The Lighting Calculator provided by BC Hydro and how to use it

Through their Power Smart program, BC Hydro offers financial incentives to encourage the transition to more efficient lighting. The Lighting Calculator offered by BC Hydro is a tool to determine energy reduction for illumination replacement and includes a list of fixtures and bulbs of different technologies to choose from. Wattage, luminaire type and quantity, hours of operation of both the existing and the new lighting system are required in order to determine the savings.

The lighting Calculator contains a worksheet named “Userguide” which provides detailed instructions.

This guide explains the following basic features:

1. Find out about the specifications of your existing and new luminaires.
2. Run the Lighting Calculator
3. Fill out the sheet “ES Report” which contains general Informations (line 7-13)
4. Open the “Existing Luminaires” sheet and insert the data except for wattage
5. Open the “New Luminaires” sheet and insert the data except for wattage
6. Go to the “Input” sheet and determine the electrical input wattage for your luminaires
7. Enter the input wattage to the sheets from 2 and 3.
8. Are your new luminaires LED? Skip step 5. (LED transfer 99% of the electrical energy into light)
9. Go to “ES Calculator” sheet and determine savings.

In Class exercise:

1. With the information given in the Factor Four LED light case study, and a blended energy rate of 0.1$/kWh, and a demand of $ 11.21/kW/month, complete the BC Hydro calculator and calculate the cost reduction achieved in the Factor Four area as a result of the lighting retrofit.

2. Why is the Input Wattage for the HPS bulbs higher than the nominal Wattage? Explain.

3. What is a shortcoming of the LED lights that are often retrofitted in cities?

4. Can you think of any additional ideas on how lighting systems can be more efficient?