



EREP Toolkit

Module 1 of 5: Overview

CONTENTS

1. Introduction	2
2. Background	3
3. Benefits for your business	4
4. The Environment and Resource Efficiency Plans program	5
4.1 Introduction to the EREP program	5
1. Financial viability of actions	5
2. Resource efficiency	5
3. Plan, do, review	5
4.2 Basic EREP program requirements	6
5. Details of the Toolkit	7
5.1 Module 1: Overview	7
5.2 Module 2: A management systems approach to resource efficiency	7
5.3 Module 3: A resource efficiency site assessment procedure	7
5.4 Module 4: Calculating payback periods	7
5.5 Module 5: Resource management tools, and where you can get further help	7
6. Availability of the Toolkit	8

1. INTRODUCTION

The Environment and Resource Efficiency Plans (EREP) Toolkit provides Victorian business with the necessary information, tools, case studies and guidance to achieve real cost savings, improved productivity, compliance with legislation and benefits for the Victorian and global environment.

Comprising five documents, the Toolkit provides practical references to help your business become more financially and environmentally sustainable by improving the management of your resource use efficiency. The booklet modules are numbered for ease of identification and cross-referencing, but do not denote a sequence.

The Toolkit is designed to support businesses that are participating in the Environment and Resource Efficiency Plans (EREP) program, but it can also be used by other businesses that are trying to improve the management of their resource use efficiency.

An overview of the Toolkit is shown in Figure 1. This figure is reproduced in each module of the Toolkit, with the boxes on the right hand side providing an overview of the relevant module in each case.

A more detailed summary of each Toolkit component is provided later in this module.

