

LED Rollout Project



Paul Gowans
Principal Engineer



26 sqkm

25% of NSW GDP

8% of National GDP

200,000 businesses

390,000 workers

1M visitors a day

4M tourists a year

Sydney 2030 Vision

The Sustainable Sydney 2030 vision for a world-leading metropolis requires the City to respond to the changes that are occurring through its growth. The overarching themes for Sydney 2030 are:

- An integrated inner Sydney transport network
- A liveable green network
- Activity hubs as the focus for the City's village communities and transport
- Transformative development and sustainable renewal
- A revitalised city centre at the heart of a global Sydney

"By 2030, the City will reduce greenhouse gas emissions by 50% compared to 1990 levels, and by 70% compared to 1990 levels by 2050."

**We have
committed
to reducing
emissions
by
70%**

LED Revolution

- Sydney's largest contributor to energy bills and Green House Gas emissions is public domain lighting
- Light Emitting Diode (LED) technology offered potential energy savings of approximately 40%



LED Trial Project

- Commenced - November 2009
- 118 LED lights installed
- Public participation in the lighting evaluation process
- 2010 three companies install LEDs with light controls
- Remote monitoring of energy use
- Monitoring of lighting levels



George Street, Sydney

LED Trial Results

- Energy and greenhouse gas emissions savings of 11% to 74%
- 14 of the 16 locations - recorded greenhouse gas emissions savings of over 40%
- Vertical illumination values - average increase of 18.5%
- Horizontal illumination - 5% increase.
- Overall uniformity - increased by an average of 1%



Benefits over Conventional

- Long life
- Lower maintenance and costs
- Mercury free
- Control facility
- Energy saving
- Low emissions
- Better colour rendering



Before



After
George Street, Sydney

LED Rollout Project

The background of the slide is a dark, high-contrast photograph showing the silhouettes of construction workers on a site at night. One worker is visible in the foreground, and another is further back, both appearing to be working on a structure. The scene is dimly lit, with some light sources visible in the background, creating a dramatic, industrial atmosphere.

- Contract value - \$7.1 m
- 3 year delivery
- GE/UGL Joint Venture
- Design, install, commission and maintain - 6448 lights
- Project Commenced March 2012

Outcomes and Results to-date

- 2,762 lights installed
 - 2,234 street lights
 - 528 park lights
- 44.99% energy savings
- 1,603T CO2 annual greenhouse emission reduction
- Vertical light levels 12% increase
- Horizontal light levels 4.5% increase
- No failures reported to date



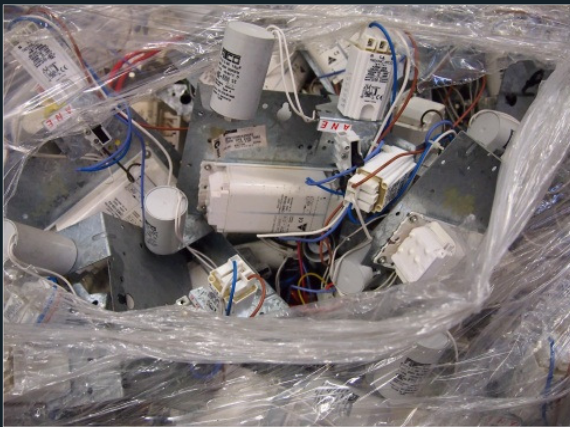
Outcomes and Results to-date

| Initial Concerns | Actual Outcomes |
|---|-------------------------|
| Uniformity | Good as existing |
| Target of 2,706 lights to be installed by February 2014 | Ahead of schedule |
| Public reaction | Positive |
| Colour temperature variations | Accurate and consistent |
| Energy saving target | On target |



Recycling Old Luminaires

- Lamps Recycled
- Control gear separated
- Aluminium and plastic housings
- Glass challenging because it is hardened



Installation - Sydney Town Hall

Installation in parks

CITY OF SYDNEY

