Government of South Australia
Green Industries SA

FOODSA
Feeding connections

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Food South Australia

Food South Australia is an independent, industry-led and membership-based organisation representing food and beverage manufacturing companies based in South Australia. As the State's peak industry body, Food South Australia is dedicated to growing markets, capacity and connections of the state's food and beverage industry by providing business and market development support and acting as a united voice for South Australia's food and beverage industry.

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Green Industries SA

Green Industries SA helps develop the green economy in response to the demand for clean and green produce, and the reduction of emissions to air, water and soil from industry. Green Industries SA promotes the more efficient use of resources, and the conservation and recovery of scarce resources.

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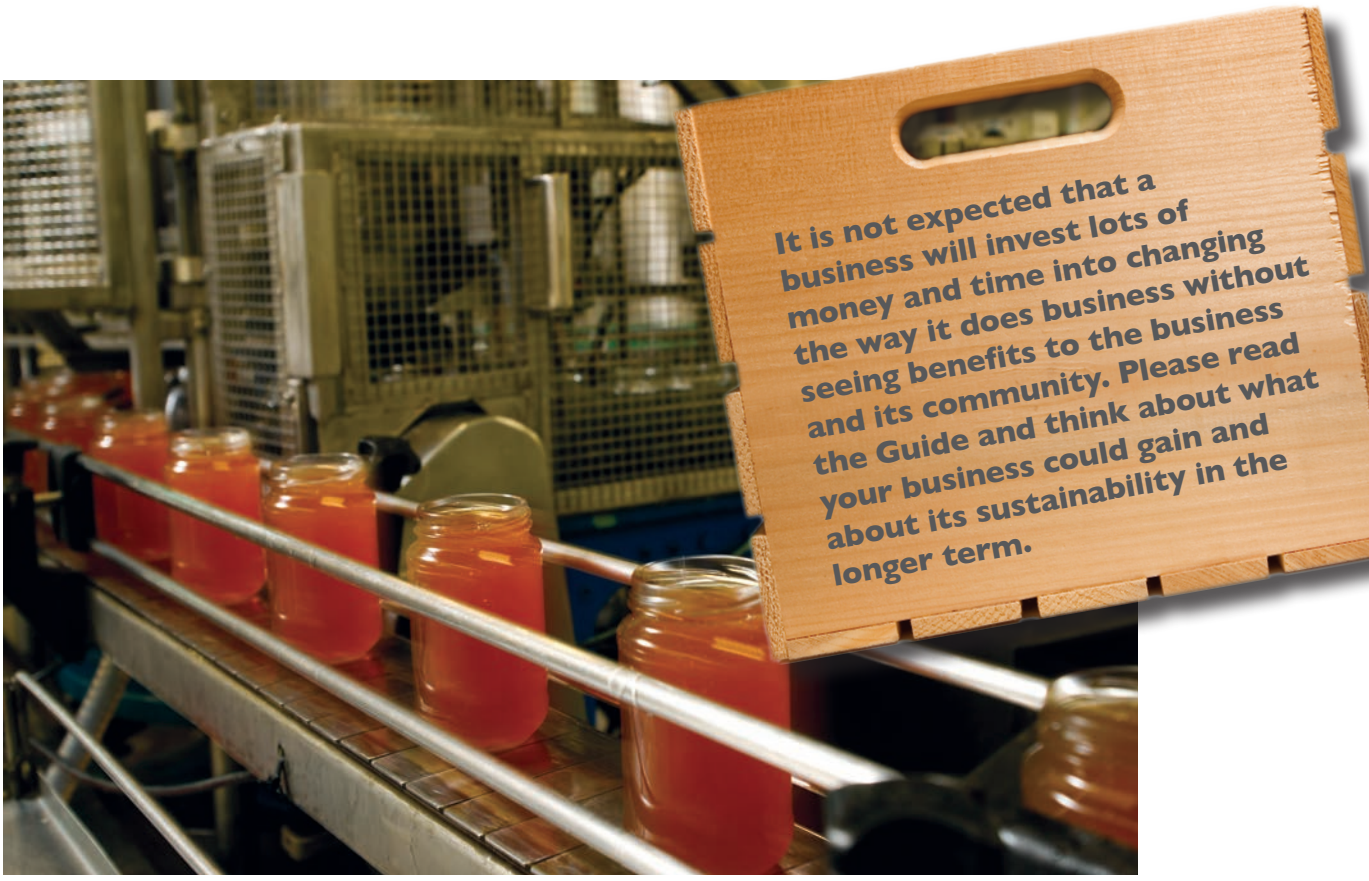


Welcome to *Your Guide for Sustainable Business in Food.*

This Guide has been created through a partnership between Food South Australia and Green Industries SA, with help and input from food industry members. The aim is to help South Australian food businesses to adopt positive environmental and social outcomes and still be profitable.

The Guide aims to help those food processing and food manufacturing businesses that are new to, or in the early stages of, considering the environmental sustainability of the business.

By using this Guide you'll get:

- an understanding of how to think practically and with a sound business mindset for incorporating the right level of sustainability into your business
- a basic decision-making process to help you take the right steps at the right time for improving your business' performance, primarily in the areas of:
  - » reducing your operating costs by improving energy, water and materials efficiency, and reducing waste
  - » engaging with producers, suppliers and service providers to improve environmental sustainability right through your supply chain
  - » engaging with retailers and consumers to promote your business' sustainability aspirations and achievements
  - » engaging and involving staff in the decision making process
  - » the importance of monitoring, evaluation and continuous improvement.
- plenty of links to additional practical information and advice on where to find support for taking action.

The structure of this Guide is shown overleaf, which includes: an overview to assist with prioritising sustainability for your businesses; Stages 1,2 and 3, each with a unique focus; and sections on *Evaluation, Implementation, Monitoring and Review* kept separate, as these activities are relevant to Stages 1, 2 and 3.

The Stages are listed in the order that most businesses tackle sustainability challenges, but **it's up to you to choose where you want to begin**, as this will depend on what your organisation has already achieved.

Structure of this Guide

Overview	**Understand why sustainability is crucial for the success of your business**: how your business impacts on the environment and community, and the potential benefits of improving environmental sustainability performance.
Stage 1	**Focus on processes:** understand how your company uses energy, water and materials and creates waste, determine your baseline resource usage, and get advice on how to make improvements.
Stage 2	**Focus on procurement and products:** understand the impacts of your suppliers and what your customers want; get advice on how to incorporate sustainability into your supply chain and product range. For businesses that outsource packaging, Stages 2 and 3 are complimentary, as there are hints about how to engage suppliers in Stage 2 and suggestions about packaging design and supply in Stage 3.
Stage 3	**Focus on packaging and labelling:** understand how to incorporate sustainable practices into product packaging, and how to communicate sustainability through labelling and good communication with consumers and suppliers. For businesses that outsource packaging, Stages 2 and 3 are complimentary, as there are hints about how to engage suppliers in Stage 2 and suggestions about packaging design and supply in Stage 3.
Evaluation	Advice on what to consider when evaluating options.
Implementation	Advice on implementing environmental sustainability action.
Monitoring and Review	Advice on how to monitor and review progress, including hints for setting up a **Green Team.**

Production of this Guide has been fully funded by Green Industries SA, which advises and supports SA businesses to achieve sustainability goals in waste, resource efficiency, and lean production.

Understand why sustainability is crucial for the success of your business

The rules of the game of food production are continually changing: market conditions change, business expenses change, technologies change. Future financial performance is being seen as linked to social and environmental performance. Rising costs are squeezing many business's profit margins.

Pressures include:

- rising costs of labour, energy, water and materials
- rising costs of waste management services
- customer and supply chain desire for good environmental and social performance
- changing environmental regulations
- competing products/substitutes including overseas-based lower cost labour
- the dominance of some retail sector markets
- keeping good, well trained staff focussed in your business
- maintaining productivity.

The **good news** is by adopting practices that are both practical and commercially sensible, your business can put itself in the best possible position to realise many benefits that actually lead to better business performance.

Adopting sustainable practices could lead to:

- reduction of direct and indirect operating costs through improved resource efficiency
- future-proofing your business from future costs and supply chain-shocks
- access to new markets with new products (local and international)
- creating a 'price premium' for superior products
- attracting and keeping the best and brightest staff
- getting the support of customers and the community
- accessing capital for investment and growth
- opening doors for better working relationships with suppliers, government and other partners.