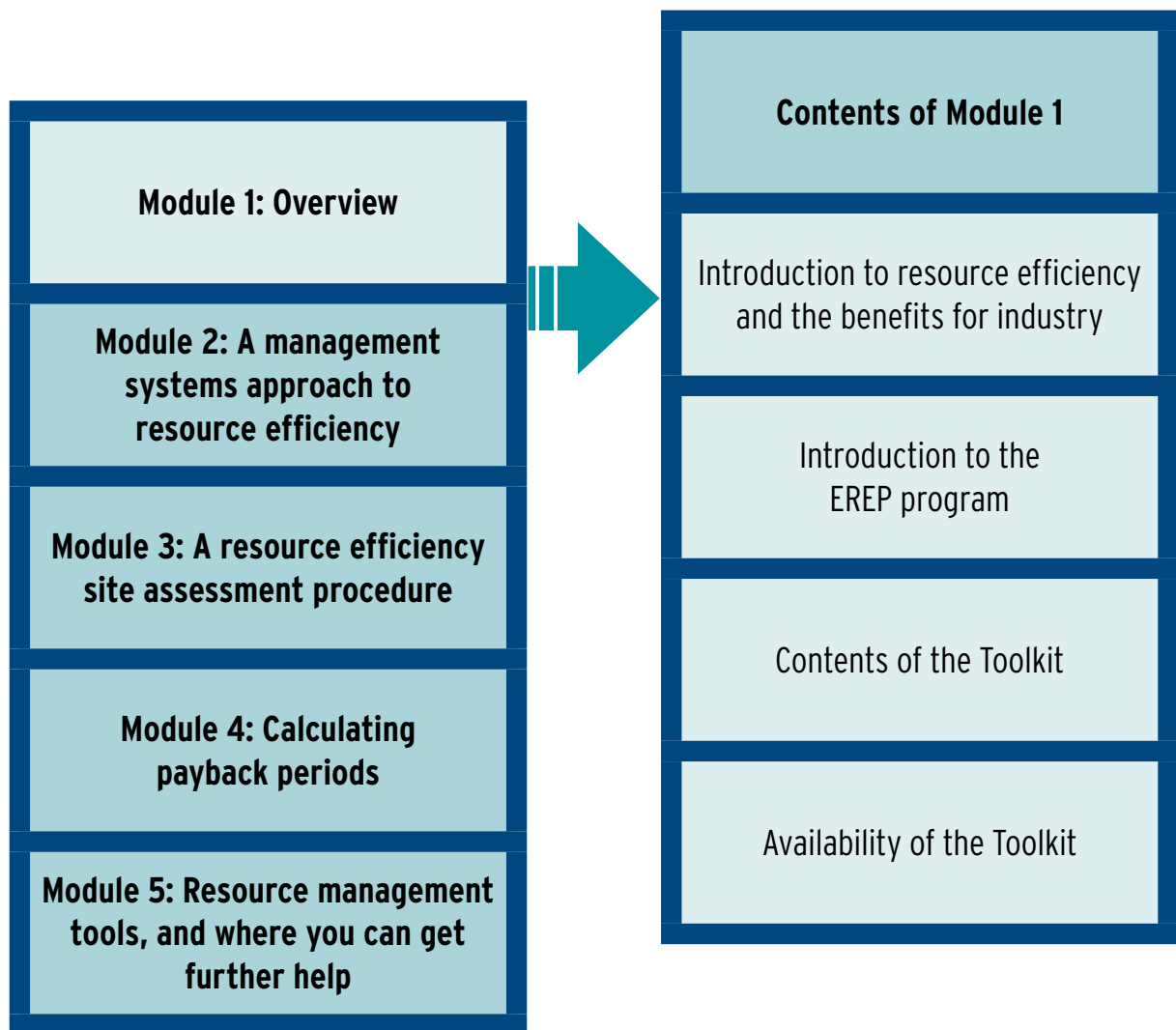


Figure 1: Key elements of the EREP Toolkit

2. BACKGROUND

The increasing use of our natural resources is putting pressure on the earth's systems. Developed countries typically use more than their fair share of resources; if everyone on earth used resources at the rate that we do in Australia, we would need four planets to sustain us¹.

Moving towards the sustainable use of these resources will reduce this pressure and enable the earth's systems to better cope with the development of all nations. Addressing this challenge is a shared responsibility of governments, business and the wider community. If a truly sustainable solution is to be achieved, all members of the community must play their part.

The Victorian Government is committed to a better quality of life for current and future generations, and will pursue this commitment by ensuring that Victoria's economy, society and environment are developed in a balanced way. The government's sustainability vision, as outlined in *Our Environment Our Future – Sustainability Action Statement 2006*, includes objectives such as:

- improving our energy efficiency
- less waste and increased resource efficiency
- increased water, energy and materials efficiency.

This builds on the vision expressed in previous statements such as *Growing Victoria Together* and *The Sustainable State* that Victoria will be a state where:

- protecting the environment for future generations is built into everything we do
- innovation leads to thriving industries generating high-quality jobs.

As part of the earlier policy statements, the Victorian Greenhouse Strategy ensures that Victoria plays its part in national and international efforts to reduce greenhouse gas emissions. Under the strategy, the EPA Industry Greenhouse Program has required Victorian industries to take cost-effective action to improve their energy efficiency and reduce greenhouse gas emissions. This program, involving EPA licence holders and works approval applicants, provided significant financial benefits to industry while achieving greenhouse gas reductions of over 1.2 million tonnes of CO₂-e per year.

At the same time, a range of voluntary programs run by various government agencies have been providing significant financial returns to companies engaged in activities to improve their materials, energy and water use efficiencies.

EPA Victoria has now developed the Environment and Resource Efficiency Plans (EREP) program to enable the state's largest energy and water users to achieve the available financial benefits that will be found through assessing their resource use efficiency (energy, water and materials use and waste generation).

EPA Victoria has developed the *Environment and Resource Efficiency Technical Toolkit*, in partnership with Sustainability Victoria (SV), to help businesses comply with the EREP program. The Toolkit will also help other businesses that are concerned about resource efficiency to embrace and integrate environmentally sustainable practices into their operations.

