

YOUR COMPETITIVE ADVANTAGE

Energy efficiency solutions for Australian transport and logistics SMEs



How to guide no.2 Identifying Opportunities

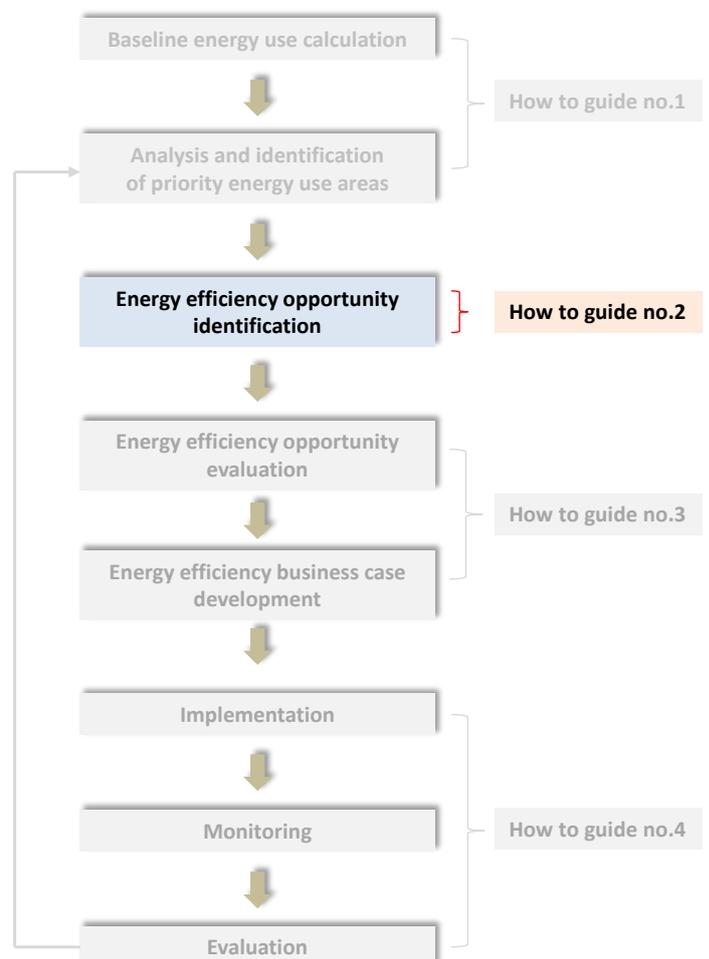
This document provides information and guidance to help identify energy efficiency opportunities in their operations.

It is one of four How-To Guides and other resource material developed by the Supply Chain and Logistics Association of Australia (SCLAA) and its project partners for SMEs in the supply chain and logistics sector.

The full suite of resources can help achieve energy efficiency improvements and energy cost reductions, and is accessible from <http://energy-efficiency.sclaa.com.au>

► Introduction

Within the context of the energy management process outlined in the Overview of the Energy Management Process, this document covers the early steps associated with opportunity identification.



How-to Guide No.1 discussed the importance of data collection. This guide can help you research and identify opportunities relevant to your operation. How-to Guide No.3 provides guidance on assessing opportunities and developing a business case.

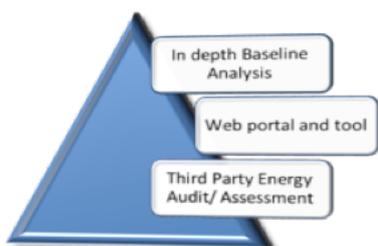
► Resources To Help Identify Opportunities

There are many opportunities to improve energy efficiency in the supply chain and logistics sector. However, different opportunities are more suited to different equipment and different applications. To maximise energy savings, it is important that you match the right improvements to your business.

How you go about identifying opportunities depends on the time and resources you have available. You have to start with an understanding of your current energy use – how much, where, and why – which is called your baseline.

You can then use this Guide and other resources from the web portal to find indicative opportunities. Finally, a detailed energy audit may be needed to understand and justify the project.

Figure 2: identifying opportunities



► Baseline Analysis

By analysing your energy data you can identify which areas of your operations have the greatest potential for savings by segmenting your operation and equipment (see discussion in How-To Guide No.1).

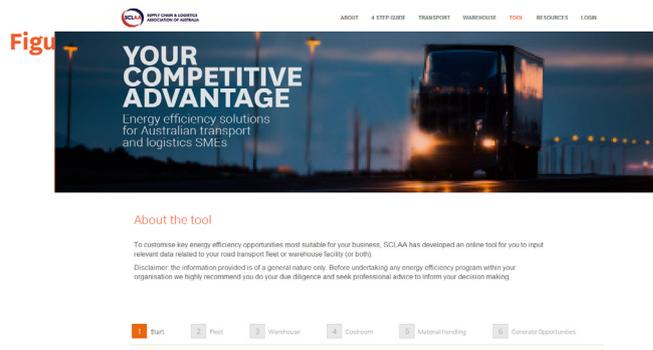
► The SCLAA web portal

Having established where energy is used in the business, typical ideas for saving energy in these areas can be found on the SCLAA web portal (<http://energy-efficiency.sclaa.com.au/home>).