Try this exercise: how does your business rely on the environment and community?

There are four components, or 'domains' to creating a sustainable business:

- Marketplace – having a strong base of customers and getting paid in a timely fashion
- Workplace – managing a productive and cohesive team of employees
- Community – maintaining positive relationships with the local community
- Environment – ensuring the business operates with the smallest environmental footprint possible

For each domain, ask yourself, and write down answers to the following:

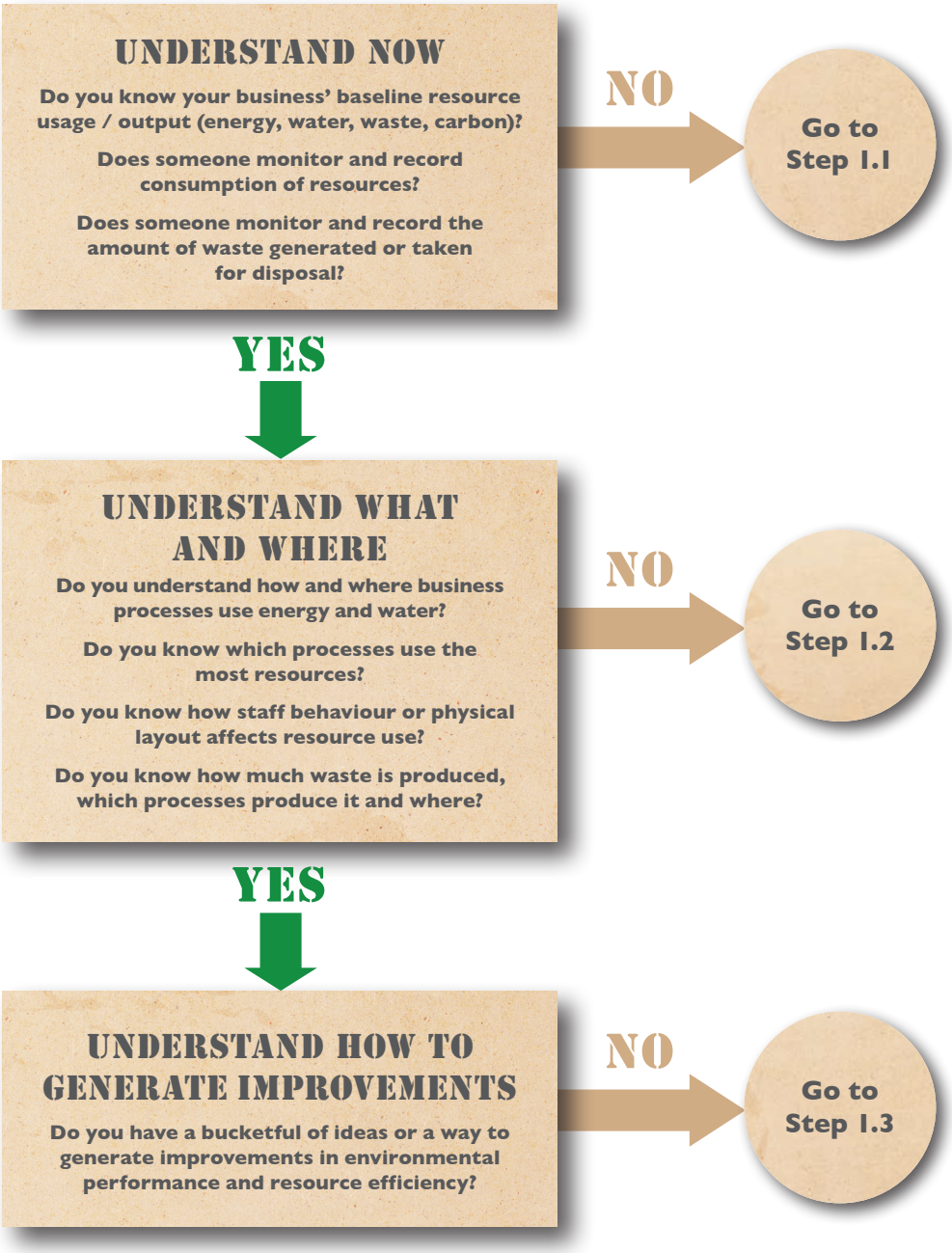
- What do we take from the domain to run our business? And what do we give back?
- Is our relationship to the market/workplace/community/environment sustainable? If not, what would need to change?
- What might the business stand to gain by improving its performance in this domain? For some ideas on answering this question and to help put forward a business case for sustainability, consider the following drivers/benefits of sustainable practices:

Do you know which have the greatest impact to your business' bottom line; to the environment; to the community; to your customers and suppliers?

It's worth considering these things when making decisions about what aspects of sustainability you want to tackle.

You'll need to prioritise your actions, as most businesses can't afford to do everything at once.

STAGE 1.0 | Focus on processes



Where would you like to make improvements?

1.3.1 Staff Practices
low upfront cost
high effort

1.3.2 Process Management and Control
medium upfront cost
medium effort

1.3.3 Equipment Change
high upfront cost
low effort

1.3.4 Harnessing Alternative Power and Water
high upfront cost
medium effort

STEP 1.1 | Set a performance baseline

Many organisations have been through this exercise, so you do not need to start with an empty sheet of paper

Look in the 'Self Assessment' / 'Worksheet Checklist' / 'Baseline Assessment' on page 2 available from http://www.ecoefficiency.com.au/en-us/ecoefficiencystages/opportunitiesforimprovement/foodprocessing.aspx

An alternative, more detailed Excel workbook for establishing baseline data is available as http://sustainabilityskills.net.au/wp-content/uploads/2013/06/EEM-Baseline-tool_Final.xlsx

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To get started with managing energy and water consumption, and waste and carbon emissions production you need to understand what you are doing now and what effect this is having on your business.

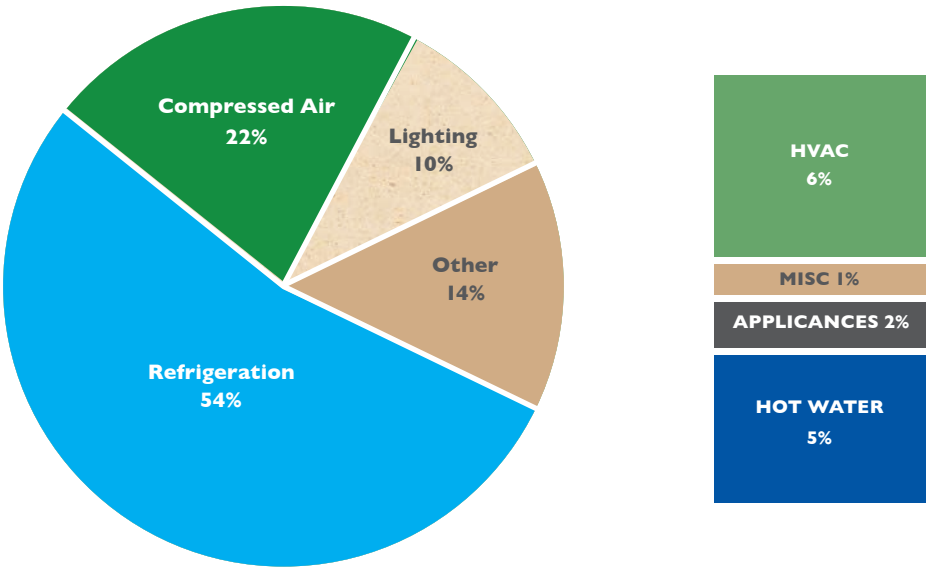
This is establishing a baseline. You need to know all the energy, water and materials entering your business and all the waste and emissions leaving it.

Charts such as the one shown below are common outputs that can be easily created from a baseline and help to quickly illustrate how your business is performing and to set priorities for improvement.

Have you considered carbon? It is important to know your carbon emissions level and in what ways your business contributes (e.g. energy use, refrigerant gases leakage, industrial processes and/or organic waste by-products). Your business can reduce its 'carbon footprint' by managing energy, water and waste as well as by having good machinery maintenance programs.

