

## SAWIA SECTOR AGREEMENT

10+ WAYS TO REDUCE YOUR ENVIRONMENTAL FOOTPRINT

USING RENEWABLE ENERGY - SOLAR PHOTOVOLTAICS

Cameron Ashmead (Elderton Wines)

Adelaide Convention Centre | 23 September 2010



1

## The plan today in 15 minutes

Elderton & Elderton's sustainability initiatives including solar

How solar works and what a winery should consider

Solar's 3 main advantages

- environmental sustainability
- financial sustainability
- social sustainability



2

## Elderton

Founded in 1982 by Neil & Lorraine Ashmead

Main estate vineyard located in Nuriootpa

Reputation based on premium shiraz & cabernet sauvignon

2003 the second generation of the Ashmead family, brothers: Allister & Cameron took management control



3

## Elderton's sustainability initiatives

One of the first wine companies to offset its greenhouse gas emissions with SA's Trees for Life, as well as re-engineering processes

Water Harvesting & Recycling in conjunction with a Waste Water Treatment plant

Increasing biodiversity into the vineyard with biodynamic programme and riverbank regeneration on the North Para River



4

"I'd put my money on the sun and solar energy. What a source of power! I hope we don't have to wait until oil and coal run out before we tackle that."

Thomas Edison (1931)



5

"Every day the earth receives an amount of solar energy equal to 30 years of world fossil fuel energy use."

Western Illinois University (2004)



6

## Solar Power Initiative (1)

Installed December 2007  
1.75 kW system at the Tasting Room in Nuriootpa



7

## Solar Power Initiative (2)

Installed September 2010  
30 kW system at the Winery in Nuriootpa



8

## How Solar Power works

- 1 Solar PV supply DC Power
- 2 An inverter changes DC power into AC power
- 3 A meter measures your electricity production and consumption
- 4 Consider advanced remote monitoring for detailed analysis



9

## What are the key considerations for the right system?

What do you want to achieve?

How much electricity do you use? What are your consumption patterns?

How much roof space do you have? Does it face north (ideally)?

How much are you willing to invest? Is there government support? Payback periods?



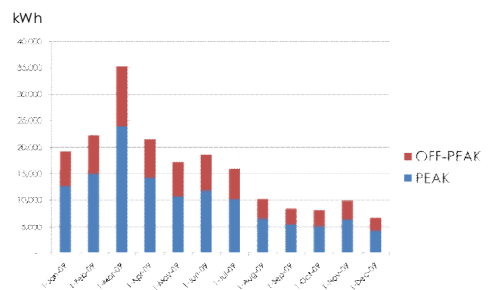
10

## Typical daily electricity consumption for a Winery (non-vintage)



11

## Energy use in Wineries



12

### What did Elderton want to achieve?

Elderton wanted at the time to offset its waste water system for the purposes of the Grant as well as generate excess power

Using a 25% capacity it was calculated that the Waste Water Plant used 202kWh/day.

A 30kW system was deemed to offset 75% of the Waste Water Plant or 150kWh



### How much roof space is required?

System Size	Average Power (kWh/day)	Number of Panels	Area Required (m <sup>2</sup> )
10kW	50	56	71
20kW	100	112	142
30kW	150	180	216
40kW	200	240	288
50kW	250	300	360



### Payback

System Size	Full Cost	Cost after Grant	Monthly Reduction in Electricity Bill	Annual Savings	Payback Period	Daily Output Range
30kW	\$175,000	\$88,000	\$540	\$6,480	5 Yrs	150kWh
30kW	\$175,000	\$175,000	\$540	\$6,480	10 Yrs	150kWh

Assumes 5% increase in cost of power pa  
Assumes no power is fed back into the grid



### Government support

State Government: Feed in Tariff

'Retooling for Climate Change' Grant provided by AusIndustry

Renewable Energy Certificates (RECs)

Solar Credits Scheme



### Solar Advantages: Environmental Sustainability

Renewable energy source unlike the vast majority of Australia's electricity therefore limits the number of greenhouse gases emitted. For Elderton this is 55 tonnes per year – or approximately 10 Commodores on the road every year.

Major reduction in overall water use. Fossil fuel energy consumes 2 litres per kW in the production process. For Elderton we estimate to save almost 100,000 litres of water in this production process.



### Solar Advantages: Financial Sustainability

Investing in solar power is about pre-purchasing your electricity

Electricity Prices Are Rising - Electricity Retail Market Review

- "increases in electricity prices range from 23% to 69% over the past 5 years."
- "The wholesale cost of electricity is set to double"



## Solar Advantages: Financial Sustainability (2)

Regulations are constantly changing.

When not in use there is scope to feed power back into the grid at 42c/kWh (State Government legislated) + 8c/kWh from some generators (Elderton's is AGL).

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19

## Solar Advantages: Social Sustainability

**The Advertiser** The Advertiser Newspaper



ABC Radio



Gourmet Traveller Wine Magazine



Wine Spectator Magazine



The Weekend Australian Magazine



The Sydney Morning Herald Newspaper



The Age Newspaper



20