

Minimum Requirements For An Industrial Lighting Study

Purpose

This document provides minimum requirements for an Industrial Site Lighting Study.

Scope

This document sets out the basic elements which must be included in a study; however it is not intended as a step by step protocol for the consultant to follow.

1. Requirements – Scope of Work

a. Project Definition

- Description of the preferred measures
- Reason for selection of measures
- Total investment required
- Annual energy savings and simple project payback. Any energy saving measures being recommended for implementation must adhere to the specific industry and/or Workers' Compensation Board or Illuminating Engineering Society design guidelines and calculation procedures.
- Must attach a copy of the *Industrial Lighting Opportunity Assessment* with the estimate for energy conservation potential (as submitted for the Energy Study proposal) as provided in the Energy Study proposal.

b. Energy Saving Lighting Calculations

- Consultants shall use BC Hydro-provided or BC Hydro-approved energy savings lighting calculator in MS Excel format.
- Consultants that have established calculators in spreadsheet format may request BC Hydro to provide an information package so they can upgrade their spreadsheet and submit to BC Hydro for approval. Upgrading costs are the Consultants' responsibility.
- Complete energy savings calculations by filling in the BC Hydro calculator with the audit and ECM data. Provide CD copy with read/write Excel electronic copy (PDF is not acceptable) with the energy study report

c. Recommended Energy Conservation Measures (ECMS)

- Description of each ECM and work required to accomplish implementation
- Recommended advanced lighting system strategy (redesign) for optimal energy efficiency (include technology upgrade, luminaire layout and/or quantity changes)
- Recommended lighting control strategy for optimal energy efficiency (include occupancy, daylight harvesting and dusk-to-dawn lighting controls)
- Annual kWh and kW savings by system as calculated using the energy savings lighting calculator
- Estimate of capital cost to accomplish implementation including design, material and commissioning. Estimates to be within +/- 30% maximum.
- Estimate of annual dollar savings and simple payback

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2. Requirements - Reporting

a. Applicant Information

- Company name and address
- Contact person (facility owner/manager)
- Telephone, fax, email address
- Facility type
- Date of energy study completion

b. Executive Summary

- List of energy saving options
- Provide anticipated energy savings (kWh)
- Indicate anticipated demand reduction (kW)
- Estimated value of energy savings and estimated costs to implement options
- This executive summary is important as it provides the Applicant and BC Hydro an outline of the Energy Study's recommendations.

c. Facility(ies) Description

- Age
- Total floor area and number of floors
- Sketches (optional)
- Physical condition
- Occupancy pattern
- Where required, the Industrial Lighting Opportunity Assessment could supersede the description of respective elements of the facility.

d. Lighting System Description

- Types of lighting systems
- Lamp and luminaire inventory (include ballast type for fluorescent luminaires)
- Lighting levels (mainly for under/over-illuminated conditions)
- Maintenance schedules (optional)
- Lighting audit by area. Consultants shall use BCH-provided or BCH-approved PSP energy savings lighting calculator.

e. Lighting Control Equipment Description Related to Lighting System

- Equipment inventory and application
- Time of use control strategy and equipment