Some larger businesses engage an external expert to conduct a resource assessment or audit to set a baseline. These normally provide quantifiable details and help to identify specific opportunities. Other businesses may want to conduct an assessment in-house, for which there are guidelines next.

Estimated Annual electricity consumption (kWh)



STEP 1.2 | Conduct a site inspection of processes

QUICK QUESTIONS TO USE FOR SITE INSPECTION

- Where are product or resource losses happening (energy, water, liquid and solid waste, heat)?
- Are processes located in the best place to do the task and is each workflow efficient?
- How are staff behaviours reducing or increasing efficiency and wastage?
- Is cleaning and maintenance happening efficiently and often enough, and are there any signs of equipment in disrepair?
- What resources are in each workplace or facility area to manage resources and waste (e.g. coloured bins, movement activated lights, automatic timers and settings)?
- What formal procedures are in place and do they help?
- Are the systems that are in place good at managing safety, environmental hazards and wastage?

A site walk-around (inspection) will help you build a good picture of exactly where and how energy, water and materials are being used and where waste is being produced.

Walk around the site taking notes about how the day to day activities use resources. Build a picture of where resources (energy, materials, water) are used and where waste is produced. Take photos for later discussions and brainstorming.

One approach is to start where the ingredients come in, and follow the trail of activities.

Consider equipment, pumps, production lines, use of facilities such as lighting and plumbing, safety, IT and office equipment. Consider logistics, distribution and maintenance issues.

What equipment uses lots of power or water? Typical resource-intensive plant equipment include refrigeration and HVAC plant, cooling towers, boilers, air compressors, ovens and dryers, mixers, motors, pumps and fans.

More information available:

Useful templates are available from Queensland Eco Efficiency Self Assessment Guide Worksheets http://www.ecoefficiency.com.au/en-us/ecoefficiencystages/opportunitiesforimprovement/foodprocessing.aspx

Food South Australia's Energy Efficient Equipment toolkit provides guidance on what to look for with energy efficiency improvements http://foodsouthaustralia.com.au/toolkits/energy-efficient-equipment/

Australian Industry Group's Resource Efficiency Assist provides useful tools and guides: http://resourceefficiency.aigroup.com.au/toolsandresources

Want help?

Contact Green Industries SA, Food South Australia or independent resource and environmental consultants for support with resource assessments and auditing.

STEP 1.3 | Identify actions to improve process performance

Now that you have an understanding of how your business uses resources and generates waste, what can you do about it? You can improve process efficiency through actions related to:

- **staff practices**
- **process management and control**
- **equipment change, including modifications for heat recovery**
- **harnessing alternative sources of power and water.**

1.3.1 Staff practices

You can engage staff, harness their knowledge and introduce responsibility for assisting the business to improve process efficiency.

Housekeeping and maintenance activities can involve operational staff

- Brief daily start-up / shut-down checks of seals, pipes and potential blockages.
- Periodic equipment checks such as servicing, fluid top ups and dosing.
- Cleaning of belts, air flows, conveyors, filters coils and vents (or anywhere else with moving parts, heat, fluid or air flow).
- Regular monitoring checks of energy, water use and waste management systems e.g. bins are located in the correct areas, monitoring water consumption and meters to help identify losses (integrate this with Hazard Analysis and Critical Control Points (HAACP) if possible).
- Procedures to calibrate and clean monitoring and sensors regularly.
- Team meetings with resource efficiency as a regular agenda item.

Train and raise staff awareness

- Use signs to remind staff what to do and to remind them that it is important (e.g. close doors and display cases, switch off lights and equipment, turn off taps in washrooms and kitchens).
- Label bins to show what goes where.
- Invite an expert or industry peer to talk about their work or their energy saving successes (e.g. invite equipment or waste contractors to help staff understand what is needed).
- Train staff in machine use, shut down procedures and/or cleaning procedures.
- Give staff members access to useful checklists and guidelines to give them ideas as to what they can do in the workplace (available from the links below)

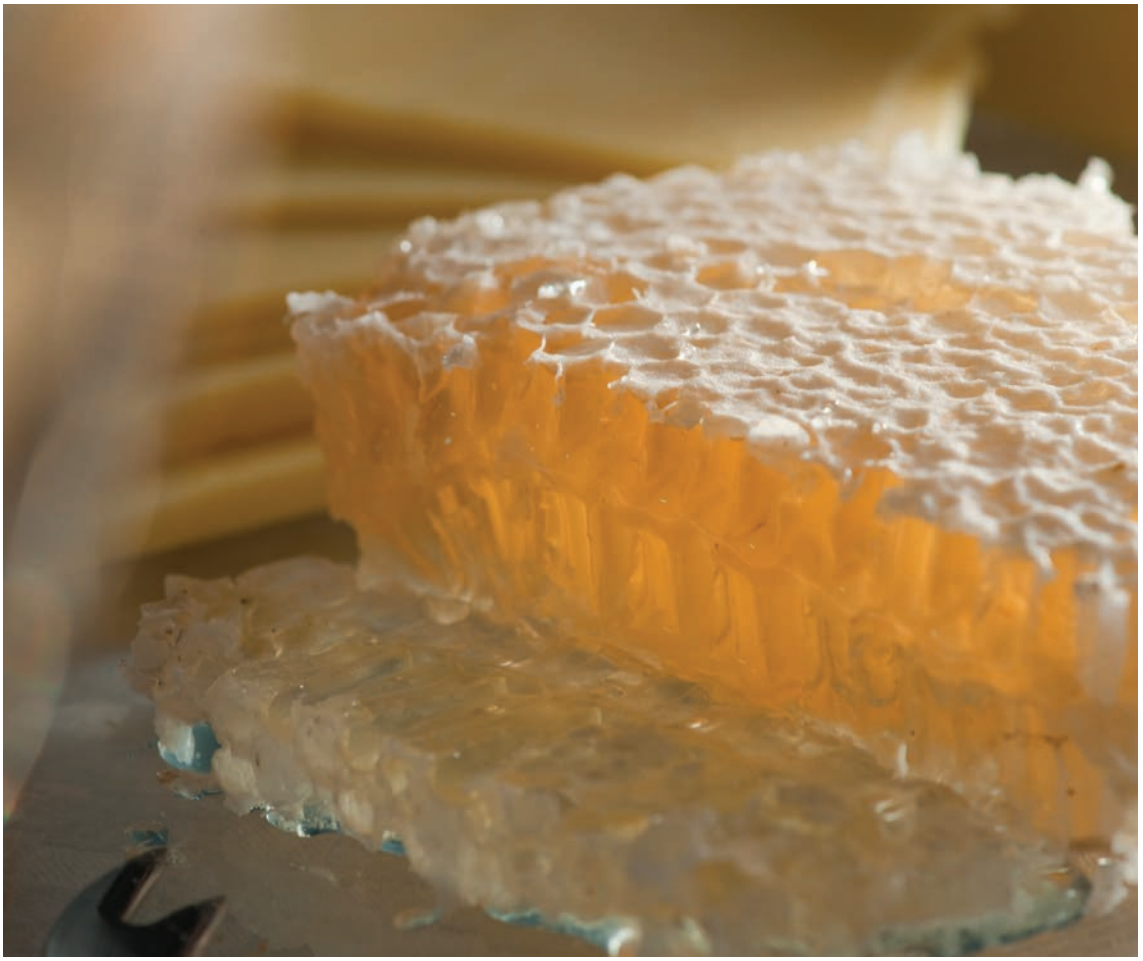
More information available:

Food South Australia's Energy Efficient Equipment toolkit provides further guidance on this step in relation to energy efficiency: http://foodsouthaustralia.com.au/toolkits/energy-efficient-equipment/)

Australian Industry Group's Resource Efficiency Assist provides useful tools and guides for this step: http://resourceefficiency.aigroup.com.au/toolsandresources

Information sheets, case studies, water efficiency tools and contact information are available through www.sawater.com.au/business

Green Industries SA website contains toolkits, templates and guides for businesses, and information on sustainable business practices.



1.3.2 Process management and control

Refrigeration plant often consumes between 30% and 70% of food businesses energy use.

The compressor is the most energy intensive component in refrigeration systems often accounting for more than 90% of energy used. An increase of 1°C in evaporating temperature or a reduction of 1°C in condensing temperature can reduce the energy consumption of the compressor by 2% to 4%.

