

MAINTAINING THE BALANCE OF POWER

Introduction

The way we use power is changing. From innovation like solar farms and electric vehicle chargers to the growing number of devices we use daily in our personal and business lives, as technology becomes more energy efficient, more compact and offers greater control and flexibility, one of the shortcomings is the impact on power quality.

NHP offers customers product flexibility through specialised and tailored manufacturing solutions with designs and ideas brought to life at the state-of-the-art National Manufacturing and Distribution Centre in Laverton, Melbourne.

The 12,000 square metre facility develops world-class, customised solutions through manufacturing, assembly, servicing, design, engineering and the distribution of over 15,000 stocked lines.

Supported by extensive inventory-management technology and coordinated warehousing, this facility is the beating heart of all NHP's distributed products, dispatching thousands of units each day throughout Australia and New Zealand.

Project Overview

NHP's National Manufacturing and Distribution Centre had a power factor of approximately 0.8 lagging. Poor power quality influences electrical installations in many ways, including driving up energy costs, lowering overall energy efficiency, causing nuisance tripping of circuit breakers, adding stress to infrastructure and damaging equipment. NHP's facility required an innovative solution to correct the power factor and improve the power utilisation onsite while also greatly reducing electricity bills.

As an industry leader in power factor correction upgrades, NHP's own products and services were selected to deliver the best result.

The Solution

To pin point areas of decreased performance, NHP's InfoSyte™ was utilised to visualise both real-time and historical data. A powerful cloud hosted energy management platform, the product integrates with energy measuring devices along with other facility systems to identify inefficiency, disjointed and complex systems, lost or unknown data and value return.

"NHP's InfoSyte™ gave us the flexibility to centralise not only all of the site's energy data, but also surrounding environmental data to form a single point of information that allowed us a comprehensive overview of the site's operating status. Using this data, we could easily identify areas where we needed to improve the operational efficiency," said NHP's Product Marketing Manager – EMCS & Building Automation, Justin Charlot.

With load requirements continuously changing, a solution was needed that could respond dynamically to a wide range of power factor issues

The Static Var Generator (SVG) from Delta was selected for the project, as the advanced performance of the unit offers complete power factor correction by responding quickly and efficiently to reactive power requirements.

The SVG also has minimal maintenance requirements and the modular rack units made installation and retrofitting easy so the capacity of the unit could be expanded in the future as necessary.

"We specified and installed this product as it has the capacity to increase a lagging power factor to 0.99, and maintaining this under any load condition. It also can correct leading power factor, as well as balancing single phase loads," said Mr Charlot.

Installed with the support of NHP's experienced service team, seamless integration was achieved with a customised solution that was tailored to the specific site and the expert guidance given during installation ensured a successful outcome for the project.

"NHP prides itself on supplying world-class product and systems, but more importantly support these with an expert team that customers can rely on," said NHP Service Technician James Huf.

NHP is proud to continue to set the benchmark for delivering the world's best products and solutions to the local market by keeping its National Manufacturing and Distribution Centre at the forefront of efficient technology and operations.

The power factor upgrade at NHP's Laverton facility delivered immediate improvements in energy efficiency which leads to lower power bills, improved energy utilisation and less impact on the environment through a reduction in carbon emissions.



Project Fact File

Project: NHP's National Manufacturing and Distribution Centre

Location: Laverton, Victoria

Details: NHP's facility required an innovative solution to correct the power factor and improve the power utilisation onsite while also greatly reducing electricity bills.

NHP Products/Services:

- NHP InfoSyte™
- Delta Static Var Generator



The above images showcase the before and after installation of the SVG unit. Before turning on the SVG unit, the power factor (green line) is shown to vary down to 0.8 around 4pm on August 22, 2018, the moment the SVG unit is switched on the Power Factor improves instantly and remains at target power factor under all load conditions. (This is all data captured via InfoSyte – this has not been manipulated).