Sustainability

Winery Engineering Conference
24 June 2009

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Agenda

1. Tarac background
2. Services
3. Products
4. Environment
5. Tarac Sustainability
6. REAP project
7. Summary

Vital statistics

- Established in 1930
- Employees ~60 permanent + 20 casuals through vintage
- 4 production sites in Australia
  - Nuriootpa (x2), Berri & Griffith

Production Sites

Nuriootpa

Head Office

Nuriootpa

Distillery

Berri

Griffith

Services

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Services

- **Winery waste processing:**

  (grape marc, filter cake, wine, waste water, tank washings, etc)

  - Approx 130,000 T of grape marc
  - > 55 million litres of liquid waste
  - 7,000 T of solid waste

- **Distillation services:**

  (alcohol reduction, wine concentration, etc)

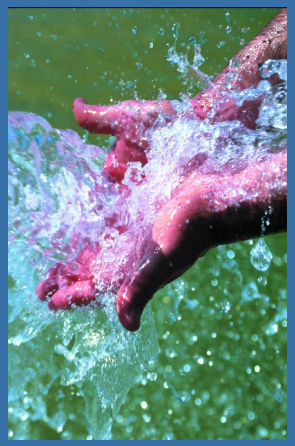
- **Waste water treatment**

Products

GrapEX

OakEX™

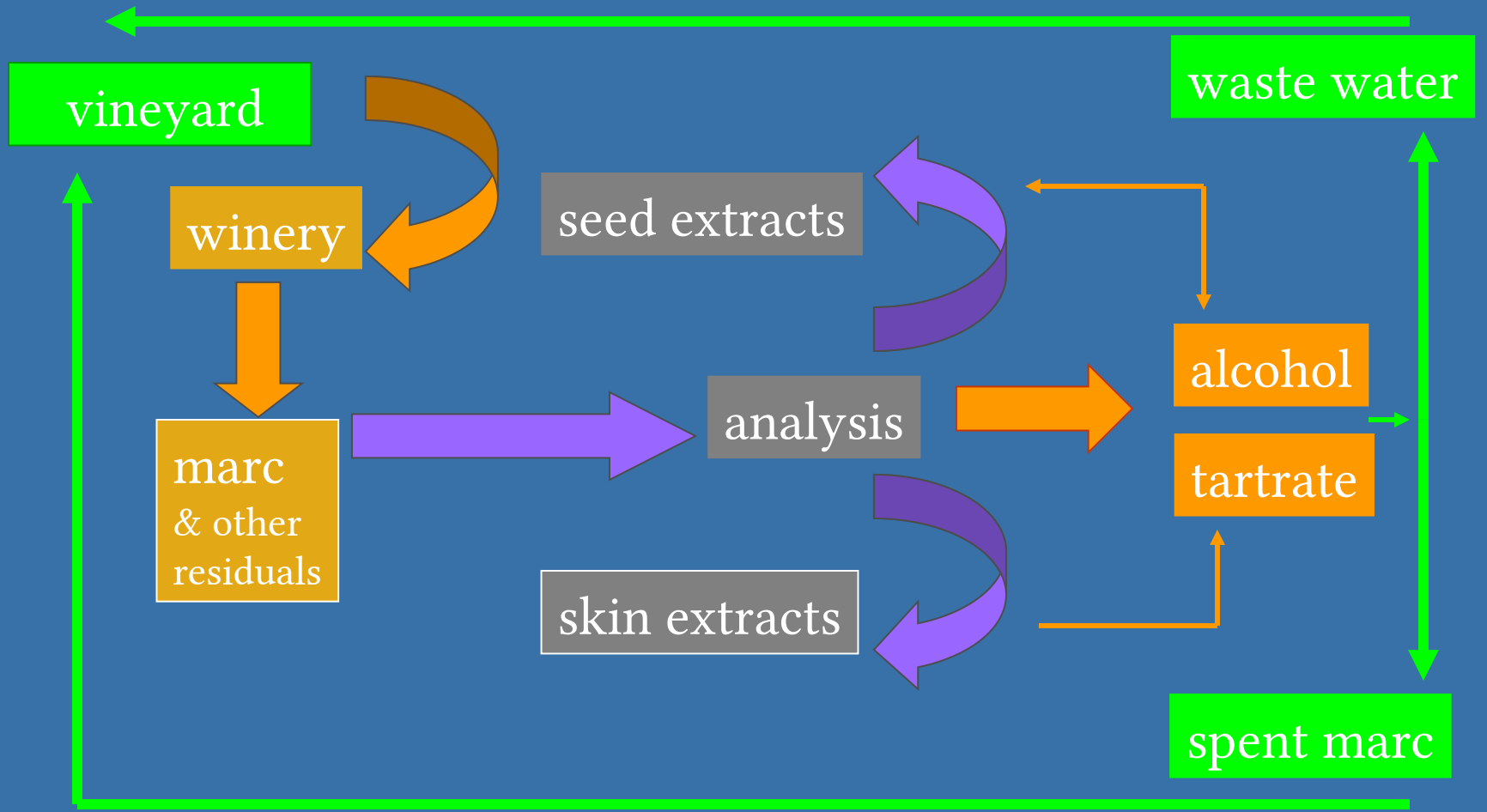
Vinlife



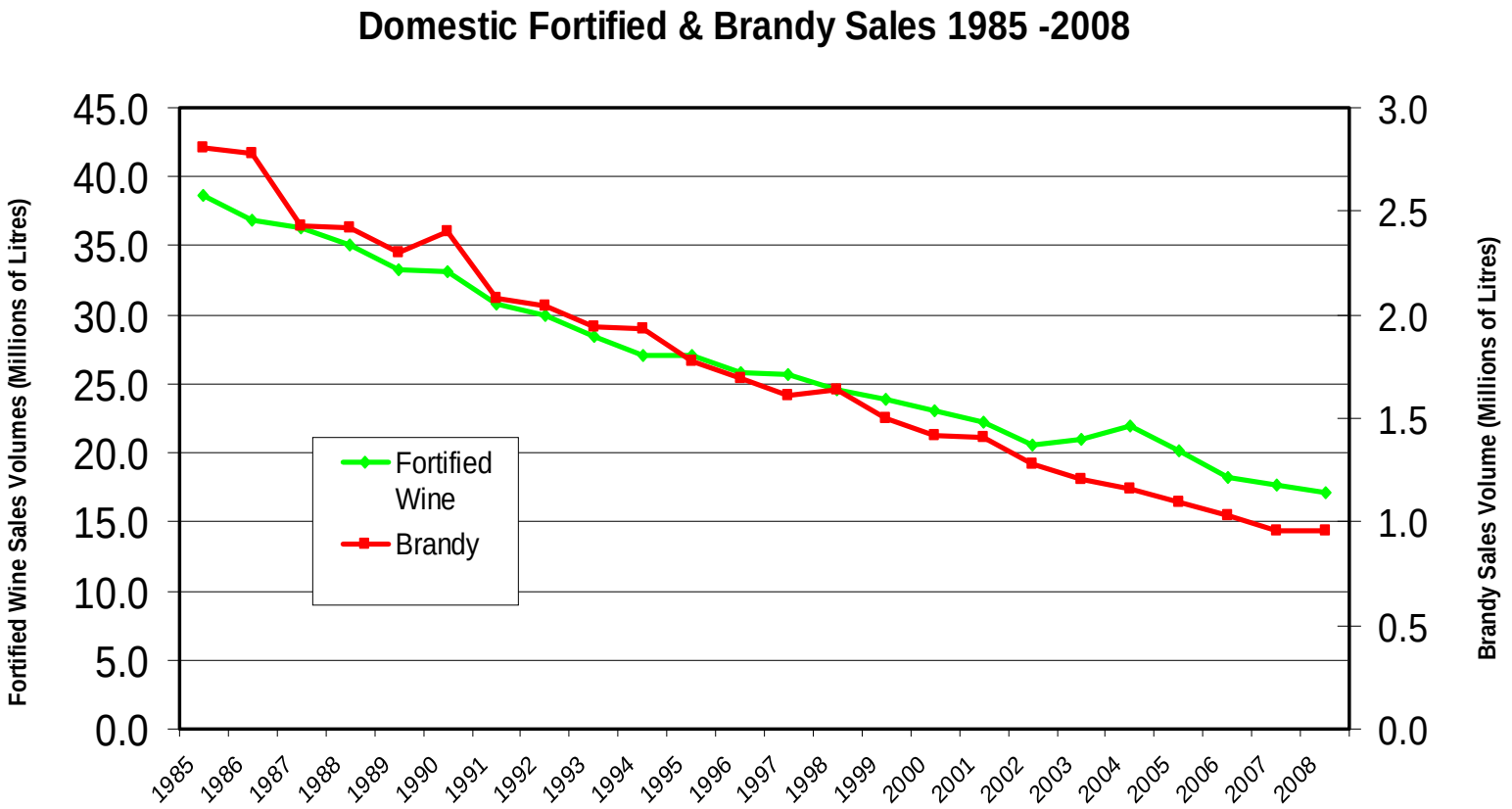
Products

- **Grape Alcohol** - Specialised spirit styles for fortified wine & matured brandy