Note: It is important to discuss changes to equipment settings, and fuels with service providers to ensure the change fits within optimal operating conditions and avoids damage.

You can implement monitoring practices and procedures to improve the efficiency of existing processes.

A lot of energy, water and goods can be wasted in processing when work is done that doesn't need to be, equipment is sitting idle, there are delays between useful tasks, or equipment is working harder than it needs to be. To improve efficiency and reducing operating costs, consider the following points:

Fine tune existing processes

Is equipment running unnecessarily, standing idle between jobs or not being fully utilised? Try:

- turning off equipment when not in use, or equipment that is on standby for long periods
- installing automatic light and other sensors
- increasing natural light to work areas and /or remove excess lights
- minimising start up and run time of equipment that uses a lot of power or water such as ovens
- matching batch sizes to capacity for equipment that uses a lot of power or water.

Is equipment running harder than it needs to? Try:

- Checking manuals and Food South Australia safety requirements and /or seek expert advice on optimum settings, for example:
  - » set air conditioners higher in summer (25°C) and lower in winter (20°C)
  - » set hot water systems to minimum allowable temperature
  - » set refrigeration system evaporator temperatures as high as possible
  - » set condenser temperatures as low as possible.
- Minimising heat losses by pre-cooling items that will be refrigerated or frozen, isolating cooled areas and insulating pipes.
- Separating hot process locations from cold process locations.

Is water being used unnecessarily? Try:

- thawing in the refrigerator, in baths, or air defrosting freezers instead of using running water
- reducing defrost cycles if possible
- using waterless lubricants on conveyors
- using sanitising agents or low water options for cleaning and rinsing (e.g. high pressure cleaners or 'gas-pigging' in pipe work)
- adjusting hose sizes; install trigger nozzles, high efficiency sprayers, flow restrictors, timers and automatic control or shutoff valves to reduce water consumption
- scheduling production change-overs to reduce cleaning
- set the conductivity/cycling set point in cooling towers to highest allowable limit to reduce water discharge.

More information available:

For a range of opportunities in common equipment see the collection of Utility efficiency fact sheets in the Eco-Efficiency in the Queensland food processing industry resources. http://www.ecoefficiency.com.au/en-us/ecoefficiencystages/opportunitiesforimprovement/foodprocessing.aspx The Utilities– Overview fact sheet provides a summary.

Food South Australia's Energy Efficient Equipment toolkit provides further guidance on this step in relation to energy efficiency: http://foodsouthaustralia.com.au/toolkits/energy-efficient-equipment/

Australian Industry Group's Resource Efficiency Assist provides useful tools and guides for this step: http://resourceefficiency.aigroup.com.au/toolsandresources

Improve warehouse and distribution efficiency

- Keep access to regularly used items easy.
- Lay out stores and warehousing, and plan routes and access modes to reduce equipment and fuel use, product handling and processing delays.
- Train staff in efficient vehicle use.
- Pack 'lighter and tighter', consolidating loads, shipping in bulk, removing unnecessary packaging or developing new packaging.
- Fill empty-truck on return trips (e.g. with collections of another company – either as an in-kind transaction or for a fee).
- Investigate logistics management software tools and providers.

Consider fuel switching opportunities

- On-site renewable energy sources (wind, solar, recovered food/organic waste).
- Use purchased biofuels, biogas or biodiesel mixes.
- Check green and renewable electricity options with energy retailers.

- Check the quality and impact of consumables that may affect efficiency (e.g. refrigerants) as these affect carbon footprint.
- Look at the whole fuel picture (facility, transport, distribution, fleet and travel) for efficiency opportunities.

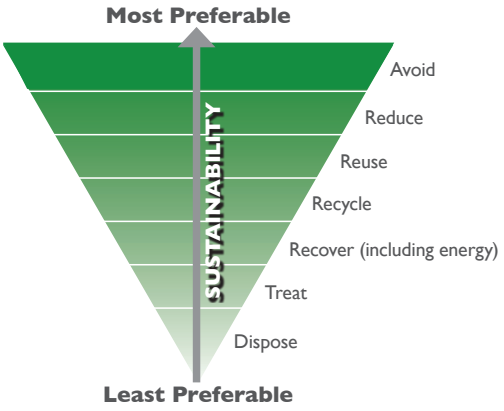
Improve goods and waste management

- Identify causes and solutions to oversupply, reject or excessive waste issues (e.g. through better scheduling or measurement).
- Find out if alternative chemicals or consumables might reduce waste and wastage.
- Discuss with suppliers if their packaging can be reduced (bulk delivery, removable or returnable linings, and recyclable options).
- Consider donating food to organisations such as Foodbank or OzHarvest if the oversupply meets HACCP requirements.
- Consider potential to sell waste for animal feed or by-products extraction.
- Create compost or install a worm farm.
- Strategically place clearly labelled, right sized bins and bulk bin systems.
- Consider additional compacting, handling and storage facilities for larger volume or odorous or hazardous wastes.
- Discuss options and formalise agreements with waste contractors and other partners for timely collection, recycle, disposal and support services such as renting bins, training and reporting.
- Prepare procedures and training for waste management, monitoring and reporting.

Consider each waste issue and opportunity in the following order, as shown in the waste management hierarchy opposite

- Can you avoid creating the waste (then you won't have to deal with it)?
- Can you reduce the amount of waste produced?
- Can the waste product be reused, either internally or by another organisation?
- Can the waste product be recycled, and if so, where can it be recycled?
- Can the waste be recovered as an energy source?

Waste management hierarchy



More information available:

Look at the Eco-Efficiency for Queensland Manufacturers' website for suggestions, links and useful examples in relation to waste management practices
http://www.ecoefficiency.com.au/en-us/ecoefficiencystages/opportunitiesforimprovement/foodprocessing.aspx

South Australia's Waste Strategy offers information on the waste hierarchy, available at
http://www.greenindustries.sa.gov.au/publications-waste-strategy-2015-2020

Australian Industry Group's Resource Efficiency Assist provides useful tools and guides for this step:
http://resourceefficiency.aigroup.com.au/toolsandresources

1.3.3 Equipment change

Did you know that the cheapest option in the short term may cost you money in the long term?

Electric motors will use four to 10 times their purchase price in electricity annually.

High efficiency equipment will normally offer cost benefits on top of energy or water savings, such as reduced noise, extended life and reduced maintenance.

New LED lighting has a higher capital cost but lasts (on average) five to 10 times longer than existing fluorescent and halogen lighting. They use only a fraction of the power (typically less than 40%) and produce much less heat.

You can improve equipment to help improve resource efficiency – consider the following:

Design new plant and equipment well

- Understand exactly what your business hopes to achieve through the new equipment.
- Consider if scheduling or other improvements could achieve the same objectives (e.g. recovering heat, using air chillers instead of water chillers, changes in resource use).
- Examine efficiency of new equipment and whole of life costs and benefits to your business.
- Consider the fuel efficiency of fleet vehicles over time, rather than just purchase price.
- Talk to the provider to match the system with your needs (sizing, configuration, location and space).
- Consider smaller, more efficient equipment options (e.g. compressors) near the point of work, rather than assume one large system to satisfy the entire needs of the process.
- Ask about the distribution pipe work and lines and installation to minimise losses through obstructions, pressure drops or heat loss (no dead ends or long circuitous routes).
- Discuss automatic controls that respond to changing conditions such as pressure, temperature, light or flow rates (e.g. variable speed drives, occupancy sensors, dimmers) and how these might reduce resource use.
- Discuss how the plant may be installed to optimise efficiency (e.g. trimming pump impellers, monitoring boiler flue temperature / gases or assessing and correcting for poor power factors or electrical plant).
- Design equipment layout to minimise water and cleaning requirements, such as using mechanical seal pumps instead of water sealing pumps.

More information available:

Food South Australia's Energy Efficient Equipment toolkit provides further guidance on this step in relation to energy efficient equipment upgrades and optimisation (http://foodsouthaustralia.com.au/toolkits/energy-efficient-equipment/)

NSW Government's Energy Efficient Business program provides useful resources on refrigeration, HVAC and lighting upgrades (http://www.environment.nsw.gov.au/business/energy-efficiency-guides.htm)

Converting waste heat to energy

In many food businesses, heat given off by one process can be captured and fed back to other nearby processes.

