

APPENDIX A

Marginal Abatement Analysis

Marginal abatement cost curves are a standard tool used to illustrate the potential for reducing emissions of pollutants such as greenhouse gases from energy initiatives. Marginal abatement cost means the cost to reduce or offset one unit of pollution, in this case one ton of GHG emissions. Marginal abatement cost curves generally show the abatement cost associated with the emissions reductions achievable by different energy efficiency projects at a given point in time. It must be noted that different energy conservation measures with different paybacks and different savings, or avoided costs, will also have different carbon footprint impacts.

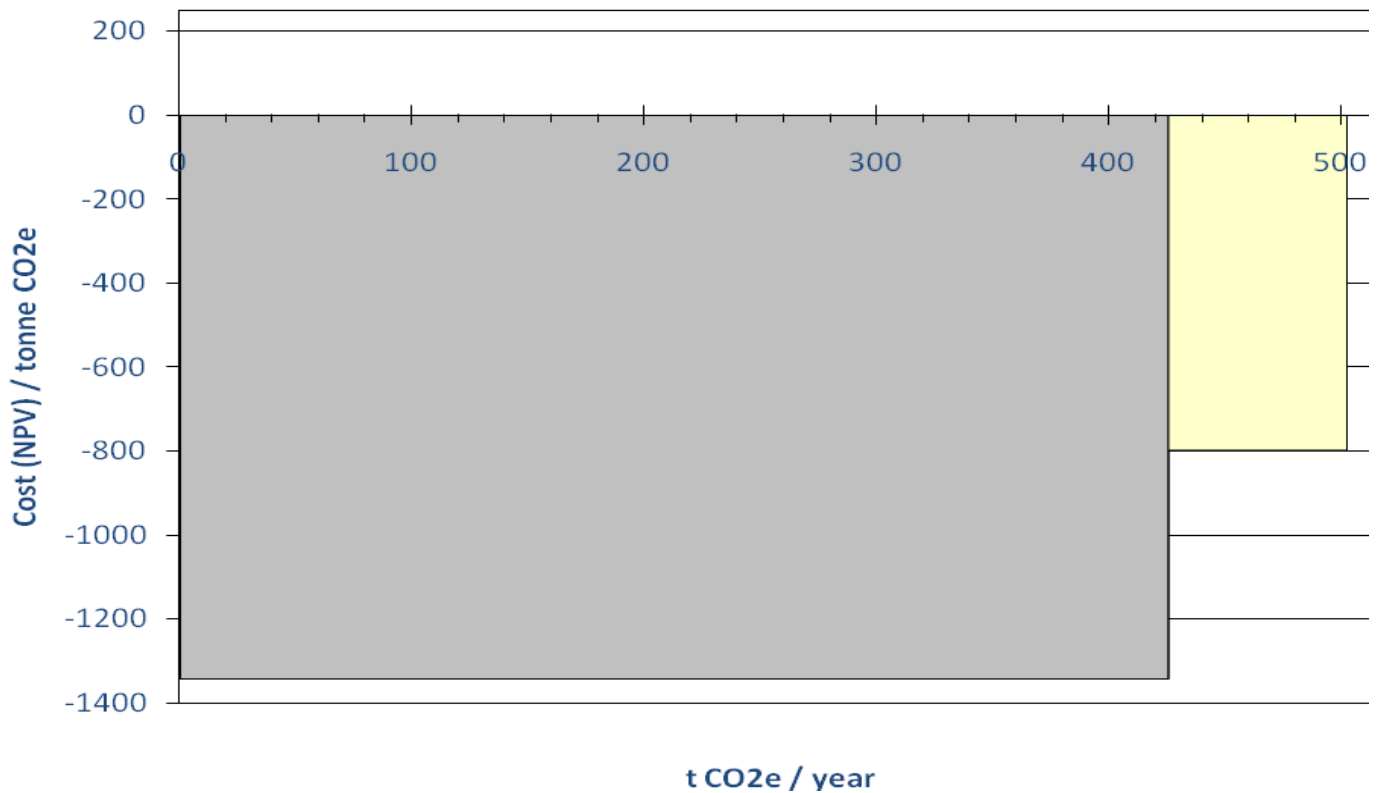
The height of the vertical or y-axis of the graph represents each of the potential energy efficiency project abatement costs per MT of (CO₂e), while the horizontal or x-axis represents the total GHG abatement potential or metric tons of carbon dioxide equivalent (CO₂e) per year for each option. The widest block delivers the most abatement potential. The graph is ordered from the lowest (left) to the highest (right) abatement cost opportunities.

Options that appear below the horizontal axis, i.e. the business-as-usual (BAU) baseline, offer the potential for financial savings once the upfront costs of implementing the projects have been factored in. Such initiatives, which offer the most cost savings for reduction in GHG emissions, should be considered first. Options that appear above the horizontal axis offer reductions in GHG emissions but at a net-cost per annum. In our case both projects are below the baseline.

The Marginal Abatement Cost curve tool illustrates only two dimensions (potential and costs) and should not be the only tool used when making energy efficiency investment decisions. A MACC can however be a valuable instrument as a basis for further discussion.

The graph below, based on data shown in the following table, compares the marginal abatement cost of GHG for the Roof-top Solar PV Project against the LED Streetlight Conversion. Seeing that the abatement cost is lower for LED Streetlight project, the project is the most beneficial for the investment.

Marginal Abatement Cost Curve - Primary



Project	Capital Cost	Savings kWh/ year	Savings MT of CO ² per Annum	Abatement Cost /ton CO ₂ e
Roof-top Solar	\$2,000,000	806,000	77.38	-\$796.84
LED Streetlights	\$8,000,000	4,439,938	426.23	-\$1341.45