The total energy savings, ES, and demand savings, DS, are calculated as follows:

ES = <single>ES1</single><multi>Σ ESi

= ${ESSum}

</multi>= ${ES} kWh/yr

DS = <single>DS1</single><multi>Σ DSi

= ${DSSum}

</multi>= ${DS} kW/yr

The annual cost savings, ACS, are estimated as follows:

ACS = (ES × Energy cost) + (DS × Demand cost)

= (${ES} kWh/yr × ${EC}/kWh) + (${DS} kW/yr × ${DC}/kW)

= ${ECS}/yr + ${DCS}/yr

= ${ACS}/yr

**Implementation Costs**

The implementation cost for this recommendation includes the material and labor costs required for the new light replacements.<multi> ${INSTALL}.</multi> Therefore, ${LN} LED bulbs would cost about ${BC}. The installation cost is estimated to be ${LC}.<ms> ${MSN} motion sensors need to be installed to control the light when the area is unoccupied. Each motion sensor costs ${MSPL} for parts and labor, resulting in a total of ${MSC}.</ms> The total implementation cost is ${IC}.

However, there could be energy efficiency rebates available through your electric utility company, which could potentially reduce the overall capital cost and thereby the payback period. The savings from the rebate is calculated below.

RB = ${RR}⋅yr/kWh × ES

= ${RR}⋅yr/kWh × ${ES} kWh/yr

= ${RB}

The incentives are capped at 50% of the project cost, which makes the modified rebate savings, MRB, equal to ${MRB}. Hence, the modified implementation cost, MIC, is estimated as follows:

MIC = IC - MRB

= ${IC} - ${MRB}

= ${MIC}

The total implementation cost is ${MIC}.

**The annual electricity savings for this AR will be ${ES} kWh, and the annual demand savings is ${DS} kW. The estimated annual cost savings is ${ACS} and, with ${MIC} in implementation costs, the payback period will be about ${PB}.**

**Implementation cost references**

The below links are for implementation cost references. We do not endorse/recommend these brands or products. Furthermore, these products may or may not be suitable for the application. The client should contact a vendor(s) to conduct a detailed study of the process, in order to determine the best product for the recommended application.

* [**https://www.homedepot.com/p/Philips-32-Watt-T8-40-Watt-T12-Equivalent-4-ft-Type-A-Linear-Universal-Fit-Daylight-LED-Tube-Light-Bulb-5000K-10-Pack-539197/315233633**](https://www.homedepot.com/p/Philips-32-Watt-T8-40-Watt-T12-Equivalent-4-ft-Type-A-Linear-Universal-Fit-Daylight-LED-Tube-Light-Bulb-5000K-10-Pack-539197/315233633)
* [**https://www.homedepot.com/p/Feit-Electric-500-Watt-Equivalent-Corn-Cob-E26-with-E39-Mogul-Adapter-High-Lumen-HID-Utility-LED-Light-Bulb-Daylight-5000K-1-Bulb-C10000-5K-LEDG3-HDRP/312524405**](https://www.homedepot.com/p/Feit-Electric-500-Watt-Equivalent-Corn-Cob-E26-with-E39-Mogul-Adapter-High-Lumen-HID-Utility-LED-Light-Bulb-Daylight-5000K-1-Bulb-C10000-5K-LEDG3-HDRP/312524405)