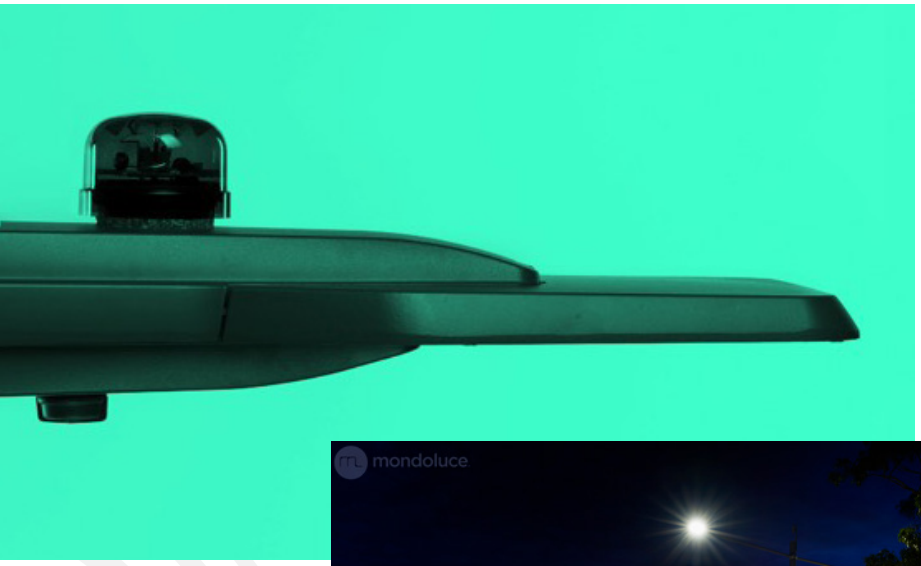
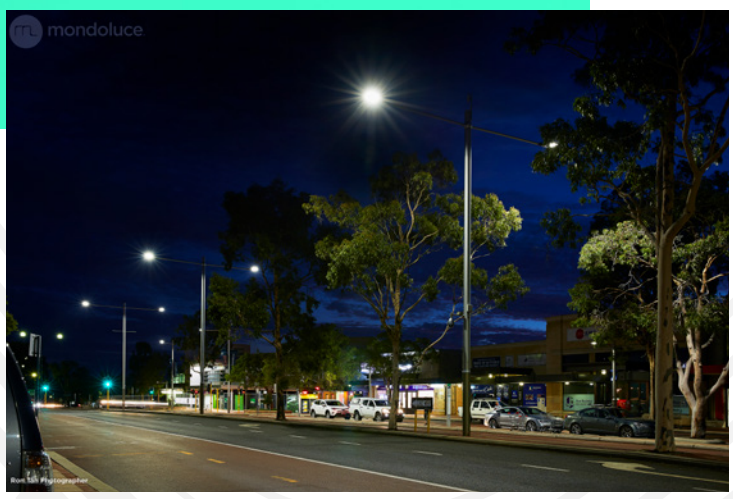
Telensa

Smart street lighting for energy savings & improved control

Several years ago, the City of Joondalup chose Telensa to start their smart lighting journey. Their plan was to deploy a network capable of supporting streetlights over a large area, to get better insights into how their streetlights were performing, to find new efficiencies and ultimately deliver a better lighting service to the community. With nearly 1,800 Telecells deployed across Joondalup, the City is now able to react quickly to outages, create customised dimming and control programs and make significant energy savings across their street lighting network.





Case study:

The City of Joondalup, Western Australia

Smart LED street lighting for energy savings & improved control

"Connecting our streetlights has given us the ability to make informed decisions on maintenance and have a proactive approach to resident requests. We have used the savings in maintenance costs to reinvest into additional smart street lighting and LED fixtures, all making Joondalup a smarter place to live."

Garry Hunt
CEO

City of Joondalup

Drivers behind the project
Immediate energy savings

Joondalup is a primary centre for the Perth metropolitan area, amassing 39 sq.kms and over 1,800 connected streetlights. The city had an ageing and varied street lighting portfolio consisting of main-road luminaires and also post-top decorative and underpass lighting. The city wanted to phase out mercury systems and use the opportunity to leapfrog to a more efficient system thereby providing better value to residents. Improved energy consumption was key. Joondalup has both metered and unmetered lighting and the business model was clear that smart LED streetlights would lower the city's energy consumption substantially.