- **Ethanol** – Industrial, fuel
- **Tartaric Acid** – 100% natural (L+)
- **GrapEX™** - skin & seed tannins
- **OakEX®** - natural oak products
- **Vinlife®** - skin & seed extracts for food ingredients
- **Spent marc** – pelletised stock feed, compost & fertilizer
- **'A Class' Irrigation water**

Tarac's operating model



Falling spirit demand



Source: Australian Wine & Brandy Corporation

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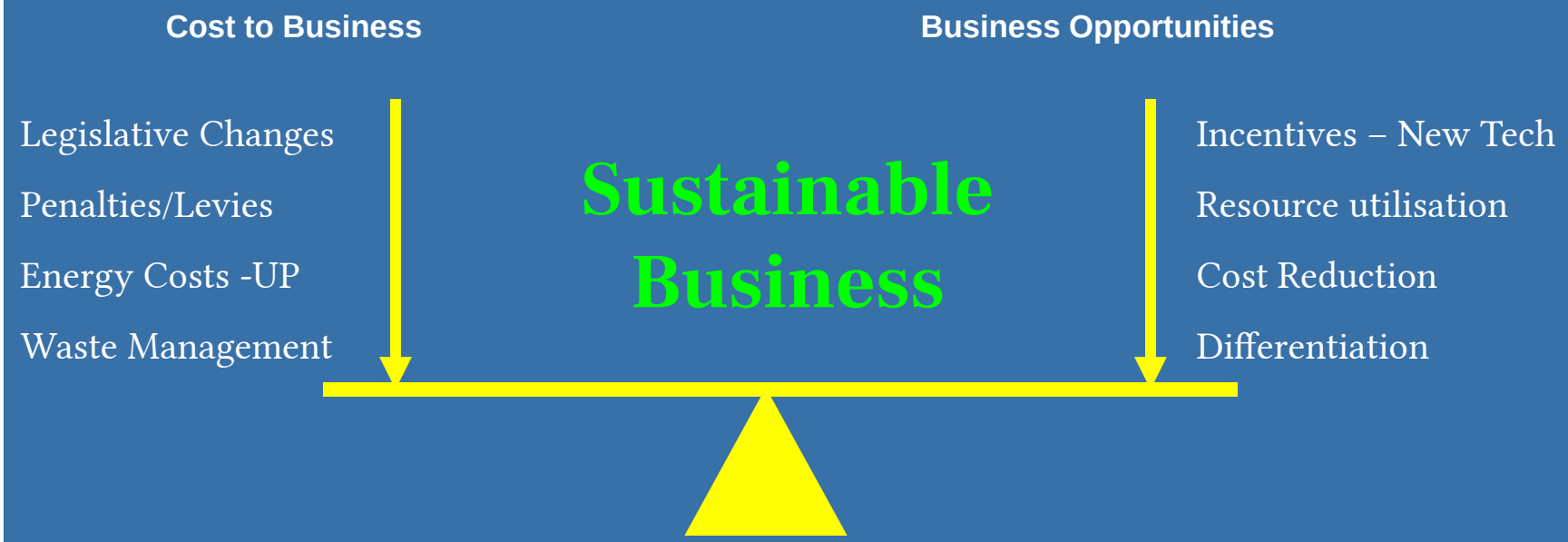
Sustainability

What is SUSTAINABILITY in Tarac's business?