This can create substantial energy savings. Heat recovery is achieved by passing hot exhaust or liquids through a return process or by using a heat exchanger. How much heat you can use depends on how much heat can be recovered and how far it needs to travel.

Air compressors for example lose more than 80% of their electrical supply as heat. Capturing this by adding a heat recovery system may cost 10% of the compressor's purchase price but can pay for itself through electricity savings in less than a year.

Recover useful energy by:

- identify areas of surplus heat production and consider ways to use the excess heat
- use heat from compressors to heat water or air for general use or cleaning or defrosting
- use boiler blowdown water and heat from flue gases to preheat water going to the boiler
- collect steam and add the condensed water to feed flows.

More information available:

Eco-Efficiency for Queensland Manufacturers offers sheets on Boiler Efficiency, Compressed Air Efficiency and Refrigeration Efficiency at: http://www.ecoefficiency.com.au/en-us/ecoefficiencystages/opportunitiesforimprovement/foodprocessing.aspx. Refer to Utilities section.

Food South Australia's Energy Efficient Equipment toolkit provides further guidance on this step in relation to energy efficiency: http://foodsouthaustralia.com.au/toolkits/energy-efficient-equipment/

Australian Industry Group's Resource Efficiency Assist provides useful tools and guides for this step: http://resourceefficiency.aigroup.com s.au/toolsandresources

1.3.4 Harnessing alternative power and water sources

Power

Installing onsite renewable or high efficiency energy sources can increase your business's resilience.

This can protect from exposure to volatile energy markets and reduce dependence on mains or fossil fuel sources. It offers protection from power failures and cuts your carbon footprint.

Onsite sources may have a significant upfront cost but, depending on the market and technology, can offer long term cost benefits.

Are there other local businesses that may be interested in cooperating to install generation equipment and share the costs? Remember that some energy suppliers have an interest in the shared equipment and may be willing to enter an agreement.

- Consider solar photovoltaic for electrical energy and solar water preheating.
- Consider the use of battery storage for storing solar PV energy (or off-peak power) and reducing peak power consumption.
- Examine the suitability of climate conditions for wind power (regional areas in particular) and potential costs and benefits for your business.
- Examine the options of co-generation and tri-generation plant that are high efficiency generator engines that provide electrical energy and heat energy (tri-generation also produces chilled water through an absorption chiller).
- Consider the business's suitability for direct energy recovery from biomass combustion (burning of organic matter).
- Talk to energy experts about all the options.

More information available:

NSW Government's Energy Efficient Business program provides useful resources on solar PV, co-generation and heat recovery: http://www.environment.nsw.gov.au/business/solar-finance-guide.htm

Water

There are many production and facility processes within food businesses that do not require potable water.

Activities such as steam and cooling systems, wash down, staff toilets and irrigation can use recycled, recovered and local water supplies.

Note you should always talk with experts to avoid damaging equipment or affecting operations specifications.

- Understand the water quality needs of different processes.
- Install rain water tanks to capture water from large roof areas or sealed areas.
- Talk to larger nearby businesses to see if they have water excess to their requirements.
- Examine opportunities to recapture and recirculate water throughout your processes.
- Enquire about licensing arrangements for bore water use with your local Natural Resource Management Board in line with the relevant regional Water Allocation Plan.
- Explore opportunities to reduce your trade waste effluent and costs.
- Contact SA Water and local councils about nearby recycled or treated water systems (e.g. Mawson Lakes, Glenelg to Adelaide Parklands system).

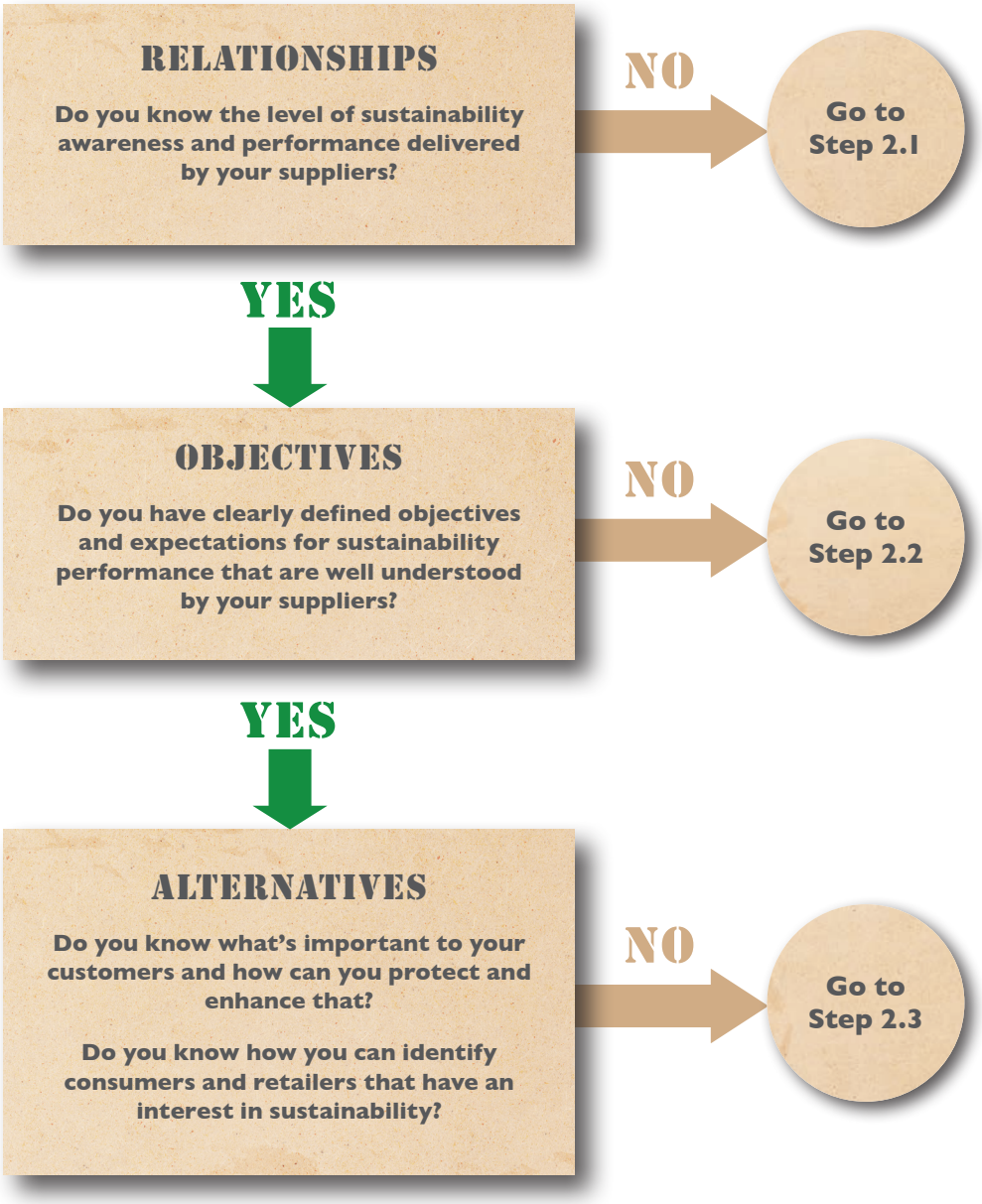
More information available:

See SA Water's website's information sheets, case studies, water efficiency tools and contact information at: http://www.sawater.com.au/business/saving-water-in-your-business

Cooling tower efficiency, Boiler efficiency, Water Efficient processing, Alternative Water Sources, Wastewater Efficiency, and Resource Recovery from Wastewater are found at: http://www.ecoefficiency.com.au/en-us/ecoefficiencystages/opportunitiesforimprovement/foodprocessing.aspx

Australian Industry Group's Resource Efficiency Assist provides useful tools and guides for this step: http://resourceefficiency.aigroup.com.au/toolsandresources

STAGE 2.0 | Focus on procurement and products



STEP 2.1 | Evaluate your relationship with suppliers

Getting to know your supplier's environmental and social impacts allows you to make more informed choices about your processes and use of resources.

You will better understand the risk and costs that the supplier may bring and you will be able to find out what influence you may have as a customer. Look for better purchasing decisions and look for win-win solutions with your suppliers.

