systems – 1st Year Packaging Use Profile.	Indicator	Participation rate of members
	Target	Wine Packaging Profile Report

Description:
The first year of the Mentor program will focus on acquiring packaging data from mentor members and the community(waste & recycling streams). SA Wine & Brandy will facilitate a series of workshops with members to develop an auditing methodology and support tools (eg templates). Additional information will be sourced to identify the amount, type and brands of wine packaging found in the waste and recycling streams. This information will be collated and analysed to produce a Wine Packaging Profile Report which will include actions that will address priority areas.

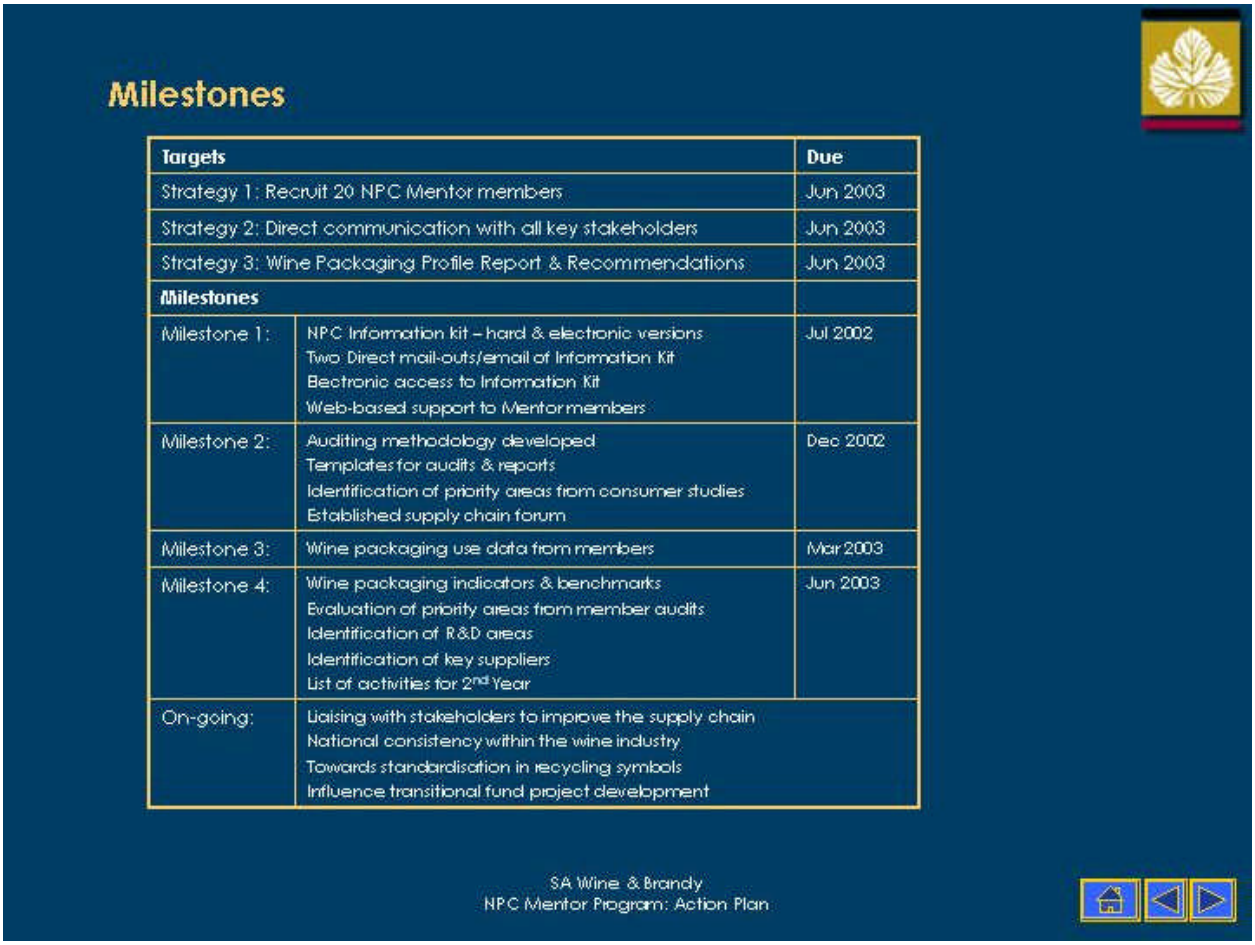
Actions	Outcomes	Timeframe
2.1 Identify the type (including brands) and quantity of wine industry packaging found in the waste/recycling stream – utilise the results JRG SA Packaging Waste Study.	Identification of priority areas	Oct 2002
2.2 Run a suite of workshops with mentor members to develop a packaging audit methodology and template.	Auditing methodology Templates for audits & reports Identify key suppliers	Dec 2002
2.3 Assist mentor members to conduct packaging audits identifying: type and amount of packaging materials, and supplier contact details for each material type.	Packaging use data	Mar 2003
2.4 Aggregate and interpret the results of audits and produce a combined Wine Packaging Profile report with recommendations.	Indicators & benchmarks Evaluation of priority areas Priority actions for 2nd Year	Jun 2003

Strategy 3: Support Program

Strategy 3: Establish support links and communication networks with relevant industry, community and government programs.	Indicator	Participation rate of stakeholders
	Target	Direct communication with all key stakeholders

Description:
SA Wine & Brandy recognises that the implementation of NPC goals will require collaboration with wine industry stakeholders. Establishing a forum with industry packaging suppliers and manufacturers will provide a mechanism to collectively address the environmental issues associated with wine packaging. There are also other important stakeholders such as various government bodies, industry and research organisations.

Actions	Outcomes	Timeframe
3.1 Participate in the South Australian Jurisdictional Recycling Group.	Represent wine industry. Influence in transitional fund project development.	Since Mar 2002
3.2 Work collaboratively with other wine industry programs and major wine companies.	National consistency. Towards standardisation in recycling symbols.	Jun 2003
3.3 Liaise with relevant government bodies, industry associations (eg Australian Wine Industry Suppliers Association) and research organisations.	Partnership approach. Better supply chain mgt. Identify R&D areas.	Jun 2003
3.4 Establish a forum with wine industry packaging suppliers and manufacturers to address packaging issues related to the NPC.	Better supply chain mgt. Identify R&D areas.	Dec 2002


Milestones
Targets
Due
Strategy 1: Recruit 20 NPC Mentor members
Jun 2003
Strategy 2: Direct communication with all key stakeholders
Jun 2003
Strategy 3: Wine Packaging Profile Report & Recommendations
Jun 2003
Milestones
Milestone 1:
NPC Information kit – hard & electronic versions
Two Direct mail-outs/email of Information Kit
Electronic access to Information Kit
Web-based support to Mentor members
Jul 2002
Milestone 2:
Auditing methodology developed
Templates for audits & reports
Identification of priority areas from consumer studies
Established supply chain forum
Dec 2002
Milestone 3:
Wine packaging use data from members
Mar 2003
Milestone 4:
Wine packaging indicators & benchmarks
Evaluation of priority areas from member audits
Identification of R&D areas
Identification of key suppliers
List of activities for 2nd Year
Jun 2003
On-going:
Liaising with stakeholders to improve the supply chain
National consistency within the wine industry
Towards standardisation in recycling symbols
Influence transitional fund project development
SA Wine & Brandy
NPC Mentor Program: Action Plan

Appendix 6: Budget