

# Chesterfield Tractors

## Lighting upgrade

Located in Goondiwindi, Queensland, Chesterfield Australia is an agricultural and construction equipment company. The Goondiwindi site has both workshop and a retail spaces requiring specific lighting.

### Background

During the financial year 2012-13, the facility consumed 119,984kWh of electricity, emitting 103 tonnes of carbon. An energy audit identified potential energy-efficiency cost-savings through lighting upgrades worth approximately \$6605 per annum with an average payback period of just 2.2 years. These savings represent approximately 17% of the energy currently used by the audited buildings. Upgrades were also required that do not lead to a trade-off between task lighting and energy efficiency.

The main opportunity is in upgrading 18x150 Watt metal halide lights and fittings in the retail space to 47 Watt LED fittings. The LED fittings are required to provide high colour rendering index of 85+ and efficacy of 70-74 lm per W.

Another opportunity was in upgrading 53x36 Watt T8 Fluorescent tubes to 20W LED tubes. While there are lower wattage LED tubes available, QMDC has recommended the higher wattage tubes as they provide a better light intensity for the tasks required.

The facility requested an energy audit to determine existing energy usage to be used to reduce power use. Other options identified, including refrigeration and air conditioning upgrades, can further reduce energy use.

**The list of potential lighting upgrades includes:**

Current lighting	Proposed measure
14W exit signs	Replace with 4W LED Exit Signs
Metal halide 150W	Replace with LED 47W
T8 fFluorescent 43W	Replace with LED 20W
Halogen 50W	Replace with LED 10W
T8 fluorescent 17W	Install movement sensor
Mercury vapour 300W	Replace with LED 150W
Metal halide 300W	Replace with 150W LED