

CHEP case study:

20% reduction in emissions intensity



CHEP is investigating ways to achieve a 20% reduction in emissions intensity by 2020 compared to its 2015 baseline.

The clean energy strategy has focussed the business on what's possible. CHEP now has a strategic shopping list of initiatives that will optimise productivity, manage costs and reduce carbon emissions.

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Summary

Driven by a clean energy strategy CHEP has identified a suite of projects that will deliver significant greenhouse gas reductions up to their 2020 target year and beyond.

This case study highlights the potential for significant operating cost savings by implementing a range of clean energy measures. CHEP's initiatives will inform the development of their 2030 targets.

About CHEP

CHEP is a subsidiary of the global logistics company Brambles, which started its operations in Sydney in 1925, and now operates in more than 60 countries. CHEP's strategy in NSW focuses on two sites – Beresfield near Newcastle and Erskine Park in Western Sydney.

Each site repairs wooden pallets which are used as a platform to transport a wide range of products across complex supply chains.

Current energy situation

Pallet repair is an energy-intensive process. It requires compressed air systems, motors and spray-painting booths. The facility has extensive lighting across the factory, yard and office and uses office air-conditioning.

Electricity is the main energy source for both sites, and the dominant source of greenhouse gas emissions (>80%). LPG is consumed on site as forklift fuel. No natural gas is used.

Analysis found each site's emissions intensity was sensitive to production – emissions per unit rose when production decreased.

As part of its commitment to address the United Nations Sustainable Development Goals, Brambles set a goal to reduce emissions intensity across all operations by 20% below 2015 levels, by 2020. CHEP's clean energy strategy aligns with this goal.



Figure 1: Solar PV concept for the CHEP Erskine Park site

What is a clean energy strategy?

The NSW Government is actively encouraging businesses to develop clean energy strategies for achieving 100% renewable energy and emissions reduction.

A strategy includes an individually crafted mix of measures for reaching a clean energy target. Measures might include energy reduction, energy efficiency, on-site solar or other renewable energy, off-site procurement of renewable energy or purchase of carbon emission offsets.

Fast facts: CHEP's energy situation and clean energy strategy

	Electricity consumption	<ul style="list-style-type: none"> Estimated at 25,000 megawatt-hours per annum
	Energy cost	<ul style="list-style-type: none"> Estimated at \$2.4 million per annum
	Clean energy target	<ul style="list-style-type: none"> 20% reduction in emissions intensity by 2020 compared to its 2015 baseline
	Possible measures	<ul style="list-style-type: none"> Energy efficiency and on-site renewables Off-site renewable energy and offsets

Setting a target

CHEP selected the Erskine Park and Beresfield sites to develop its clean energy strategy as they are expected to remain operational for many years, are under long leases, and have significant sunk cost in on-site equipment. The workforce on both sites were engaged in the strategy – from management through to manufacturing.

Management preferred to track the performance of sites separately, rather than combining the sites to an overall goal. Also, no interim annual goals were

set as many of the projects considered were not continuous but large one-off projects.

Investing in energy efficiency and clean energy will offset higher electricity prices, which aligns strongly with CHEP's priority to drive operational efficiency.

During 2018, CHEP intends to set longer-term targets through to 2030. These will be informed by the clean energy strategy and the science-based targets methodology.

CHEP's strategic pathway





Measures to reach the target

Lighting

Changing all building and yard lighting at the Erskine Park site to LED lights would generate annual savings of \$40,000 and 300 tonnes of carbon emissions.

Depending on the success of the project, the upgrade will be extended to the Beresfield site building.

Compressed air

Repairing air leaks at Erskine Park should save 10% of compressed air use. This would reduce annual emissions by about 92 tonnes and save about \$14,000 per year.

Forklifts

Using forklifts more efficiently, such as consolidating loads, could save \$15,000 a year in LPG fuel and reduce emissions by around 35 tonnes annually.

On-site renewable energy

Installing a rooftop solar PV system at each site – 431 kilowatts at Erskine Park and 100 kilowatts at Beresfield would generate 26% and 21% of the site's electricity respectively. The combined savings of these systems could be more than \$130,000 per year, along with greenhouse gas emission reductions of nearly 600 tonnes.

CHEP's key clean energy strategy takeaways

Energy efficiency first: Energy efficiency should be in all clean energy strategies since it is often the cheapest opportunity to reduce energy costs and greenhouse gas emissions. Keep in mind that each site has specific energy demands. Investigate each clean energy measure within the site's context to ensure it doesn't cause disruptions to operations. This can reduce the expected benefit from a project.

Interactions between clean energy measures: While each clean energy measure needs to be feasible, consider interactions between measures. For example, electric forklifts can be combined with solar PV to deliver a clean energy solution that overcomes the limitations of LPG.

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