SELF ASSESSMENT GUIDE — SAG1

Eco-efficiency resources for the food processing industry

The path to eco-efficiency

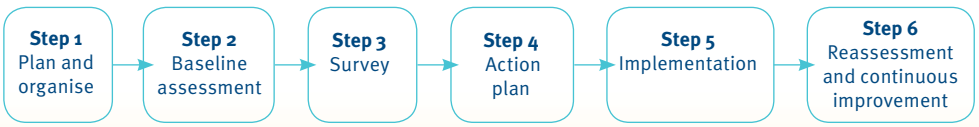
This is a step-by-step guide to implementing eco-efficiency in food processing plants.

Although it is a stand-alone guide, it has been designed so that it can be used to great effect when applied in conjunction with the six-step ecoBiz program run by Queensland's Environmental Protection Agency.

The added benefit of participation in the ecoBiz program is that it provides a simple method of documenting overall resource use and waste consumption over time. ecoBiz also provides a means for gaining recognition for eco-efficient achievements. For more information on the ecoBiz program or how to join visit **www.epa.qld.gov.au/ecobiz**

This guide includes the six-step checklist (below) to help companies to gauge their progress and is accompanied by worksheets (SAG2) and opportunities checklists (SAG3) to assist in data collection and assessment. The six-step checklist aligns with the six steps of the ecoBiz program.

SIX STEPS TO ECO-EFFICIENCY



By working through each of the steps and using the relevant worksheets and checklists, food processors will be able to collate the information they require to:

- assess their plant's current water and energy use, and waste generation
- identify opportunities for improvement
- progressively implement eco-efficiency opportunities
- continuously re-assess resource consumption to demonstrate savings.

These worksheets also allow easy transfer of information for ecoBiz participants using the ecoBiz tool. The *Opportunities checklists (SAG3)* provide suggestions of eco-efficiency ideas specific to the food processing industry and link to a series of fact sheets, which provide additional information about these opportunities.

Successful implementation of eco-efficiency often requires significant amounts of time, resources and commitment, so full company support and enthusiasm from top management to floor staff is essential. Eco-efficiency is often most successful when it is a team effort. However, an assessment can be undertaken by one or two individuals if the business provides the necessary resources and support.

Step 1

Plan and organise

Successful eco-efficiency relies on total commitment from management. A strongly committed and enthusiastic team leader, with as much expertise and experience as possible, is required to establish and encourage teams and work with staff from all areas of the business to keep activities on track. Goals for the project should be established and tasks assigned to individuals or team members to help gather the information required.

The first step in the ecoBiz program is to complete the application form including signoff by the Managing Director or company CEO.

Step 2

Baseline assessment

The baseline assessment is a means of understanding the current position of the company in terms of raw materials, energy and water consumed and waste generated. Worksheet 1 can be used to undertake the initial data collection. Worksheet 2 can then be used to help the business benchmark its current level of resource use.

By looking at the site's production and resource use during the baseline period, businesses can start to establish Key Performance Indicators (KPI) e.g. how much water does the plant use to produce a unit of product (L/unit). KPIs allow the business to evaluate the success of improvements and to set improvement targets. Refer to Worksheet 3 for the development of KPIs.

The second step of the ecoBiz program is to complete a baseline assessment detailing overall resource consumption and waste production. The ecoBiz Baseline Assessment can be completed using a summary of the data compiled for Worksheets 1 and 2. The ecoBiz tool automatically calculates production efficiency along with resource and cost indicators.

Step 3

Survey

A site survey typically involves an initial walk-through inspection of the plant to identify obvious areas of waste e.g. leaks, product on the floor, rework and spills. Worksheets 4 – 7 provide a format for a comprehensive water, energy and waste audit that align resource use with particular activities. Audits help locate and quantify unexplained resource losses and identify the equipment or activities that consume significant resources or generate excessive amounts of waste.

Once existing practices have been evaluated, businesses can start investigating eco-efficiency opportunities. These can range from simple, low-cost housekeeping improvements to process changes and product redesign. Suggestions from all staff members should be encouraged. Worksheet 8 can be used to record opportunities suitable for submission to the ecoBiz program. The site survey can also be documented using the ecoBiz Toolbox Site Survey spreadsheet.

The Opportunities checklists (SAG3) offer a range of eco-efficiency ideas suitable for most food processing plants. This checklist is tailored to food processing facilities and should be used in preference to the Site Survey – Materials/Energy/Water Ideas presented in the ecoBiz Toolbox Site Survey spreadsheet.

More detailed information on these opportunities and case studies specific to the Queensland food processing industry can be found in the fact sheets developed as part of the Eco-efficiency in the Queensland food processing industry project. Visit www.ecoefficiency.com.au to access the factsheets.

Step 4

Action plan

Worksheet 9 provides a list of factors that should be considered when assessing the feasibility of each identified opportunity including:

- potential changes to product quality
- impact on food safety
- impact on staff, customer and visitor health and safety
- impact on customer expectations
- improved or reduced environmental performance
- availability of resources, time and expertise
- ability to meet regulatory requirements and likely to deliver the greatest benefits.

The economic feasibility of each opportunity should also be investigated. Calculating a payback period that considers possible savings versus capital, running, maintenance, material and labour costs, can help to identity the opportunities that are most feasible in the short, medium and long term. Worksheet 10 provides a template to assist in this calculation.

Hidden costs should be considered for example, the true cost of water should also include any heating, treatment, cooling, pumping or wastewater costs. This is outlined in Worksheet 11.

Action plans should list short, medium and long-term actions, and include resources, persons responsible for implementation and priority for the implementation. Worksheet 12 provides a template for the Action Plan.

Most businesses prioritise actions based on how well they scored in the feasibility assessment and typically start with initiatives that are easy to implement. Including a list of other ideas to be considered in the future or require future investigation can help during the reassessment process. Recording the assessment of all opportunities and the reasons behind rejecting certain opportunities will allow them to be revisited at a later date without starting the process from scratch.

Worksheets 9 – 12 are suitable for submission to the ecoBiz program. Alternatively, the ecoBiz Toolbox Action Plan spreadsheet can be used to record planned activities.

Step 5

Implementation

Be sure to provide staff with the adequate support and training required to implement the plan. Providing feedback to staff on the success of the process will help to develop enthusiasm to assist in the implementation of more difficult projects. KPIs can be used to track performance and visual aids, such as pie charts and graphs can keep staff informed, motivated and boost morale.

Step 6

Reassessment and continuous improvement

Regular reassessment of the action plan is necessary to ensure changes to operational procedures have been considered. Fostering a culture in the workplace of continual improvement can lead to innovative ideas and a motivated, happy workforce. The ecoBiz tool allows businesses to compare data from their reassessment with their baseline assessment so they can track eco-efficiency improvements in a consistent manner using the ecoBiz Re-assessment spreadsheets, or alternatively reuse the worksheets provided in this guide.