Resource Efficiency in the Wine Industry

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EPA Victoria

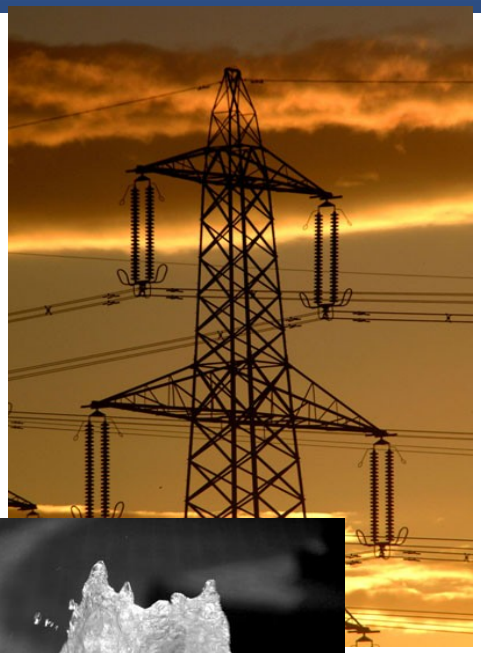
When you think EPA you may think……

- Litter Reports (1800 35 25 55)
- Smokey Vehicle Reports (1800 444 051)
- Infringement Notices (Fines) for Pollution
  (Pollution Watch Line 1800 444 004)
- Works Approvals
- Licensing

Environment & Resource Efficiency Plans

Requires sites to:

- Register with EPA
- Assess energy, water and waste at relevant sites
- Implement cost effective actions (3 year pay-back)
- Report to EPA on progress with implementation
- Cycle of up to 8 years



Program Features

- Will apply to the largest energy and water using sites in Victoria
- Primary production and residential sites exempt
- Not confined to EPA licensed sites

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Evolution of EPA's focus

- Command and Control
- Licences
- Works Approval

Partnership/Holistic Approach

-*Sustainability Covenants*

-Partnerships with external organisations

Role of EPA: the Modern Regulator

"The Environment Protection Authority will be equipped to ensure Victoria becomes one of the first places in the world where the environment routinely becomes a business opportunity rather than a business cost."