- **Economic/Business**
- **Environmental**

- **The industry has wide ranging views on the balance between these potentially competing forces**

Sustainability



LOWEST COST SOLUTIONS PROVIDER

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Tarac's Role

- Delivery of value added products to the wine industry
- Developing export markets due to declining domestic market
- Providing environmentally sustainable services/solutions for the wine industry
- Lowest cost solution provider to sustain Tarac's business
- Delivering value to our customers

Tarac's Role

- Continual focus on costs
- Energy is a significant business cost
- Engaged in the Resource Efficiency Assistance Program (REAP)
  - Through the Business Sustainability Alliance (BSA), Zero Waste, SA Water, DTED & EPA

REAP

- REAP is a subsidised program facilitated by the SA Government via the BSA.
- Energetics were engaged by the BSA to conduct an Energy Audit
- Process included
  - Meetings with Key personnel
  - Site Audits
  - Comprehensive assessment of energy use
  - Identifying potential focus areas
  - Reporting on recommendations

Power Consumption

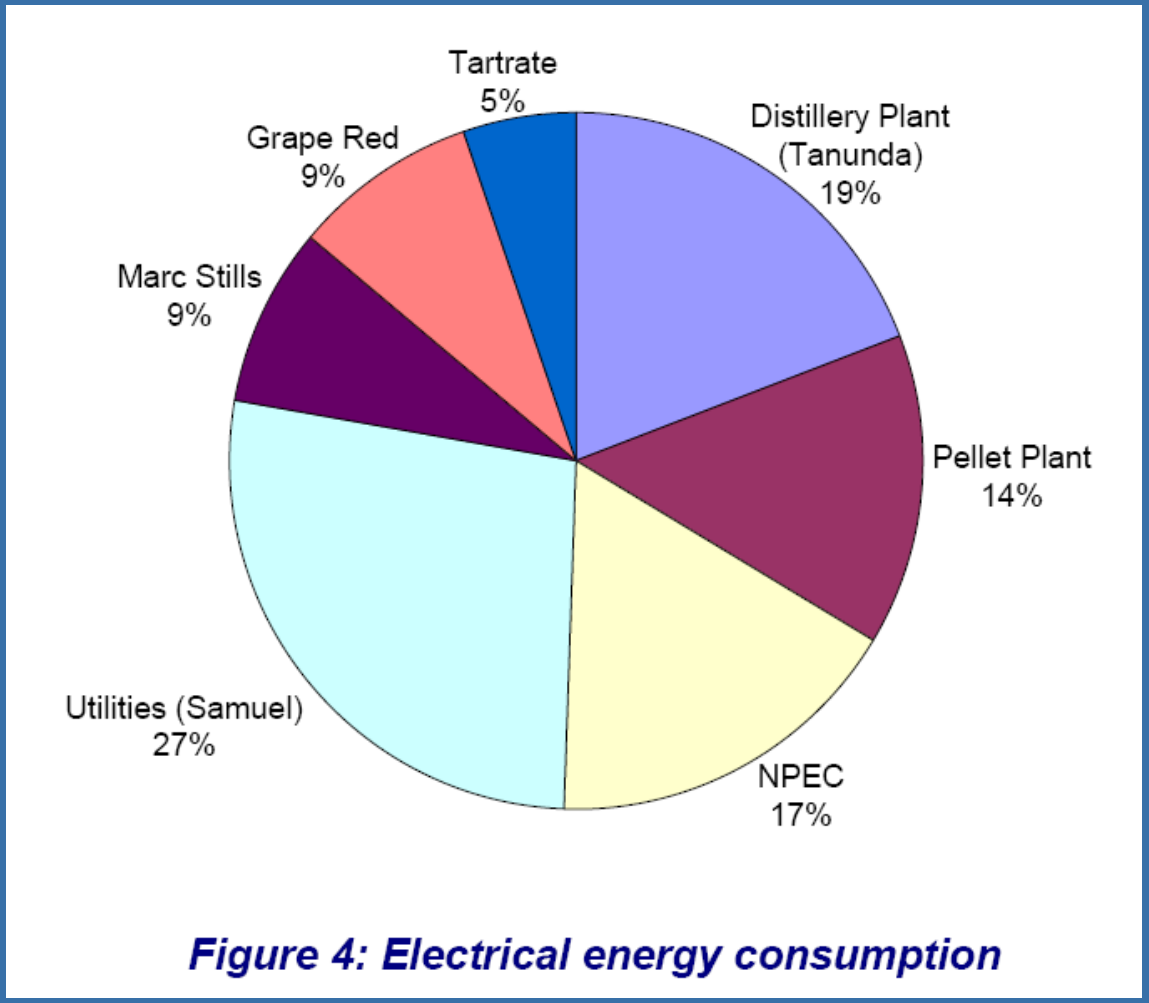

Figure 4: Electrical energy consumption

Gas Consumption

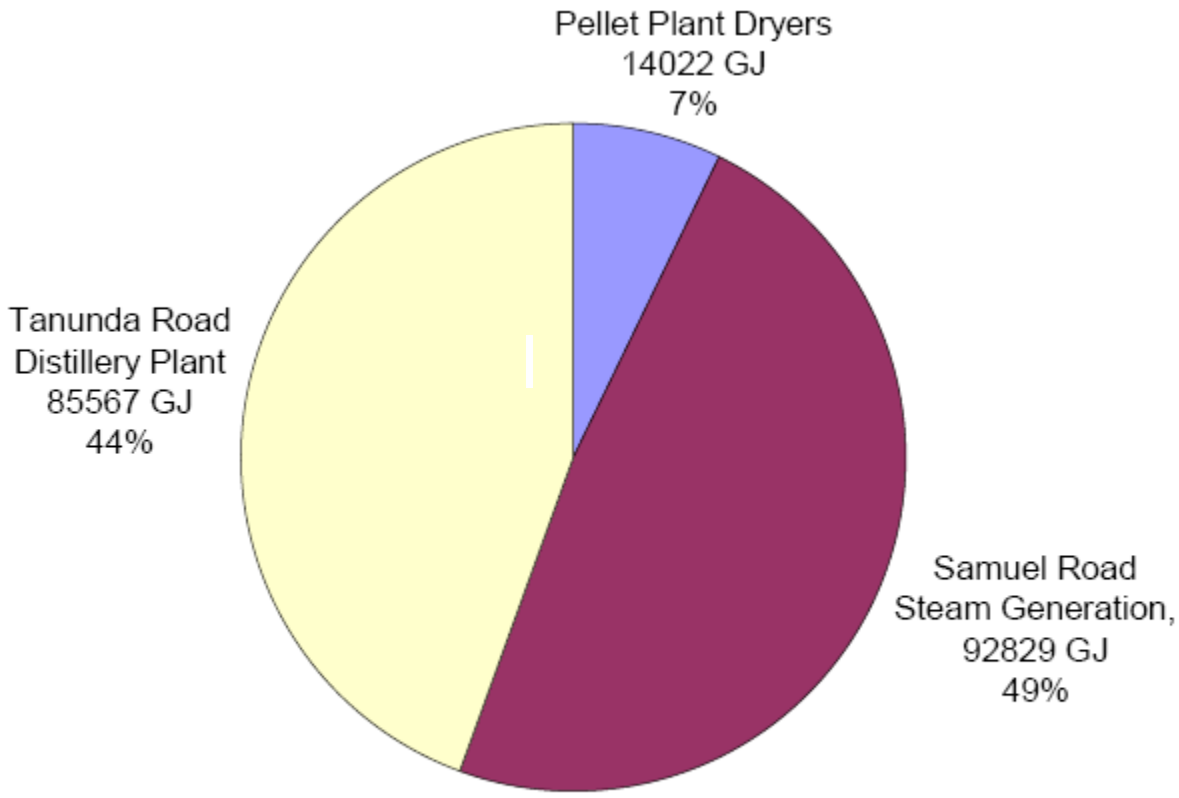

Figure 5: Natural Gas Consumption by Process Plant for 2007/08

Water Consumption

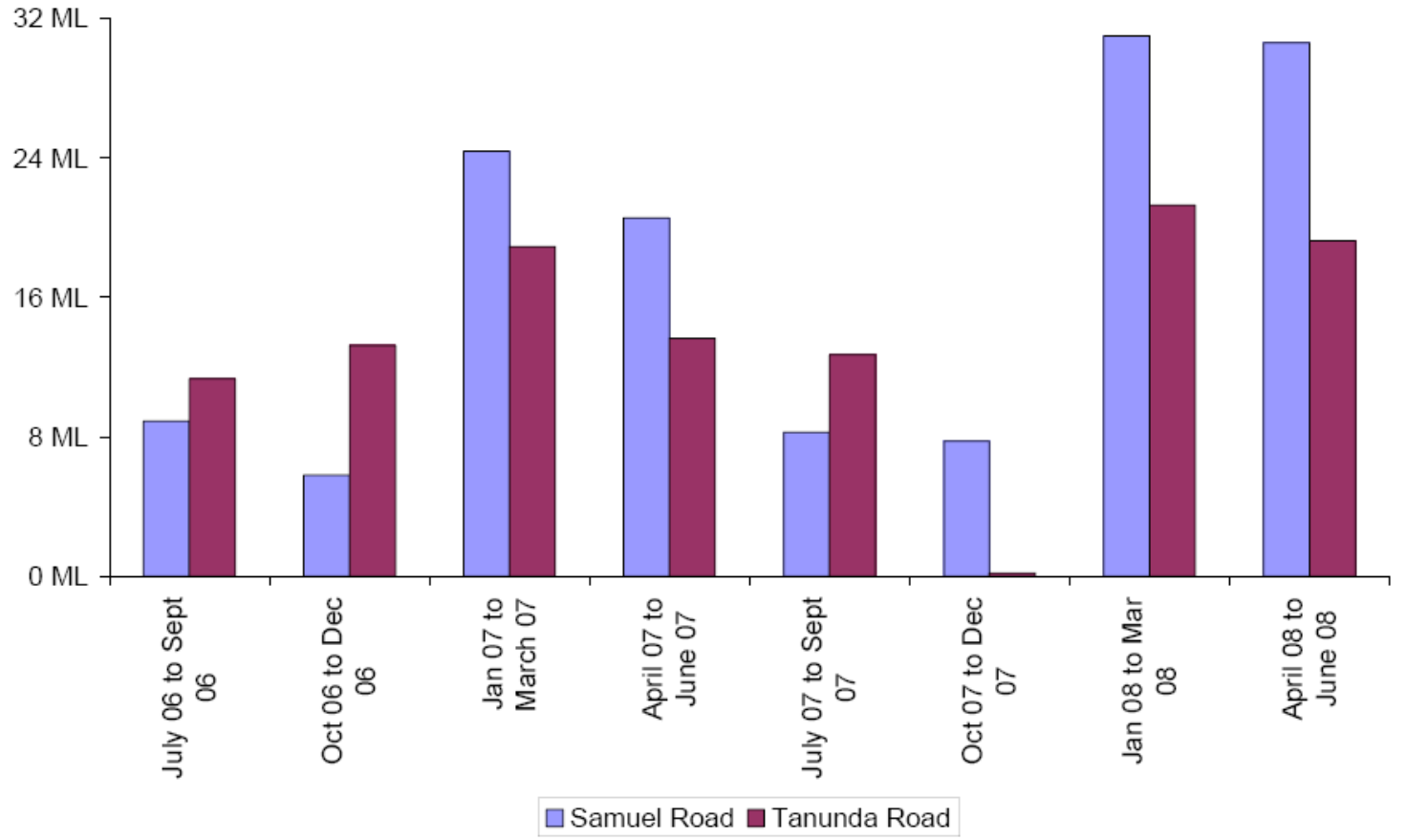

Figure 19: Mains water consumption

Treated Water Reuse

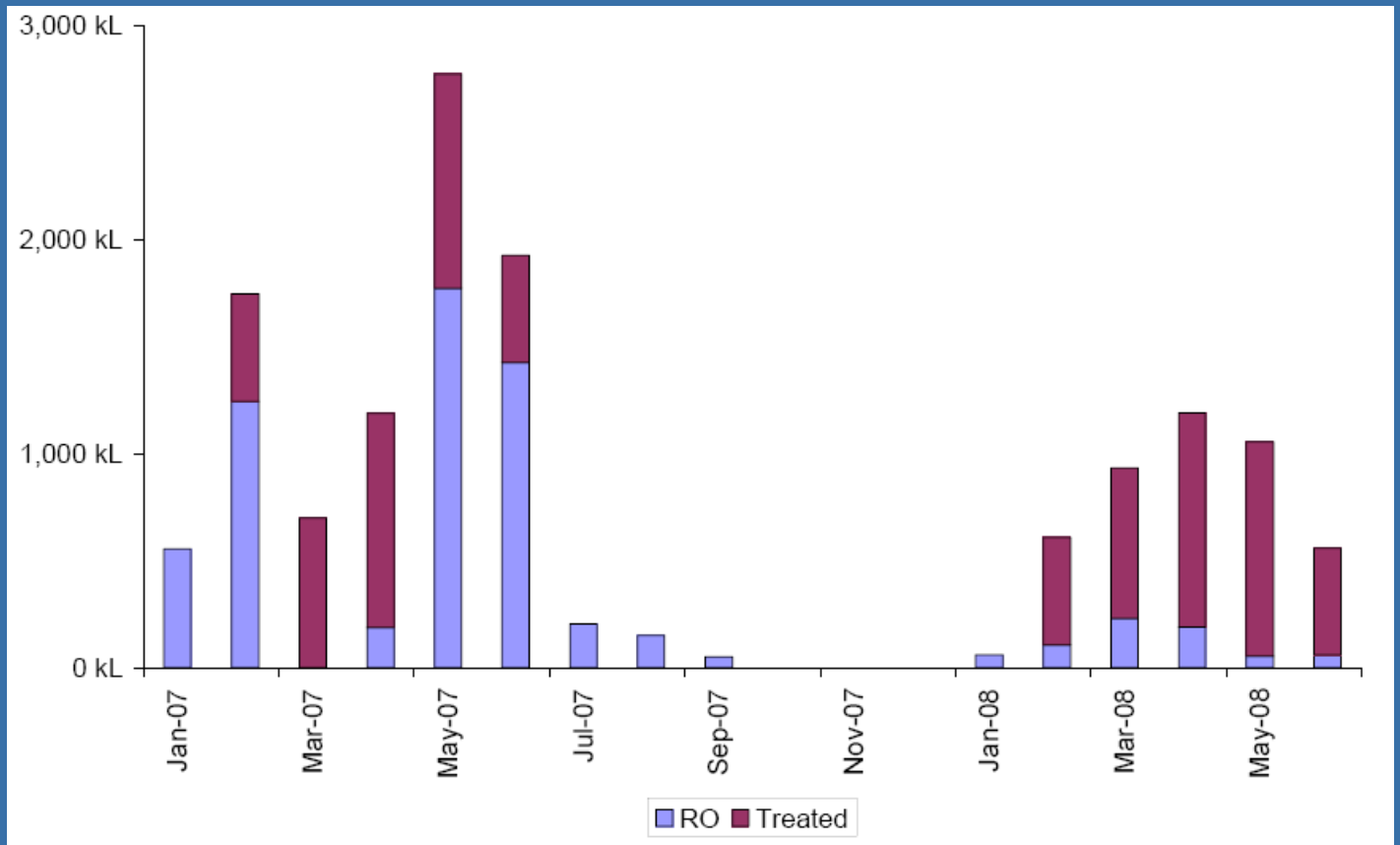

Figure 21: Treated and RO water consumption at the Samuel Road site

Energy Consumption & Emissions

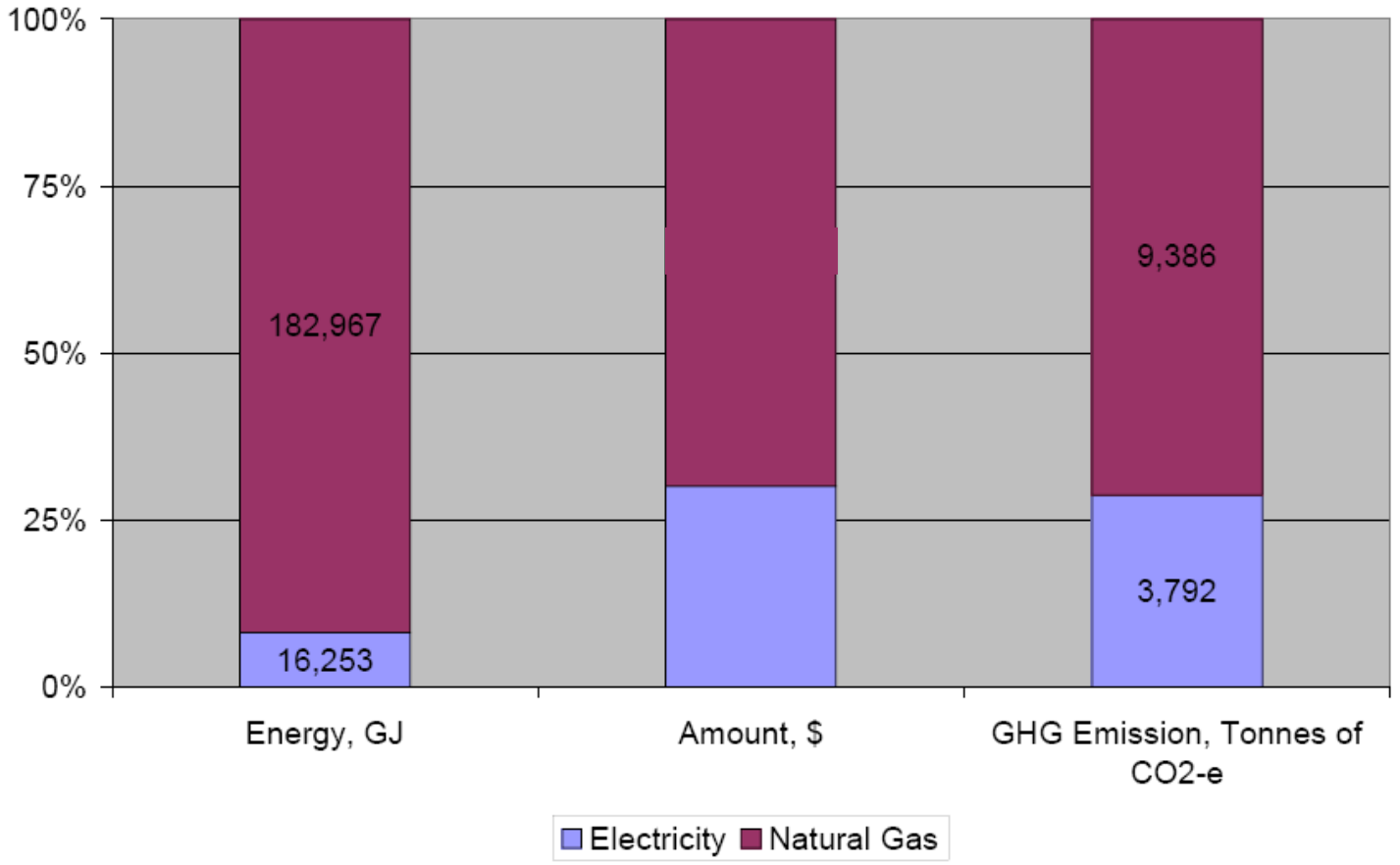

Figure 3: Annual energy consumption, energy cost and GHG emissions

Projects Identified

Estimation of cost savings