CASE STUDY 1: GODFREY HIRST

Godfrey Hirst P/L has reduced the greenhouse gas emissions at its South Geelong carpet manufacturing site by 25 per cent since 2003, through actions that improved the energy efficiency of its operations and saved 10 per cent of its annual energy costs. And, since 2002, the site has reduced its water consumption by 40 per cent and its waste generation by 50 per cent.

Not satisfied to rest there, the company's Group Operations Director, Tim Maishman, said, 'We are looking for more opportunities to improve our business and environmental performance. Through cleaner production processes we hope to replicate the achievements we have made at South Geelong at our other manufacturing sites'.

¹ *The Ecological Footprint of Victoria – Assessing Victoria's Demand on Nature*, EPA Victoria, 2005. Available for download at www.epa.vic.gov.au/ecologicalfootprint/ausFootprint/default.asp

3. BENEFITS FOR YOUR BUSINESS

Efforts to improve resource efficiency and reduce waste will deliver more than just environmental benefits. Such efforts can also enhance business competitiveness by reducing costs, improving risk management, increasing the confidence of investors, insurers and financial institutions, and by improving relationships with local communities.

The pursuit of resource efficiency and triple bottom line (economic, environmental and social) outcomes is an increasingly important management strategy for many businesses. Pursuing resource efficiency objectives helps to ensure business sustainability and provides business opportunities as well as benefits to the environment. The case study examples below illustrate the benefits that progressive businesses have already obtained.

The adoption of resource efficiency best practice will be an important factor in maintaining the future competitiveness of Victorian enterprises and securing the long-term sustainability of Victoria's economy and the environment. Measures to improve resource efficiency – especially those promoting the development and use of energy, water and waste-efficient technologies, practices and processes – will help Victorian commerce and industry compete in the national and international marketplace.

CASE STUDY 2: MILDURA FRUIT JUICES AUSTRALIA

A resource efficiency assessment enabled **Mildura Fruit Juices Australia (MFJA)** to identify opportunities for water and waste reduction, along with unexpected occupational health and safety improvements and energy reductions.

The citrus juice processing plant contains a range of world-best practice equipment and MFJA is now focusing on practices that lead to world-best environmental management. A trade waste partnership with EPA Victoria and Lower Murray Water identified opportunities for waste reduction.

Quick wins have been achieved in modifying existing water recycling, separation of solids from trade waste and a reduction in the volume of cleaning chemicals used – saving over \$6000 per year with a payback period of less than six months. Other benefits have included a drier waste stream and a higher yield of product, with a lower waste volume per tonne of product.

One of the unexpected benefits of the assessment process was employees' increased risk awareness. In looking at process flows, it became evident that there were opportunities to improve trade waste management and control measures, thereby reducing the risk of OH&S incidents. MFJA also significantly reduced Legionella risks by converting the refrigeration condensers to eliminate wastewater and the salt load from flushing.

'Savings made in the initial stages may well help to fund more ambitious future projects,' said General Manager Ron Linton. More improvement actions will be undertaken shortly, while plans also exist for the longer term. 'One of the benefits of the work we have undertaken is that we are now more conscious of the adage, "what you don't measure you don't manage", and this certainly applies to utilities management,' Mr Linton concluded.

CASE STUDY 3: FORD, HOLDEN & TOYOTA

Victoria's three major motor vehicle manufacturers have each reduced their annual energy costs by hundreds of thousands of dollars through energy efficiency actions taken since 2003 under the Industry Greenhouse Program.

Actions at **Ford** (Broadmeadows), **Toyota** (Altona) and **Holden** (Port Melbourne) have reduced greenhouse gas emissions by a total of over 30,000 t CO₂-e per year, with financial payback periods of less than 15 months for each site.

Max Yasuda, President and CEO of Toyota Australia, said, 'Toyota Australia is focused on continual improvement in environmental performance, which includes activities that minimise resource consumption, with particular effort in the areas of water and energy use'.