Consider the relationship your business has with its suppliers, and determine which suppliers are most significant by making a list of how much you buy (volume) and how much you spend over a specific period of time (or by listing the significant inputs such as materials, utilities and service providers).

Hold a team working session to pool knowledge and discuss how the supplies make an impact – consider the following:

- How much do you know about the processes that produce the items identified?
- Consider the journey these materials have been on to get to your door.
- Are these goods the best and most sustainable options (safe, high quality, minimising environmental harm)?
- Do the processes used include hazardous chemicals?
- Where do the suppliers get their raw inputs and is this traceable?
- Are international agreements, human rights and regulations being met in their procurement?
- Do the methods of transport and delivery ensure high quality and minimise pollution?
- Do the waste contractors help you to separate and manage your waste streams?
- Think about your relationship with suppliers as a customer. Is your account well managed? Is your business in a position to negotiate or discuss future planning with them?
- Consider the sustainability and availability of the supply in the long term (unsustainable harvesting, climate, droughts and floods) Will these inputs be readily accessible in the short, medium and long-term?
- What might ongoing accessibility, price volatility, and carbon pricing have on your ability to use these inputs to make product for your customer base?

Prioritise and start to talk to your key suppliers about any gaps, concerns and opportunities that may have been identified. It never hurts to get the ball rolling and ask.

More information available:

Access an in-depth Business Guide to a Sustainable Supply Chain from the New Zealand Business Council for Sustainable Development at: https://www.sbc.org.nz/__data/assets/pdf_file/0005/54914/Sustainable-Supply-Chain-Guide.pdf

Want help?

You can also choose to ask an external service provider to help by formally auditing your procurement practices. Green Industries SA can put you in touch with a relevant consultant.

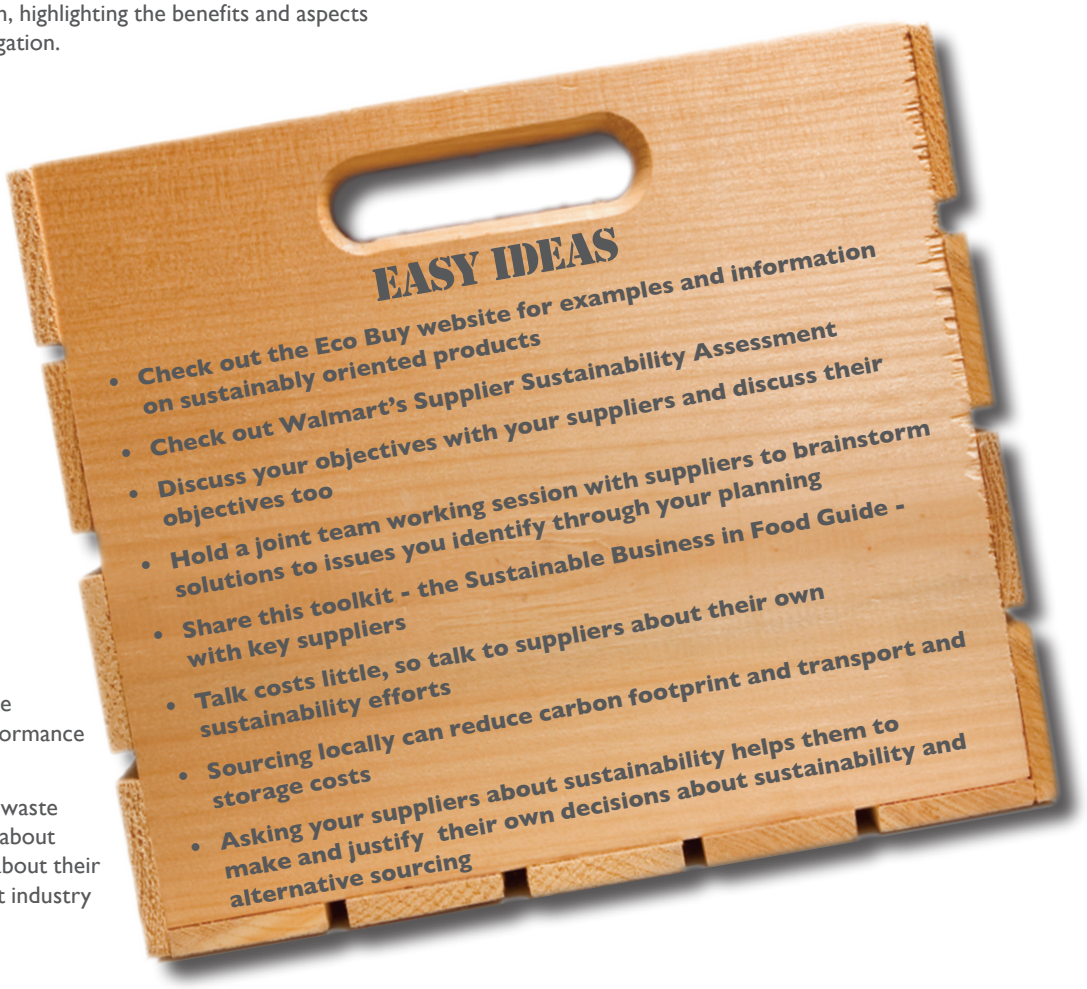
STEP 2.2 | Set clear objectives and expectations

Do you have clear expectations and objectives that your suppliers can understand and follow?

Setting priorities and expectations for procurement allows a business to make purchasing decisions that support its objectives and its risk management. A clear statement of the desired environmental and social outcomes allows constructive conversation with suppliers about future plans. This also demonstrates the business' commitment and intentions to staff, suppliers, the public and the market place. So think and discuss objectives with stakeholders within your business before taking any requests or discussions to suppliers.

The ability to develop formal systems and analysis depends to some extent on the size and structure of the organisation. Consider the following suggestions and decide which would help your business.

- Consider your objectives as a future planning exercise for your business.
- Create an internal sustainable procurement policy or a sustainability checklist for sourcing goods and services.
- Investigate the possibilities for certification and labelling that could be used as standards for choosing supplies or suppliers.
- Create a supplier evaluation checklist or code of conduct.
- Discuss the checklist with suppliers and work through the issues and expectations with them, highlighting the benefits and aspects that need more investigation.
- Plan a tour for suppliers to show them what you are planning to do and achieve, rather than only use traditional lines of communication.
- Remember suppliers may be further along the path in some areas than you are and together you may be able to resolve issues.
- When you are clear on your sustainability objectives formalise some of these in service contracts through performance clauses.
- Ask energy, water and waste management suppliers about their ability to report about their performance and about industry benchmarks.



More information available:

See http://ecobuy.org.au/ecofind/ for a searchable database of suppliers of sustainable products and check out the 'miscellaneous' category, for things like 'food packaging' suppliers. You can also access the "Sustainable Procurement Assessment Tool" in the resources section.

Talk to Food South Australia if you would like assistance in coordinating or facilitating supplier discussions.

Ceres provide a Supplier Self-Assessment questionnaire (this can be given to your suppliers): https://www.ceres.org/resources/reports/supplier-self-assessment-questionnaire-saq-building-the-foundation-for-sustainable-supply-chains

STEP 2.3 | Explore alternatives

Environmentally sustainable solutions can benefit your business in many ways.

They can reduce (improve) environmental impact, drop resource cost per item made, and reduce carbon footprint. They can demonstrate environmental responsibility in a traceable way. They offer customers a 'well-being factor' through perceived social and nutritional benefits.

Being able to demonstrate environmental performance as well as quality opens markets that prefer sustainably produced food products. Not all customers will support higher pricing, but many will genuinely support comparably priced alternatives.

Here are some key steps and tips you can use to explore how to create a product offering, or refine your existing product offering that is both environmentally sustainable and profitable.

Tune into the core demands of your customers

- Find out what you can about why customers prefer your product or a competitor's product.
- Understand the customers' core demands for your product and how you can protect such demands.

Look at what's possible in the supply chain

- Look for ways that environmentally sustainable methods can enhance your product and make it more desirable, the same or better quality and help make your offerings more profitable.
- Talk with your suppliers about the supply chain and possible alternative inputs to your product, e.g.:
  - » Is it grown using sustainable farming methods (minimal pesticides, drip irrigation, biodynamic farming, topsoil protection)?
  - » Is it processed with energy and water efficient processes?
  - » Is it, or can it be sourced locally?
  - » Can the supplier tell you the CO_2 (carbon) emissions per unit supplied to you?