Fact sheet 1 and Fact sheet 2 suggest common options to improve efficiency, which can be investigated further via case studies, suppliers, and others in the industry. To fast-track the opportunities most relevant to your operation, you can use the web tool which will ask for a small amount of your organisation's energy data.

Other free information can be found in the resources section (see back page), from government energy efficiency programs, and in-depth discussions with suppliers. However, for major investments these first steps may need to be supported by additional research and analysis (e.g. an energy audit) to ensure a financially

viable project is identified.



► Energy audits

In order to help identify and quantify relevant opportunities prior to investing in upgrades, it is worth engaging a service provider to conduct a thorough energy efficiency audit of your operations and recommend suitable improvement opportunities. This is especially true for SMEs with energy spends in excess of approximately \$30,000 per year, where the payback on this upfront investment can be recovered more quickly through identified savings.

This option will provide you with detailed and tailored opportunities, and is best suited to those who are time poor, who don't have the knowledge or skills to analyse their operation, and who are prepared to pay an expert to examine their operations.

Suppliers of these services can be found by searching the internet, yellow pages, environment/sustainability magazines, or via government supplier lists (look for "energy auditor" or "energy efficiency audit/service"). In some cases your electricity supplier may be able to recommend a service provider.

► TIP: Ensuring Stakeholder Buy-In

It might sound like the punchline to an old joke, but in the case of energy efficiency the government really is here to help.

The federal government's EEO program requires large energy users (>0.5PJ) to report their energy use and find efficiency opportunities.

The program is supported by a wealth of free energy information, including transport-sector specific information on opportunities in road and rail transport. This is a good place to find detailed advice on energy analysis and opportunities.

Most state governments also have assistance programs for businesses looking to improve energy efficiency. At a minimum, they provide information. Some even subsidise the cost of an energy auditor to help you understand and reduce your energy use.

You've got nothing to lose: you'll most likely learn a lot, improve your efficiency, and probably reduce costs.

► Where to target?

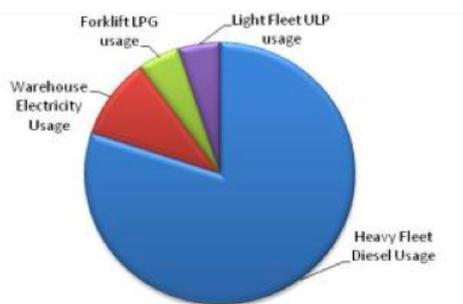
To maximise the benefit of any improvement strategy, it is best to focus on the areas of your operations that are the highest energy users. If you've constructed your baseline well, you should be able to get the relevant information from there.

Segmentation is the key. Analyse your energy usage to group similar things together: this could be by fuel type, location, business-unit, operation type – anything that makes sense to your business and allows you to identify similar areas of high energy consumption.

The example below uses a graph to show energy use by different fuel types. In this case, diesel used by the truck fleet accounts for more than three quarters of energy use – so it's probably the best place to start looking for savings because even a small percentage reduction will be a big saving compared to the other fuels.

Graphs like this are useful for showing others what you're doing and why.

Figure 4: Example of Energy by Fuel Type Segmentation



The further you can segment your operations the better. Identifying areas that are consuming the largest amount of energy allows you to focus energy efficiency efforts in that area in order to have the biggest impact.

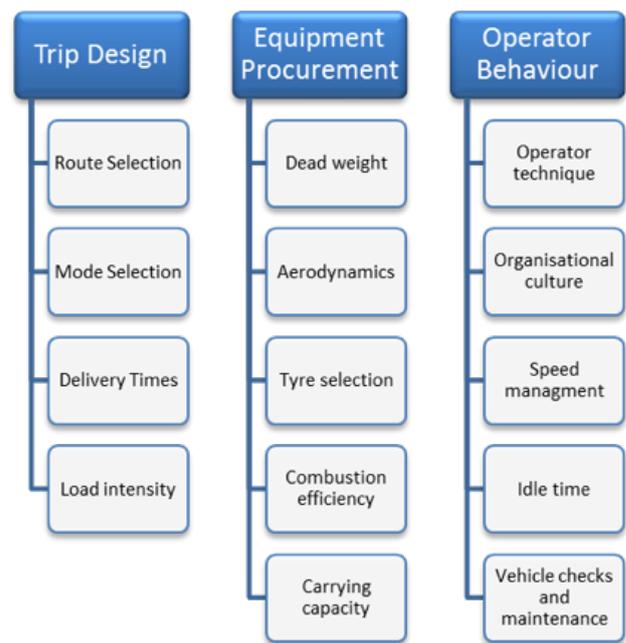
Once you've established the priority areas for savings, you can use the resources on the web portal to prompt investigations into better operational practices and equipment upgrades – see Fact sheets 1 and 2. Many people start by looking at the latter because the efficiency of the equipment determines how much energy is consumed while it is being used.