Case study:

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"We wanted to work with a company that had proven smart lighting deployments in a similar climate to ours, as Joondalup is hot and close to the ocean and a company that provided a high level of technical support"

David Hale
Electrical Projects Engineer

City of Joondalup

Central Management System
Data & fault reporting

Central control of the connected streetlights is provided by Telensa's Central Management System (CMS) called PLANet®. Purpose built for connecting high volumes of devices with relatively small amounts of data such as is the case with IoT deployments, Telensa's Ultra-Narrow-Band (UNB) wireless technology connects Joondalup's 1,800 street lights into the CMS. Thanks to the extensive reach of each of the Telensa Base Stations, just three of them were required to cover the whole area with full redundancy and spare capacity built in. Their long range means Telecells installed to the north of the City will be able to communicate via Base Stations installed 10 kilometers away further south.

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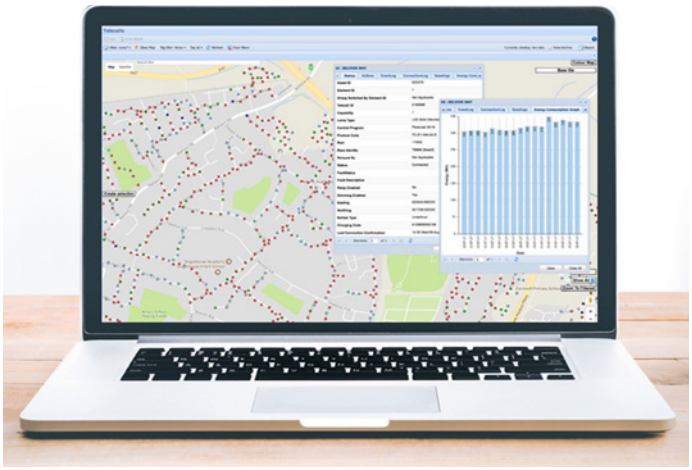
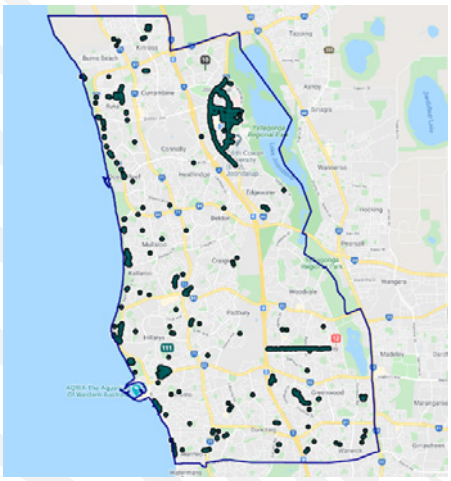
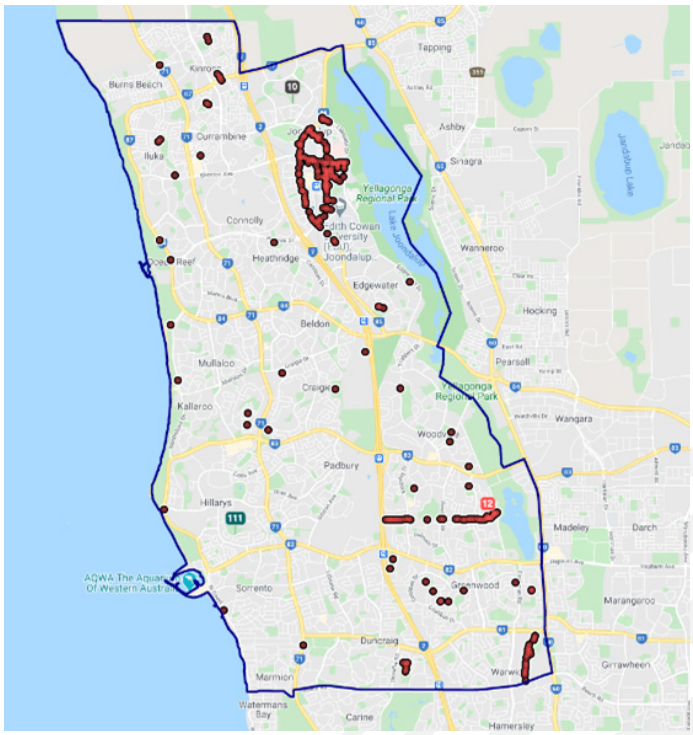
The City of Joondalup is collecting data through the use, and customisation, of monitoring and alarm programs. Those programs return a wealth of information (e.g. metering, burning hours, electrical data, supply data, faults) on a daily basis.



