



# MUSWELLBROOK DISTRICT WORKERS CLUB: DIVERSIFYING CARBON EFFICIENCY

*Commercial, Sports & Leisure*

*Creating a bespoke, diversified solution to help a community lifestyle complex reach its decarbonisation goals.*

## | The challenge

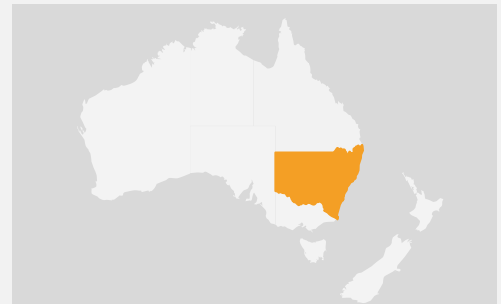
The Muswellbrook District Workers Club (MDWC) is a major community recreation centre in the Hunter Valley in country New South Wales. The club promotes the wellbeing of community members through its support of local charities, sporting, and community groups, hosting social events, and offering meeting and function room hire.

Looking to improve its carbon footprint, the MDWC was seeking a solution that advanced its energy efficiency capabilities, while maintaining a high standard of comfort for its various members and guests.

## | Veolia's solution

In 2015, MDWC awarded Veolia an Energy Performance Contract (EPC) that consisted of a comprehensive energy upgrade to MDWC's facilities with the aim of enhancing comfort for patrons while reducing the club's environmental impacts.

Veolia designed and implemented a tailored, practical project plan that proposed facility and technology improvements which would decrease MDWC's direct emissions, carbon footprint, and operational costs. By combining a diverse range of energy conservation and renewable solutions, Veolia was able to guarantee an energy saving of at least 209,000 kWh per year, with a potential annual reduction **up to 355,000 kWh**, resulting in thousands saved in energy bills.



Muswellbrook, NSW, Australia



### Contract Facts:

Duration: 2015-2025

Type: Energy Performance Contract

Diversified solution to guarantee results

**332 tonnes**

GHG emissions reduction per year

up to **355,000 kWh**

energy saved per year



Variable speed drives installed on HVACs

## Veolia's EPC solution included the following energy conservation measures:

- Installation of a 100kW Solar PV system to reduce reliance on fossil fuel-sourced electricity.
- A full lighting upgrade through the installation of efficient LED lamps and fittings.
- Upgrading the existing DX HVAC system with a new high-efficiency chiller.
- Replacement of existing air handling units, further increasing HVAC system efficiency.
- Replacement of existing ducted split DX systems to CHW Fan Coil Units further increasing HVAC system efficiency.
- Implementation of economy mode and CO2 control to the new Air Handling and Fan Coil Units.
- Replacement of the existing Diesel Fired Heating Hot Water Boiler with a more efficient LPG Condensing Boiler.
- R134a refrigerant gas introduced to provide chilled water without drawing from electricity sources.
- Installation of a Building Management Control System (BMCS) to further improve environmental conditions and reduce energy consumption.

Veolia developed a **comprehensive, turnkey approach** that included the design, build, asset management, and performance guarantees on energy reduction initiatives. This diversified approach maximises MDWC's return on investment, ensures patron satisfaction, and minimises owner risk by guaranteeing energy reduction results.

## | The benefits

### Greater energy independence

Introducing a solar photovoltaic (PV) system to the site reduces MDWC's reliance on fossil fuels to power its facilities, generating approximately 146,000 kWh in renewable energy per year.

### Reduced carbon footprint and greenhouse gas (GHG) emissions

Using Veolia's solutions, **332.27 tonnes** in GHG emissions were avoided per year, which was largely achieved by reducing annual diesel consumption by **4,666L** and carbon dioxide (CO2) emissions by **249 tonnes**.

### Guaranteed results

Veolia's diversified approach ensured that MDWC's energy use would decrease by **at least 209,000 kWh** per year, with a potential total saving of **355,000 kWh** weather permitting.

Energy Conservation Measure (ECM)	kWh Savings	GHG Reduction (tonnes)
Chiller upgrade, remote air cooled condenser, air handling units, DX ducted split AC units and HHW.	162,990	136.57
Installation of a 100kW Solar PV system.	146,000	125.56
Upgrade lighting to LED	46,010	39.57
<b>Total Savings</b>	<b>355,000</b>	<b>332.27</b>

## VEOLIA'S PURPOSE: committing to a multifaceted performance



### SOCIAL

Community events and partnerships with local charities to promote energy efficiency practices.  
Economic boost of the local area.  
Lower CO2 emissions.  
An operational solution that will consume fewer environmental resources (energy) that are more economically efficient.



### ENVIRONMENTAL

Reduce carbon footprint