

Commercial Lighting Upgrades and Performance Evidence

Canonical: <https://northmoregordon.com/technologies/commercial-lighting/>

Details:

Scope · Design · Certificates · Measurement · Project brief

A commercial lighting project can reduce electricity and maintenance demand while improving control, visibility and asset reliability. The assessment still needs to preserve lighting quality, safety, operating requirements and the evidence needed for any certificate claim.

Northmore Gordon can connect a lighting inventory and investment case with energy auditing , current scheme assessment and post-installation performance review.

Define the asset and operating boundary

Record each area, luminaire type, quantity, wattage, control, operating schedule, maintenance condition and responsible party. Distinguish tenant lighting, base-building services, external lighting and process or safety lighting. Note planned occupancy, layout or operating-hour changes that could affect the comparison.

A complete inventory reduces quoting gaps and supports a like-for-like option comparison. It also identifies areas where controls, zoning or daylight response may provide more value than a simple lamp replacement.

Protect service quality

define required illuminance, uniformity, glare control and colour characteristics;

identify emergency, egress, hazardous-area and task-lighting requirements;

test sensors, schedules, dimming and building-control integration;

consider access, maintenance, heat, dust and environmental conditions;

confirm product approvals, warranties and replacement support; and

document commissioning settings and user handover.

Energy savings should not be achieved by under-lighting the work area or disabling necessary services. The design basis and acceptance tests should be agreed before installation.

Assess certificate eligibility separately

Eligible projects in Victoria or New South Wales may create VEECs or ESCs under the current activity and equipment rules. Technology alone does not prove eligibility. Confirm the premises, products, implementation date, provider, calculation method, prior incentives, evidence and certificate ownership before committing to the upgrade.

Ask whether a quote is an indicative gross certificate value or the customer contribution after fees and conditions. Keep certificate quantity and market price as separate assumptions, and show the investment case without unconfirmed support. The government schemes guide explains the main state programmes.

Demonstrate what changed

A prescribed calculation may use equipment and operating assumptions; a project-based pathway may require more direct measurement. For an M&V approach, define the circuits, baseline period, operating variables, instruments and post-project assessment before the old equipment is removed.

| Output | Meaning | | --- | --- | | Engineering estimate | Expected savings from the inventory, wattage, controls and operating assumptions | | Verified result | Savings established under the agreed boundary and measurement period | | Certificate result | Quantity accepted under the scheme calculation and evidence process |

Record installation dates, removed and installed equipment, commissioning, control settings and concurrent site changes. Compare performance under representative operating conditions.

Information for a lighting assessment

Provide the site and jurisdiction, building or tenancy boundary, lighting schedule, asset inventory, floor plans, recent bills or submeter data, proposed equipment, controls, quotations, installation timing and any prior certificate arrangements.

Related guidance includes sector operating constraints, NABERS and building performance and the Metcash lighting case study. Historical cases show project types; they do not establish today's certificate rules or savings for a new site.

Contact Northmore Gordon before installation to confirm the assessment and evidence scope.

What is the relationship between commercial lighting upgrades and energy audits?

Commercial lighting is often a significant component of total building energy consumption and should be investigated as part of a comprehensive energy audit. Energy audits identify lighting as a potential efficiency opportunity and help prioritize it among other upgrades like HVAC, refrigeration, and controls. An audit establishes the baseline lighting load, usage patterns, and equipment condition before assessing whether replacement or controls improvements are justified. Our audit services can determine whether commercial lighting warrants capital investment by comparing the energy savings potential against other competing opportunities and calculating payback periods aligned with the organization's investment criteria.

How should commercial lighting be assessed within a broader facility energy-management system?