How to find out what customers want

- Ask what your customer wants from your business (brand, marketing, chemical-free, packaging and sustainability)?
- Pick up the phone or use Facebook to talk with customers about how they might react to value adding measures such as:
  - » choosing feedstock with better environmental sustainability
  - » being socially responsible about sourcing, such as Fair Trade or sustainable development
  - » local sourcing and support to the local economy
  - » going "palm-oil free" or "sustainably sourced palm-oil"
  - » biodynamic, organic or unique health and lifestyle alternatives
  - » low carbon or carbon neutral products and labels
  - » water smart products
  - » supporting a company that supports the environment.

More information available:

Read the following interesting articles:

Food Chain Intelligence, "The environmental dimension of food supply chains" www.food-chain.com.au/Intro-operational-consumer.pdf

The Sustainability Consortium's "Greening Global Supply Chains" https://www.sustainabilityconsortium.org/impact/impact-report/

STEP 3.0 | Packaging and labelling

If packaging is a procurement item, refer to Stage 2 (in conjunction with the information provided in Stage 3) for advice on how to engage suppliers to deliver sustainable packaging options.

STEP 3.1 | Packaging

Packaging is critical to marketing and sales. Sustainable packaging makes efficient use of materials and does not create waste once it is no longer used as packaging.

As well as preserving quality, purity and freshness, it represents your brand and what your business stands for. It can be recyclable, reusable or compostable. It has benefits because sustainable packaging meets customer desire to avoid excess packaging, meets supply chain requirements for retailers with their own guidelines and requirements, reduces costs, differentiates your business and improves reputation for corporate responsibility.

You have three approaches to choose-from

- **Packaging design**
- **Recycling**
- **Product stewardship**

Packaging design

- Consider how your packaging could be redesigned to avoid or minimise the use of materials without compromising quality.
- Think about how to use less material, less packaging, less energy and water.
- Think about reducing the weight and density of packaging.
- Investigate packaging made from recycled or reusable materials.
- Investigate packaging that has been made using renewable resources or low energy use ('low embodied energy') materials.
- Review if any hazardous materials are used in current processes and identify how these could be eliminated.

Design for:

- decomposition once disposed
- reusable, easy to clean and durable materials
- recyclable with fewer types of materials and easy to disassemble
- easy transport, stackable and minimal transport packaging needs.

Recycling options

- Consider if your market is close enough to take-back packaging/containers for recycle or reuse.
- Look to see if there are markets for the packaging once its job with your product is done.
- Consider the materials used for recyclable content.

Product stewardship

- Consider how labelling can encourage customers and consumers to recycle or safely dispose of packaging.
- Investigate how your business could support community based recycling programs.

More information available:

See the Australian Packaging Covenant (APC) Sustainable Packaging Guidelines for useful design principles and strategies at www.packagingcovenant.org.au

Check out the Eco-Efficiency in Queensland's Reducing Packaging and Reusing and Recycling Packaging under the 'Waste' section at: http://www.ecoefficiency.com.au/en-us/ecoefficiencystages/opportunitiesforimprovement/foodprocessing.aspx

STEP 3.2 | Communications and labelling

A recent market research survey by the Mobium Group indicates that the Australian market for Lifestyles of Health and Sustainability (LOHAS) goods and services is valued at $A26 billion (as of 2016) and growing rapidly.

This is a sizeable market and a significant opportunity for food businesses with a sustainability edge. Once significant progress on environmental performance is achieved, the business needs to communicate the good news to the market place, staff and stakeholders. For some products, certification and labelling helps consumers to make sustainable choices and opens access to lucrative and loyal market segments.

You can choose from three distinct approaches

- **Tell your product's story**
- **Labelling and certification**
- **Partnerships within the community**

But remember, you must be honest about how far your business has come in sustainability.

Tell your product's story

- Be clear about the story behind your products, and make sure the story will connect with your customers (consider language and complexity). Try telling it in a fun, interesting storytelling format – people love stories. It's also important to be honest about how far your business has come in sustainability, as stretching the truth may create distrust amongst your customers. Here are some ideas for your story:
  - » use social media (Facebook, Twitter, Instagram) and/or your website to get the story out to the community
  - » explain why the business has adopted sustainable practices
  - » let the achievement be fun and part of a journey
  - » talk about how it meets your customers' needs and concerns
  - » acknowledge the journey on labels.

Product labelling and certification

- Look into the relevant eco-labelling programs operating in Australia (50 or more current at the time of publication) - some of the most popular are listed below:
  - » Certified Organic (Australian Certified and/or US National Organic Program) (https://www.nasaa.com.au)
  - » Marine Stewardship Council (MSC) certified (www.msc.org)
  - » RSPCA-approved Farming labelling (e.g. for Free Range) (https://www.rspca.org.au/what-we-do/rspca-approved-farming-scheme)
  - » Fairtrade certified (www.fta.org.au)
  - » Forest Stewardship Council (especially for packaging) (https://au.fsc.org/en-au/for-business/become-certified)
  - » Sustainable Palm Oil Certification (http://www.rspo.org/about/sustainable-palm-oil)
  - » Sustainably Sourced Sugar (http://www.bonsucro.com/)

- Select those that are most relevant to your business, and current and potential market opportunities, and investigate these in more detail.
- Based on this investigation, choose wisely those that could benefit your business.
- Consider what the business will need to achieve in order to access these and what investment in time or money it might take.

Partnerships in the community

In some ways, being advocated for is a much more powerful message than touting your own credentials. Creating partnerships with the community can be a great way to get your message out there, so here are some ideas for engaging with the community.

- Meet with local community and environmental groups and tell them what you are doing and why.
- Gather and harness community support for what you are trying to achieve.
- Explore possible appropriate sponsorships or special projects that give the groups a chance to advocate for your product.

Be honest

- Deceit or truth stretching may work against your objectives and create distrust in the future.
- Be careful not to 'greenwash' (i.e. make claims about your product's green credentials without being in a position to prove or justify it) or appear to be 'greenwashing'.
- Even accidental overstatements can cause damage to a brand for a long time.
- Document what you are doing and only claim what can be evidenced from your records and processes.
- Be honest about what is still to be achieved and how you hope to get there.

Evaluation

No business can make all the changes and access all of the opportunities at once.

Some changes may not suit your business at this time. Some may be beyond the means of the company under current market conditions or company resources may need to be gathered first.

Consistent methods of evaluating opportunities that you identify will help you make informed management decisions that best fit your current situation, constraints and priorities. Evaluation needs to consider potential benefits, potential risks and the resources needed to bring about the change.

Once you've selected a list of potential actions to improve the sustainability performance of your business, it's important to evaluate them with a sound commercial mindset. Below is a basic procedure to help you evaluate your opportunities.

1. WHAT AND WHERE

- What's the idea or action (be specific)?
- Where in the business will it be implemented (be specific)?

2. WHY

- Why is adopting the action important for the business?
- What does the business stand to gain from adopting this action?

Count as many benefits as you can.

3. HOW

- How will the action be implemented and over what time frame?
- What's the upfront cost for implementing this action and can the business afford it?
- How much time might be required from staff to implement this action?
- What other risks (asides from investment) might it bring to the business that needs to be managed?
- How will success be measured?

Count as many actual and potential costs as you can.

4. WHEN

- Is the business ready to take-on this action?
- For the costs and benefits it presents, is this action suitable for the business right now, or are there other actions worth pursuing?

More information available:

Useful templates for opportunity evaluation can be found in Eco-Efficiency for Queensland Manufacturers, 'Self Assessment' section at http://www.ecoefficiency.com.au/Portals/56/factsheets/foodprocess/sag/ecofoodsag2_worksheets.pdf

Scroll down to the Self Assessment section and select Worksheet Checklist – refer to page 9 for relevant worksheets

Implementation

Having identified which changes will best support your business objectives in terms of sustainability and positive outcomes and which you want to focus on first, it is time to consider how the changes will be implemented.

Each business will have different projects to implement – refer to the case studies (pages 35 and 36) for ideas.