4. THE ENVIRONMENT AND RESOURCE EFFICIENCY PLANS PROGRAM

4.1 Introduction to the EREP program

The EREP program was established by the *Environment Protection (Amendment) Act 2006* and the details are set out in the *Environment Protection (Environment and Resource Efficiency Plans) Regulations 2007* (‘the Regulations’).

More detailed advice about how to comply with the requirements of the EREP program is provided in the **EREP Guidelines**. A brief summary of the program follows.

The EREP program focuses attention on opportunities to economise on energy, water and waste in production and commercial activities. It is designed to deliver bottom-line economic benefit to business while also achieving positive environmental and social outcomes, by applying some fundamental principles.

1. Financial viability of actions

While the implementation of projects demonstrated to have a payback of three years or less is a mandatory feature of the program, participants are encouraged to identify and develop a range of financially viable efficiency projects in their plans. An integrated approach to identifying and assessing opportunities, as outlined below and further detailed in other modules of this Toolkit, will increase the likely benefits that can be obtained from such a process.

2. Resource efficiency

Sites that trigger the threshold for energy or water must participate in the program and address energy and water consumption and waste generation at their site. Addressing all three resource streams is a key feature of the program and plans should consider the impacts and opportunities that projects have on a business-wide basis.

The EREP Guidelines and this Toolkit promote an integrated approach to resource efficiency, recognising that an examination of business systems across a range of resource categories can yield greater overall results. This approach also makes any potential conflicts between the resource impacts of actions transparent to decision makers, which does not always occur in single-resource programs.

The Toolkit includes an assessment procedure that EREP participants are encouraged to use when examining their resource consumption. It adopts an integrated approach to the relationship between energy, water and waste and guides users towards whole-of-business environmental resource efficiency management.

3. Plan, do, review

The EREP program requires businesses to register, develop a plan, implement that plan over a number of years and report progress annually. EPA recognises that flexibility is required in the development and implementation of plans, enabling projects to be scheduled within established investment time frames and allowing proper consideration of projects that require proving up over several years. A flexible approach will also provide the capacity to revisit payback calculations as conditions and technologies change.

A more cyclical ‘plan, do, review’ approach is outlined in the Toolkit to encourage more regular monitoring and updating of plans as opportunities and circumstances change. This approach also allows an action plan to be aligned with a continuous improvement approach to environmental resource management.

The development of a successful plan will be assisted by:

- strong leadership and management commitment
- supportive policy and business systems
- quality data management processes

- broad involvement of a range of people from across the business
- clear communication of outcomes and ongoing priorities,

The Toolkit details how these can be developed. EPA will assist EREP program participants to strive for best practice resource management by providing tools and information that support a whole-of-business approach to environmental resource efficiency. This Toolkit is one of the key support tools.

While the EREP program is a requirement for all large energy and water users, EPA recognises that other businesses can also benefit from the financial and environmental savings, and ultimately the competitive advantage, of efficiently managing resource use. We encourage businesses generally to consider voluntary participation in the EREP program. This can be done by using the support resources available on our website or by contacting the EREP project team to access the online reporting system and tools.

4.2 Basic EREP program requirements

The EREP program requirements are set out in the Regulations, and detailed information about how to comply with these requirements is provided in the EREP Guidelines. The following is a brief summary of the key requirements.

The EREP program applies to any business that uses at least 100 terajoules (TJ) of energy or 120 megalitres (ML) of water at its premises in any financial year from 2006–07 onwards. Such businesses are required to:

- enrol for the program by registering with EPA Victoria before 31 March 2008
- undertake an integrated resource efficiency site assessment to identify, assess and prioritise improvement opportunities
- submit an Environment and Resource Efficiency Plan (EREP) (comprising all opportunities with a simple payback period of three years or less) to EPA for approval
- implement the actions in the approved EREP according to the implementation schedule
- monitor implementation progress and report annually to EPA.