However, don't forget that there will be opportunities to not use the equipment at all (eliminating the need to use energy altogether) through changes in practice. Examples include switching off lights when rooms are unoccupied, turning idling engines off, or reducing the number of trips made by forklifts and trucks by consolidating loads or multi-tasking trips.

A good example of this can be seen in transport operations. Many factors influence how energy is used (see Figure 5). You can certainly buy more efficient trucks to save small amounts of energy; but changing behaviour or company policies can produce equal savings at lower cost (often, changing behaviours

doesn't require major capital investment). And by working with the supply chain, even bigger savings can be made by eliminating or changing trips (route, delivery time, loads).

Figure 5: Factors influencing fleet energy use



► TIP: Engage Your Staff

Having first-hand experience in operations, employees are not only a useful resource in identifying solutions, but engaging with them in the process helps to promote awareness of energy efficiency measures, share the burden of work, and gives people a purpose.

► Check list

When identifying suitable opportunities the following check-list provides a good starting point for consideration:

- Has all the relevant data been collected?
- Has the company's (or site's) baseline energy use been segmented?
- Has the highest area of energy consumption been identified?
- Has the online tool been used to provide some ideas around opportunities?
- Have further resources been consulted?
- Have all business limitations been considered?
- Have you shortlisted the top opportunities?

If so then you are ready to evaluate your identified opportunities and develop a business case for implementation (see How-To Guide No. 3)

► Further information

Save Energy, Cut Costs: energy efficient warehouse operation

A UK based guide to enable organisations to identify prioritised opportunities, develop a business case and implement an energy reduction programme

http://www.ukwa.org.uk/_files/23-carbon-trust-23.pdf

Ecostation Fleet Assessment Tool

Tool for developing a fleet baseline of fuel and emissions, as well as fleet structure

<http://www.ecostation.com.au/ReducingEmissions/>

Vic: Smarter Resources, Smarter Business

Government support programs for energy efficiency

<http://www.sustainability.vic.gov.au/Services-and-Advice/Business/Smarter-Resources-Smarter-Business>

NSW: Energy Saver

Government support programs for energy efficiency

<http://www.environment.nsw.gov.au/sustainbus/energysaver/>

NSW: Sustainability Advantage

Government support programs for energy efficiency

<http://www.environment.nsw.gov.au/sustainbus/sustainabilityadvantage.htm>

QLD: EcoBiz

Government support programs for energy efficiency

<http://www.cciqecobiz.com.au/>

Green Truck Partnership

Trials of fuel-efficient technology under the Green Truck Partnership

www.rms.nsw.gov.au/heavyvehicles/greentruck/

Fuel for Thought

A federal government resource (under the EEO program) identifying energy saving opportunities in the road and rail freight sectors

<http://eex.gov.au/files/2012/03/Fuel-for-Thought.pdf>

Smartway Transport Partnership

A US program to reduce fuel use and emissions from the freight transport sector – similar to NSW Green Truck Partnership in that it tests fuel-saving equipment

www.epa.gov/smartway/

Energy efficiency assessments

Overview of energy efficiency assessment process

<http://eex.gov.au/energy-management/energy-efficiency-assessments/>

FleetWise

Knowledge pool documents provide information on energy efficiency improvements for light vehicle fleets

<http://www.transport.vic.gov.au/research/sustainability/fleetwise>

Supply Chain Energy Efficiency – Engaging Small & Medium Entities in Global Production Systems

A report looking at various elements of energy efficiency in the supply chain

http://business.edf.org/sites/business.edf.org/files/EDF_Supply_Chain_Energy_Efficiency_Report.pdf

Clean Energy Regulator Auditors

Register of Greenhouse and Energy Auditors by state

<http://www.cleanenergyregulator.gov.au/National-Greenhouse-and-Energy-Reporting/Auditors/register-of-greenhouse-and-energy-auditors/Pages/default.aspx>

8 Step Guide to Supply Chain Sustainability

Interactive guide including several tools to help users define projects to reduce supply chain costs and create value.

<http://www.pacia.org.au/reports/8StepGuide>

The following are private sites. SCLAA does not endorse these sites but are supplying the links for user reference only.

Greenearth lighting case studies

Range of Metrolight case studies

<http://www.greenearthenergyefficiency.com.au/casestudies/>

Forklift driver tips for cost efficient driving

20 simple tips for keeping drivers and load safe and moving up to speed and reduce needless energy wastage and wear and tear

<http://www.toyota-forklifts.eu/en/Support/Pages/CB-driving-tips.aspx>

 Learn more on how to make your business more energy efficient at **sclaa.com.au**

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