



5 Minute Guide 3.1

PACIA

energy+

Turn energy savings into business power

Key considerations to maximise the energy efficiency of new equipment purchases

This 5 Minute Guide provides guidance on the key things to consider before investing in new equipment. Often the cumulative cost of energy to run equipment over its life far exceeds the capital cost of the equipment. One of the most important steps to fully optimise your energy efficiency is to therefore look at your overall process as well as the individual equipment items.

Purchasing new equipment is a significant opportunity to reduce energy use because:

- Newer equipment is generally more energy efficient.
- Buying new equipment gives you an opportunity to discuss energy efficiency with your equipment supplier.
- You can review your equipment needs, system requirements and potentially reconfigure equipment to reduce energy use.

Before purchasing new equipment

To ensure you achieve the most energy efficient outcome from new equipment, think about the following questions:

- ✓ Should you replace like with like, or can you explore alternatives?
- ✓ Can you rearrange the equipment and related processes to optimise processing capacity and reduce energy consumption?
- ✓ What alternatives and support does your equipment supplier offer?
- ✓ What is the energy demand of the new equipment and what is its energy rating?

In most cases, instead of purchasing a new version of the same equipment, it is worth looking at your whole process, equipment use and production needs to ensure you save the most energy and money when putting in something new. This is equally relevant whether 'new' means something completely new or a second hand item that is new to your business.

Reduce demand

Before heading out to buy equipment and replacing like with like, you should reduce energy demand as much as possible by reducing the energy required by the new equipment. This change would potentially reduce the size and cost of new equipment you are about to purchase.

A review of your whole processing requirement will present opportunities for system optimisation.

For further information on **reducing the demand of existing equipment**, refer to PACIA energy+ Topic #2: Energy usage of existing equipment.



An example of a **non-energy input to the business case** might be the cost of hiring a cherry picker to change the lights in a large warehouse. When this cost is analysed along with the energy savings gained from the new lights, the purchase and installation of longer-lasting, more energy efficient high pressure sodium discharge lamps is a **smart business investment**.

Understand your needs

An assessment of current and future projected requirements for your processing system, as well as the specific new equipment, will ensure appropriate sizing and capacity. This will help to avoid the installation of equipment that may exceed requirements and therefore waste energy.

Selecting equipment

Industrial equipment like lighting, commercial refrigeration, three-phase motors and air conditioners is required to have energy rating labels. This valuable information will help you choose the most energy-efficient equipment, which can save money in the longer term. When selecting new equipment, ask your supplier for information on its energy demand and use. If necessary, ask your supplier to test the equipment to determine its energy demand.

Remember to
**refer back to your
energy plan regularly.**
Go to the PACIA energy+
portal for help in setting
up your plan.

Building the business case

Lowest price is not always lowest cost. More expensive equipment may improve production and use less energy, thereby being less expensive to operate and more productive over its life.

Understanding the business case for new equipment presents opportunities for reducing energy use. This takes into account all business issues, not just the simple price of the equipment.

Opportunities can be missed by:

- Not considering all the costs and basing decisions only on price.
- Not considering all the benefits.
- Expecting purchases to pay for themselves too quickly.

The business case is a financial analysis taking into account factors such as:

- Purchase price
- Repair and maintenance costs
- Tax treatments and incentives
- Government funding and incentives
- Operating costs
- Energy use (and future costs)
- Productivity
- End-of-life disposal

A strong business case includes a measure of financial payback to the business for the proposed investment. There are many resources available online to help you.

This is just one piece of the energy efficiency puzzle!

There are many other areas that you should also consider. PACIA energy+ covers the key topics and provides you with the tools and information you need to improve your energy efficiency and reduce costs. PACIA energy+ has been designed specifically for businesses in the chemicals and plastics industry.

Go to the PACIA energy+ portal for more: www.paciaenergyplus.org.au



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