CASE STUDY 4: KRAFT AUSTRALIA

In 2003–04, **Kraft Australia P/L** consolidated part of its manufacturing operations to its Port Melbourne site. In doing so, the company improved the economies of scale and the change delivered substantial savings in water use, wastewater generation, energy use and CO₂ emissions across its Australian and New Zealand operations.

In 2007, buoyed by these successes, a cleaner production study was undertaken to identify further resource efficiency opportunities. The study concluded that the manufacture of one product required 60 per cent of all water usage, generated 80 per cent of trade waste volume and was the main contributor to trade waste quality. The majority of the resource efficiency opportunities were related to reducing product loss, optimising equipment use and achieving more efficient cleaning practices.

Kraft has committed \$3.2 million over the next three years to implement opportunities identified by the project that will reduce its annual potable water use by 39 per cent (75 megalitres), trade waste discharge by 55 per cent (89 megalitres) and inorganic salt discharge by 180 tonnes, with an overall payback period of 18 months.

This shows that resource efficiency studies using a holistic business management approach can enable businesses to reduce operating costs, increase efficiency and generate more saleable products. It optimises the use of raw materials and can substantially limit the generation of waste products.

'The benefits and opportunities identified from the resource efficiency study are compelling. Our products can be made with less waste generated, which in turn creates more sustainable processes with real economic, social and environmental savings,' commented Calvin Miller, Director Manufacturing Cluster Australia, Kraft Foods Limited.

5. DETAILS OF THE TOOLKIT

A summary of each Toolkit component is outlined below.

5.1 Module 1: Overview

Module 1 outlines some of the benefits of resource efficiency, introduces the Environment and Resource Efficiency Plans (EREP) program, and explains the purpose of the Toolkit and the main functions of each module.

5.2 Module 2: A management systems approach to resource efficiency

Module 2 is a guide to developing and implementing a management system for integrated resource efficiency in your organisation. The information focuses on how to integrate the consideration of all resources (energy, water, materials) and waste in the management system to achieve the optimum sustainability outcome. It can also be used to evaluate how your existing systems are positioned in relation to resource efficiency management.

The module also outlines design techniques and technologies that can help to achieve best practice integrated resource efficiency. It provides case studies to demonstrate actual best practice examples and contains a list of other resources to assist you in researching best practice.

5.3 Module 3: A resource efficiency site assessment procedure

Module 3 contains the site assessment procedure that is recommended for use under the EREP program. The procedure can also be used to guide assessments of resource efficiency for other purposes and will help your business to:

- quantify resource consumption
- establish benchmarks
- identify improvement opportunities
- assess the opportunities in an integrated manner to determine priorities for implementation.

The module contains detailed guidance about how to use the procedure and provides advice about how to engage and get the best from consultants if you need external assistance.

The module also contains case studies that demonstrate the benefits of using an integrated assessment procedure.

5.4 Module 4: Calculating payback periods

Module 4 provides a framework for the financial evaluation of resource efficiency improvement opportunities. Sites will be expected to use this framework for the EREP program. The module includes worked examples of the financial evaluation techniques.

5.5 Module 5: Resource management tools, and where you can get further help

Module 5 provides information links to:

- resource efficiency consultants who can assist you in reviewing your current practices and in identifying, assessing and implementing more sustainable practices in accordance with the EREP program requirements
- some programs that may help to fund certain resource efficiency projects
- information sources about all aspects of resource efficiency best practice and sustainability
- tools to help you calculate the energy value and greenhouse gas emissions associated with different fuels
- tools that can help you manage your energy, water and waste bills.

6. AVAILABILITY OF THE TOOLKIT

The Toolkit can be downloaded from the EPA Victoria web site at www.epa.vic.gov.au.

Limited printed copies of this Toolkit may be available from the EREP Team at EPA Victoria. You can contact the EREP Team by emailing erep@epa.vic.gov.au or by calling (03) 9695 2722.