

Distributed energy resources and benefits to the environment

ABSTRACT

The recently released report of the International Energy Outlook (IEO2009) projects an increase of 44% in the world energy demand from 2006 to 2030, and 77% rise in the net electricity generation worldwide in the same period. However, threatening in the said report is that 80% of the total generation in 2030 would be produced from fossil fuels. This global dependence on fossil fuels is dangerous to our environment in terms of their emissions unless specific policies and measures are put in place. Nevertheless, recent research reveals that a reduction in the emissions of these gases is possible with widespread adoption of distributed generation (DG) technologies that feed on renewable energy sources, in the generation of electric power. This paper gives a detailed overview of distributed energy resources technologies, and also discusses the devastating impacts of the conventional power plants feeding on fossil fuels to our environment. The study finally justifies how DG technologies could substantially reduce greenhouse gas emissions when fully adopted; hence, reducing the public concerns over human health risks caused by the conventional method of electricity generation.

Keyword: Greenhouse gas emissions, Distributed energy resources, DG technologies, Energy storage, Combined heat and power, Renewable energy