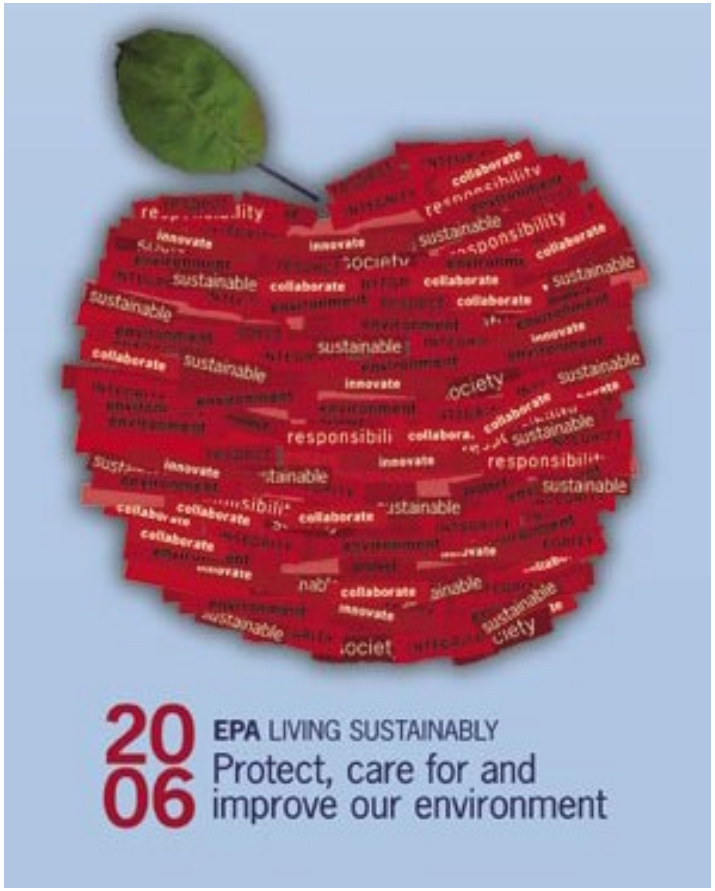
The Hon John Thwaites

Minister for Water, Environment and Climate Change

Living Sustainably

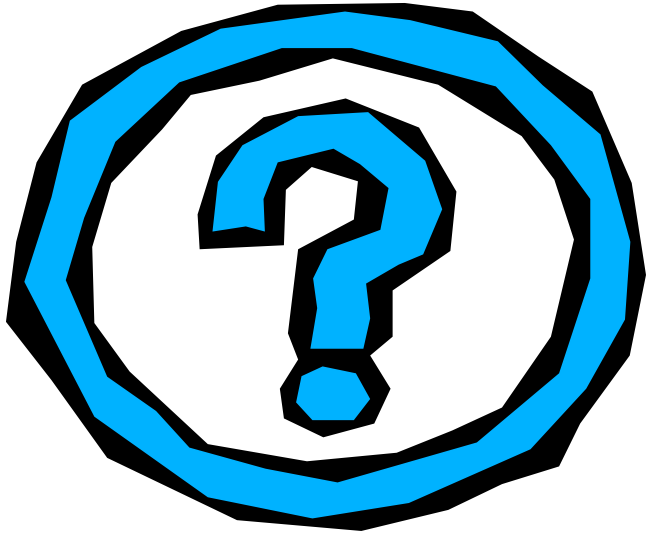
- Four Values
  - Collaboration
  - Innovation
  - Integrity
  - Respect

- Four Objectives
  - Increased Resource Efficiency
  - Decreased Emissions Impacts
  - Enhance our Reputation
  - Benefit the Economy



What does it all mean?

- What is resource efficiency?
- How much will it cost us?
- How can it help?
- What would we have to do?



Resource Efficiency

Resource Efficiency Is…..

- Using raw materials (eg water, energy, chemicals, ingredients) to the maximum extent possible

- Proactive (action from front end)

  – not reactive (or end-of-pipe)

- Improving Resource Efficiency means:

  -Minimising wastes, maximising production

- **Resource Efficiency makes Good Business Sense**!!

Resource Efficiency

- Can result in benefits to many different industries doing many different things and operating on many different scales……

Masterfoods	SDS Beverages
Cadbury Schweppes	Ford
Hilton Fabrics	Mildura Fruit Juices
Nufarm	SPC Ardmona
Qenos	Kraft
Huntsman	GSK
Parmalat	Tatura Milk
Greenham's Abattoir	Precision Plating

Pride Paints

Reuse of Wash Water

- Annual savings of $28,200

  Savings from

  - Reduction in waste disposal costs
  - Reduction in raw materials used
  - Reduction in amount of Labour used
  - Reduction in water use

- Cost of $5,915
  - Capital
  - R&D
  - Labour

Parmalat Australia: Bendigo

- Recycled water replacing potable water in cooling towers = **18 ML/annum**

- Clean-In-Place Optimisation
  - Conductivity meters for caustic and acid rinses
  - Turbidity meters for interface management
  - Total Saving = **28 ML/annum**

"You have to seriously consider resource-efficient opportunities that provide commercially attractive savings for business!"
Peter Gaudion, Manufacturing Manager

SPC Ardmona: Shepparton

- Changes to cleaning practices included:
  - Reducing the diameter of hoses from 1” to ¾”
  - Installing trigger nozzles
  - Cultural change (eg employing dry cleanup methods)

Water savings = **800kL/day**

Vacuum Pump Improvements

- Nufarm reduced vacuum pump water consumption by approx **30 ML/annum**.
- Actions included:
  - Converting once-through pumps to ‘closed-loop’ pumps (where applicable)
  - Allowing pump shut down when vacuum not required (next step is to automate pump shut down)
  - Installing thermometers and flow meters to allow automated temperature control
  - Using recycled water where appropriate
  - Collecting waste water for reuse at other parts of the plant

SGE Analytical Sciences

Closed loop cooling water

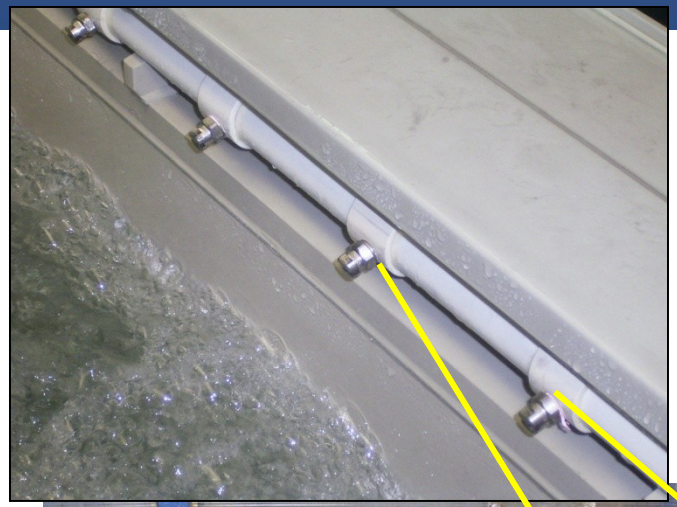
- In-line furnace cooling water = **1.6 ML/annum**
  - In house design of a closed loop cooling system
  - Ford Laser car radiator, a fan, pump, flow monitor, processor control and temperature monitor
  - Total cost of around $3000
- Glass Drawing Tower
  - Retrofit water cooling
  - Saving = **0.7 ML/annum**
  - Estimated cost of $3300
  - In progress with EPA and AiG assistance
- Payback period: 3.1 years