Commercial lighting should be integrated into an organization-wide energy management system alongside other major energy uses. This requires assigning responsibility for monitoring lighting performance, maintaining equipment records, and investigating unexpected changes in consumption. A useful energy management approach would track lighting-related performance indicators separately, document any changes to fixtures or controls, and include lighting in the facility's opportunity register. By maintaining consistent measurement responsibilities and data quality standards across all systems—including lighting—an organization can identify optimization opportunities and verify that implemented improvements sustain their expected performance over time.

What metering and data collection approach supports commercial lighting efficiency decisions?

Effective lighting assessment requires defining the measurement boundary and business decision that the data will support. Submeter data specific to lighting areas or zones helps distinguish lighting consumption from other building loads and identify peak usage patterns. Key information includes occupancy schedules, operating hours, daylight availability, and equipment specifications. As with any metering system, responsibility for data access, quality checks, and anomaly investigation should be assigned before installation. Our metering guidance emphasizes collecting information proportionate to the decision being made, ensuring that lighting data systems support operational review and inform

whether replacement or controls upgrades are justified.

How does commercial lighting fit into the investment-case structure for building improvements?

A lighting upgrade investment case should establish the existing lighting performance, required service levels, and operating constraints before presenting financial returns. The case should distinguish the baseline equipment condition from the proposed improvement, state energy savings separately from maintenance benefits, and disclose all assumptions about usage, pricing, and project scope. If lighting is part of a larger building retrofit, its contribution to total savings must be clearly identified so overlapping estimates are not combined. The investment case should present the lighting decision with and without conditional support such as grants or certificates, allowing management to understand the project's merit independent of funding availability.

What role do environmental certificates play in commercial lighting upgrade decisions?

Environmental certificates may provide financial support for eligible commercial lighting upgrades, but certificate eligibility depends on scheme-specific rules, project location, timing, and evidence standards. Certificate value should be assessed separately from energy savings and treated as a distinct benefit in the investment case. Before relying on certificates, the applicable scheme, activity method, and evidence requirements must be confirmed—these rules vary by state in Australia. We can assess whether a lighting project qualifies for environmental certificates under schemes such as the NSW Energy Savings Scheme or Victorian Energy Upgrades, and help navigate the evidence requirements for certificate creation and retirement.

How should commercial lighting performance be measured and verified after installation?

Measurement and verification of lighting improvements requires establishing a clear baseline of pre-project consumption, defining the equipment and boundary included in the assessment, and identifying operating variables that could affect consumption. Post-installation data collection should cover a representative period under normal operating conditions, with attention to changes in occupancy, operating hours, or production that might affect results. Documentation should record what equipment was installed, commissioning dates, and any departures from the original design. Our measurement and verification services can establish the baseline, design an appropriate monitoring approach, and verify achieved savings against projected benefits to support internal performance tracking or certificate scheme requirements.

What should be considered when comparing commercial lighting upgrade options?

Lighting options should be evaluated against consistent assumptions about required service levels, operating hours, facility occupancy patterns, and maintenance requirements. Each option should specify equipment type, installation scope, enabling work such as rewiring or control system changes, and ongoing maintenance implications. Distinguish between retrofit to existing fixtures, full replacement with new technology, and addition of controls such as occupancy sensors or daylight harvesting. Compare alternatives on the same basis for energy savings, capital cost, and operating life. Our energy optimization guidance recommends keeping the modeled payback distinct from verified post-installation results, ensuring that lighting decisions are based on realistic assumptions rather than equipment manufacturer claims alone.

How does commercial building split-incentive structure affect lighting upgrade decisions?

In commercial buildings with multiple tenants or split ownership, decisions about lighting upgrades may be complicated if different parties control the lighting systems and pay different portions of the energy bill. A building owner, tenant, and facilities manager may each control different lighting systems—for example, base-building common areas versus tenancy-specific fixtures. Before committing to a lighting upgrade, establish who controls the lights, who pays the electricity bill, and who can authorize capital works. Our commercial building guidance recommends clearly defining the assessment boundary and

arranging agreements on cost allocation and benefit distribution before investing in improvements that span multiple controlled areas.