

## **SOLAR POWERED WHITE LEDS AN IMPROVED ECO-DESIGN AND ECO-EFFICIENT LIGHTING PRODUCT**

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*ABSTRACT : Thermal based incandescent yellow flame of general lighting supply (GLS) in general and compact fluorescent lights (CFLs) too some extent scale the sources of greenhouse gases (GHGs) which spread wide pollution loads in air, land and water. In fact, most of the people of third world countries in general and South Asian countries in particular can not afford such lighting system rather use kerosene for lighting which produce very poor light of about 60-70 lumens/Watt[lm/W]. This type of light produces a lot of carbon in addition to these kerosene lamps cause fire hazard, heating the soot particles. Those lighting sources if discarded, are replaced by white LED lantern which is the promising future as new lighting resource whose efficacy as well as life span is much high. Accordingly, author addresses Eco-efficiency (Factor X) indicator and some conditions of sustainability in the light of productivity and ecological efficiency assess for reducing coal use; results to quantitative increasing human development index (HDI) in a sustainable economy.*

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Key words: *Eco-efficiency, Factor X, Efficacy, Eco-design*