

Resource Efficiency *- how it can work for you*

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You have seen and heard heaps on **Resource Efficiency**

How do you pull it all together?

How do you make it relevant to your business?

Aim of this final session

- Short & Simple
- Fitting together the pieces
- Take-away package
- What to do when you get back to work?
- How to keep the momentum?

The “**take-away**” package

***10 ways to make the changes
stick!***

Step 1

Your ideas from today
-Write them down!

Step 2

Make a commitment to do
something - time & \$
-Are you serious!

Starting point - Commitment



Management sits down with staff & tells them why!

- They're **serious** about the environment
- Need their **input**
- More viable** business
- Better working **conditions**

Step 3

- Get your staff involved
- Ecomapping
- Rewards / incentives
- Acknowledge champions

Ecomapping / ISO Easy

- Free ware
- Uses simple 'mud maps'
- Designed in EU for SMEs
- Great for identifying environmental aspects/impacts
- Gets staff involved
- DIY step-wise approach to EMS
- Can be expanded to ISO 14001



Recommend to use photos - tells the story & shows improvements.

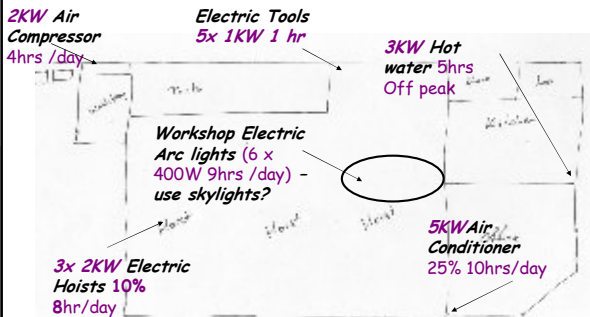
USE SYMBOLS TO OUTLINE ENVIRONMENTAL ISSUES

Overview - Eco-mapping process

- *Commitment*
- Step 1: Urban Situation - who do you impact?
- Step 2: *Material Flows*
- Step 3: "Weather" map - workers' opinion poll!
- Eco-mapping the site with staff:
 - Step 4: Eco-map water
 - Step 5: Eco-map soil & storage
 - Step 6: Eco- map air, odours, noise, dust
 - Step 7: Eco-map energy
 - Step 8: Eco-map waste
 - Step 9: Eco-map risks
- Step 10: Create a Summary & Action Plan



Step 7: Eco-map energy



One photo can tell a story

Step 4

Collate your bills

- How much energy, fuel, water & gas.
- Make it understandable!
- Graph it, Stick it up

What is your total energy use?

- Dig out your bills and tally up your annual energy use.
- Use the conversion table - convert to MJ (or GJ)

Worksheet 8: Sources of energy — Sunny Fruit Juice Co.

Form of energy	Annual usage	Annual usage GJ	Annual cost \$	% of total energy cost
Electricity	1100 kWh	3900 GJ	900 000	66
Natural gas	100 000 m ³	3900 GJ	500 000	34

Courtesy of Old EPA

Comparing “apples with apples”!

Conversion of energy sources to Megajoules

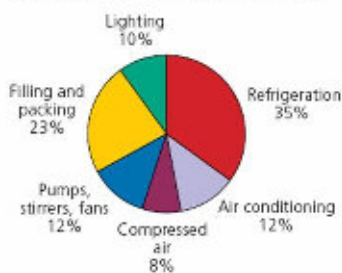
- Electricity : 3.6MJ = 1 kWh
- Natural gas: 39.5MJ = 1 cubic metre of gas
- Fuel Oil: 43.1MJ = kg of fuel oil
- Coal: 30.7MJ = kg of coal
- Steam: 2.8MJ = kg of steam @180°C & 900kPa

Carbon Footprint

- 1 litre petrol produces 2.3 kg CO₂
- 1 litre diesel produces 3 kg CO₂
- 1 kWh electricity in SA produces 1 kg CO₂
- 1 kWh gas produces 0.27 kg CO₂
- 1 MJ gas produces 0.069 kg CO₂

Make it easy - use pictures

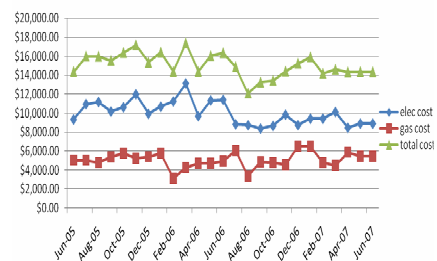
Electricity use — Sunny Fruit Juice Co.



Courtesy of Old EPA

Establish a baseline & set a target

*Check for Off-peak use of elect/gas
* Note seasonal patterns - A/C



Step 5

Brainstorm with Staff

-What can be done?

-What work practices can be improved?

-Create an Environmental Action Plan

Environmental Action Plan

1. Workshop floors - use mop - not a hose -*staff*
2. Install a timer on compressor by Oct 10 -*boss*
3. Separate cardboard bins in workshop -*Dan*
4. Install bunding around New oil by Nov 10 -*boss*
5. Investigate price of skylights by Dec 10 -*Steve*
6. Investigate use of rainwater - landlord - *boss*
7. *Staff* to ensure used brakes stored in plastic

Step 6

Create "green teams"

-Empower people to make changes

Behaviour change!

Needs to be:

- driven by the business & their staff
- an on-going process
- measurable
- accountable
- documented



Step 7

Talk with your customers and suppliers - joint efforts to improve.

-Environmental clauses in contracts

-Seek to return packaging to suppliers

Step 8

Focus on only a few actions

-"low hanging fruit"

Energy Efficiency Opportunities

- Lighting
 - - De-lamp fluorescent light fittings
 - - Switch group adjustments
 - - Automation
 - - Maintenance (flickering tubes consume energy)
- Heating/Cooling - Heat Recovery
- Standby Power
 - check % of elect energy consumed off-peak
- Electric Motors
- Compressed Air System
- Other Equipment

Step 9

Insert your environmental actions in your business plans

-Make your business outcomes include good environmental outcomes

Step 10

Celebrate your successes.

-Quantify it

-Tell everyone about it

Things to think about

- Make diary appointments to work on your actions
- Consult with those involved about any changes before making changes.
- What are the barriers to change?
- Trial changes for a short time then review
- Don't be discouraged - 2 steps forward, 1.5 back
- Put your successes in writing - website, newsletters.

It's now up to you!

Thanks and Questions please

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