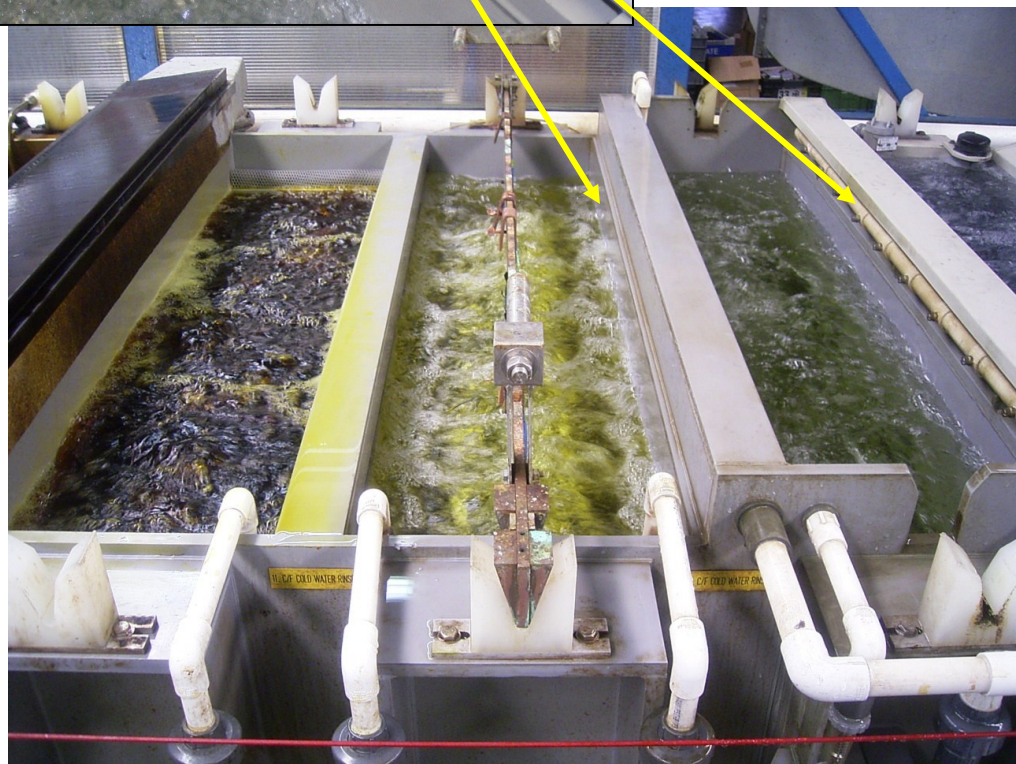
Precision Plating

Spray Nozzles

- Existing spray nozzles
  20sec spray rinse => 4L each spray rinse
  384lt/hr x 24hrs operation
  => **9216 L/day**
- New spray nozzles
  same spray time => 2.1L each spray rinse
  Water savings
  => **4377 L/day**

- Capital Cost = $750
- Annual Savings = $958





What can wineries focus on?

Water/wastewater reductions:

- **Use water audits to identify areas for improved efficiencies**
- **Use alternative cleaning agents to reduce sodium salts**
- **Dry sweep**
- **Minimise product (wine) loss due (eg tank cleaning)**

What Can Wineries Focus on?

Energy reductions:

- **Filtering**
- **Refrigeration**
- **Pumping**
- **Bottling**
- **Wastewater Treatment**
- **Lighting**
- **Machinery**

What Can Wineries Focus on?

Solid waste reductions:

- **Replacing earth filters with centrifuges to reduce volume of lees**
- **Reduce filter cakes & treatment sludges (reduce solids and BOD/COD in wastewater)**
- **Reduce chemicals/additives packaging (increase take-back schemes)**

What Can Wineries Focus on?

- Beyond wine production….
  - Supply chain
  - Labelling
  - Transport
  - Bottles used
  - Packaging of those bottles
  - Delivery of raw materials
  - Washing of trucks
  - Employee travel

For further Information

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