Energy Saving Measure	Area	Appx. Cost Savings	Appx. Cost of Investment	Simple Payback Period, Years
Improve power factor in distillery plant (Tanunda Road). Present average power factor is 0.85. Additional capacitor to be installed is 100 kVAr.	Tanunda Road	$1,700	$10,000	5.9
Operation of Pellet plant during off-peak period (the calculation is purely based on the electricity tariffs and do not consider additional cost for the operation of night shifts)	Pellet Plant	$45,000		
Installation of Variable speed drives for boiler feed water pumps and combustion air blowers	Samuel Road	$4,032	$11,800	2.9
Lighting (Lighting voltage controllers/ zonalised lighting controls/ energy efficient fittings)	All areas	$3,100	$15,000	4.8
Compressed air system (leakage/ decentralisation of compressors)	Samuel Road	$1,200	$5,000	4.2
Install Variable Speed Drives (VSD) for cooling tower fans	Samuel Road	$1,300	$9,800	7.5
Install VSD for tartrate plant pumps (throttled) or level controllers	Samuel Road - Tartrate Plant	$140	$1,600	11.4
Waste heat from boilers for Vapour Absorption Chillers (more information is required)				
Replace cooling water pumps with high efficiency pumps	Tanunda Road	$2,700	$24,000	8.9
Install VSD for wash column discharge pump. The pump flow is presently throttled.	Tanunda Road	$250	$1,500	6.0
Install VSD for the dryer of induced draft fan. Presently the flue gas is controlled by operating the dampers.	Samuel Road - Pellet Plant	$2,300	$9,000	3.9
Improve combustion efficiency of 10 MW boiler by trimming oxygen (reduce excess air level by controlling air for combustion). Combustion efficiency improvement is estimated at 5%	Samuel Road	$16,000	$5,000	0.3
Dedicate a separate boiler for Marc stills (more information is required)				
Insulate uninsulated flanges, valves and pipes in steam distribution system	Samuel and Tanunda Road	$700	$1,200	1.7
Dedicate a separate boiler for Waste water treatment plant	Waste water treatment plant	$3,500	$12,000	3.4
Use of biogas generated in waste water treatment plant	Waste water treatment plant			

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Next Steps

- Projects prioritised
- Conducted detailed feasibility
- Assessed potential assistance/grant programs
- Applied for Re-Tooling for Climate Change Grants
- Successful in gaining 30% funding for both projects.

Summary

- Long established company
- Business model has evolved into delivery of sustainability to the wine industry
- Balance between business/economic and environmental sustainability
- Lowest cost is king
- Focus on reducing costs that also have environmentally sustainable benefits.