Monitoring and review

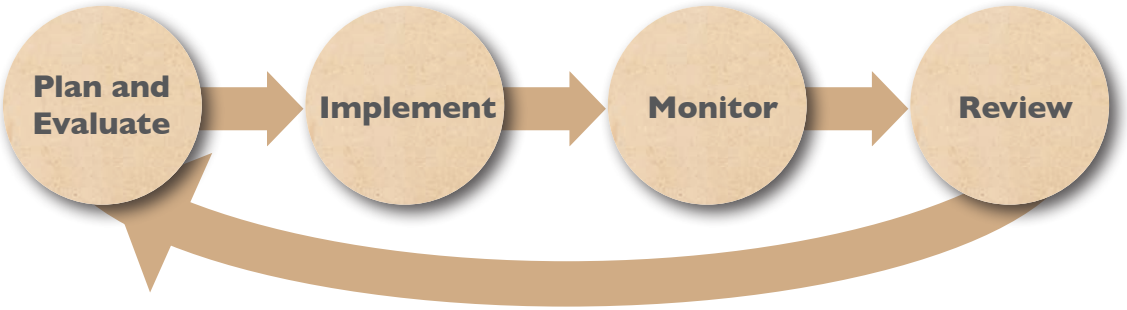
Implementing change is all very well, but how will you know if it is successful? How will you support any claims that you make about your business's achievements in sustainability?

Monitoring and reviewing progress is critical to ensuring implementation of actions stays on-track, and stays within the expected timeframes and budget allocated. To ensure this is done properly, businesses need to have at least two things in place:

1 an Action Plan with a clear timeframe (possibly staged over 90 days, 3 months and 12 months) and measures of success to ensure the actions (when implemented) do what they should

2 someone responsible (an individual or a team) to ensure that the actions are implemented according to the Action Plan.

The monitoring and review phase should be fed back into the evaluation and implementation process to ensure that your business sets a cycle of continuous improvement.



Setting-up a Green Team

Setting-up a Green Team can be a useful approach to managing and monitoring progress. The role of a Green Team is typically to:

- own the plan (of sustainability-related actions) and monitor progress
- engage the company's staff to help implement actions
- develop future environmental sustainability and/or resource efficiency plans
- promote the benefits of environmental sustainability across the company and stakeholders
- ensure that environmental sustainability remains relevant and important to the business.

Some tips for running a successful Green Team

1 Invite representatives from across the business that have the respect/relationship of employees at both senior and 'shop floor' levels

2 Ideally the Chief Executive Officer should be involved (at least for the first 90 days) - a senior manager should also sit on the Green Team to help facilitate action

3 Set regular (monthly) meetings that don't get cancelled (unless it's an extremely good reason)

4 Make sure there's diversity in thinking and opinion

These teams usually consist of volunteers – make sure to reward their contribution, and make sure managers are aware of and approve the time investment required for these staff to participate.

Case studies with a focus on process improvement

Company	Relevant Section	Description and Link
Angelakis Brothers (SA)	Processes	Energy efficiency improvements in the company's refrigeration plant identified savings of $76,000 per year in energy costs, and a reduction in annual refrigerant costs of over 96%. http://foodsouthaustralia.com.au/wp-content/uploads/2013/08/foodsa_casestudy_angelakis.pdf
Arnott's (SA)	Processes	Combined energy, waste and water efficiency improvement initiativeswithin processes has yielded annual savings >$250K. http://bit.ly/LRiN9D
Dennison Foods Manufacturing (VIC)	Processes	Implemented a number of waste and materials efficiency improvements to reduce flower loss by 5000kg per year, thereby resulting in higher production yields and reduced wastage. http://www.sustainability.vic.gov.au/services-and-advice/business/energy-and-materials-efficiency-for-business/case-studies/food-processing-and-storage-case-studies/dennison-foods-manufacturing
Golden North Ice Cream (SA)	Processes	Through participating in Food South Australia's Energy Efficient Equipment Program, Golden North identified and implemented a major refrigeration upgrade that resulted in annual energy cost savings of nearly $128,000 per year and an improvement in process productivity of over 50%. Case Study (pdf) link: http://foodsouthaustralia.com.au/wp-content/uploads/2013/08/foodsa_casestudy_goldennorth.pdf Video link: https://youtu.be/RY2sHSQKtb8
Integrity Fruit (VIC)	Processes	Energy efficiency measures save fruit packer and cool stores operator more than $25,000 per year and with a payback period of 1.5 years. http://www.sustainability.vic.gov.au/services-and-advice/business/energy-and-materials-efficiency-for-business/case-studies/food-processing-and-storage-case-studies/integrity-fruit
Mexican Express (SA)	Processes	Through participating in Food South Australia's Energy Efficient Equipment Program, Mexican Express installed a 30kW solar system and power factor correction, resulting in significant energy savings and improved production capacity. Video link: https://youtu.be/RY2sHSQKtb8
Mildura Fruit Juices Australia (VIC)	Processes	The process achieved eco-efficiency and improved OH&S conditions through modifying existing water recycling, separation of solids from trade waste and a reduction in the volume of cleaning chemicals used. http://www.epa.vic.gov.au/~/media/Publications/1074.pdf
Parmalat (VIC)	Processes	13 resource efficiency improvements identified (for reduced water input and reduced trade waste output) yielding over $50,000 in savings http://www.epa.vic.gov.au/~/media/Publications/1078.pdf
Teys Australia (NSW)	Processes	By taking measures to slash its reliance on fossil fuel energy for refrigeration and heating, increase energy use from renewable sources and improve fresh water efficiency, Teys has saved over 557,000 megajoules of energy per year, reduced its demand for natural gas by 10 percent, and cut the company's water use per unit of production by 20 per cent. http://www.environment.nsw.gov.au/sustainabilityadvantage/csTeys.htm
Thomas Foods International (SA)	Processes	The company identified opportunities to reduce its gas consumption via recovering waste heat in the plant and using it to pre-heat water for the site's operations. http://foodsouthaustralia.com.au/wp-content/uploads/2013/08/foodsa_casestudy_thomasfoods.pdf

Case studies with a focus on procurement and products

Company	Relevant Section	Description and Link
B.-d. Farm Paris Creek (SA)	Product and Procurement	Using Biodynamic Organic farming methods, the company has grown significantly from an increasing demand in the market for more sustainable, healthier cheese products www.bdfarmpariscreek.com.au
Clean Seas – Sustainable Seafood (SA)	Product and Procurement	Recognising the critical role that sustainable fishstocks plays to the viability of the business, CleanSeas have rebranded themselves to incorporate 'Sustainable Seafood' into their tagline, backed-up by processes, ISO standards and Friend of the Sea (sustainable seafood) certification. http://bit.ly/oqsCw
Golden North Ice Cream (SA)	Product and Procurement	Golden North is one of few SA companies to achieve 'Palm Oil Free' status of its product range, in a commitment to eliminate the company's supply-chain impact on natural rainforests in Indonesia and Malaysia. http://goldennorth.com.au/palm-oil-free/
Longwarry Food Park (VIC)	Product and Procurement	The company expects to achieve $50,000 per year in cost savings through a project that involves making their milk powder bags thinner, which reduces transport costs and uses less materials. http://www.sustainability.vic.gov.au/services-and-advice/business/energy-and-materials-efficiency-for-business/case-studies/food-processing-and-storage-case-studies/longwarry-food-park
Starbucks (US)	Product and Procurement	Starbucks are funding The Beta Cup challenge – an open challenge for submitting designs to reduce the number of non-recyclable cups that are thrown away every year by creating a more convenient alternative to the reusable coffee cup. www.thebetacup.com
Tesco Lotus (Thailand)	Product and Procurement	Tesco Lotus has opened the first of its 'zero-carbon' supermarkets in Thailand, as part of its commitment to be a zero carbon business by 2050. The new store features environmentally friendly technologies including a wind turbine, lower wattage LED lighting, photovoltaic cells, hydrocarbon powered fridges and rammed earth walls which are less carbon intensive to manufacture than concrete or steel. Tesco Lotus is now a major supermarket chain in Thailand, Cambodia and China. http://bit.ly/svKkXd
WalMart	Product and Procurement	WalMart have launched the Sustainability Product Index, which will force its suppliers to disclose the sustainability performance of its products through a Sustainability Assessment and benchmarking. http://corporate.walmart.com/global-responsibility/environment-sustainability/sustainability-index-leaders-shop

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