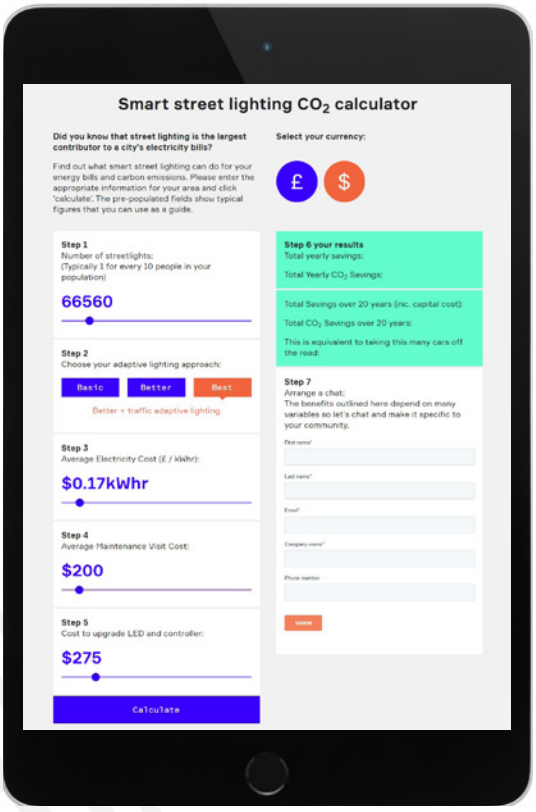




The business case
Reducing the energy bill

Whilst Telensa is providing hosting, software updates and day-to-day support, the City of Joondalup own the network and operate it themselves. The City looks after the Base Stations, performs regular maintenance and pays the data charges for the network. This approach gives the City full independence and yields a lower price point per street light. Network ownership is the most cost-effective approach for the size of their network and it brings down the cost of operations significantly. Telensa also offers a network-as-a-service model which may provide an improved business case for customers with small scale deployments.

telensa.com/resources/calculator



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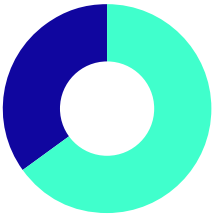
Since the start of Joondalup's smart LED streetlight upgrade, they have saved 65% on energy costs, in some areas even more. These savings have helped offset the price increase of energy, making the City of Joondalup more efficient in terms of both energy usage and public spend.



65%

saved on energy costs

Further savings
Responsive lighting and fewer truck rolls

Prior to their smart streetlight deployment, Joondalup would need to pay a call-out fee to inspect lights and to check out faults. With Telensa PLANet®, Joondalup now has access to comprehensive, real-time data and can respond efficiently. Faults are displayed on a dashboard to help with scheduling maintenance.

The CMS has also provided the city with more responsive lighting particularly for its recreational lighting in parks. As an example, lighting can now be adjusted remotely allowing the city to provide tailored lighting for specific occasions, such as for organised public events. The city could choose to monetise this feature by charging third parties for customised lighting.

PLANet has put control back into the city's hands. The Telensa CMS has made it possible for Joondalup to automatically control their street light assets, to dim light levels, trim the time lights are on, manage constant-light-output and manage maintenance operations more efficiently.

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"We receive phone calls from our CCTV operators asking is the supply on the pole out, as their cameras are not working. When we check the system and we get a reading back from the telecell, we know it's not our issue, so we don't send the wrong contractor to the job."

David Hale
Electrical Projects Engineer

Making brighter cities

Telensa PLANet® is the world's most deployed smart streetlight solution, with a global footprint of two million lights. Building on the compelling business case for its smart street lighting, Telensa's Urban IQ provides cities and utilities with an open, low-cost platform to add multiple sensors.

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