

**GOVERNMENT OF INDIA
NON-CONVENTIONAL ENERGY SOURCES
LOK SABHA**

UNSTARRED QUESTION NO:1797
ANSWERED ON:03.08.2000
CONVERSION OF SOLAR ENERGY INTO ELECTRICITY
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Will the Minister of NON-CONVENTIONAL ENERGY SOURCES be pleased to state:

- (a) whether the Government are aware of an easy, cheap and durable system developed by Japan to convert solar energy into electricity;
- (b) if so, whether the Government are considering to adopt this system for the development of non-conventional energy source; and
- (c) if so, the details thereof?

Answer

MINISTER OF STATE FOR NON-CONVENTIONAL ENERGY SOURCES (INDEPENDENT CHARGE) (SHRI M. KANNAPPAN)

(a): Japan is among the leading countries in the world which are actively engaged in the development of solar photovoltaic (PV) technology for direct conversion of solar energy into electricity. Research and development work is being undertaken on a variety of solar cell technologies, materials and applications. Among the recent developments in this field in Japan are:

(i) A Japanese company (Toshiba) has announced the development of an organic dye-sensitized solar cell using a solid electrolyte with a conversion efficiency of 7.3%. Such cells are claimed to be easier to manufacture and cheaper than silicon based solar cells. The new type of cells are not yet in commercial production.

(ii) Another company (Sanyo) has developed hybrid solar cells which use amorphous and crystalline silicon materials. A conversion efficiency of 17.3% has been claimed with this type of solar cells. The technology has reached commercial production.

Besides funding research on other types of thin film solar cells, the Japanese Government is also supporting the installation of rooftop power systems in individual homes which are connected to the electricity grid. About 33000 such systems have been installed since 1994.

(b) & (c): The Ministry of Non-Conventional Energy Sources is implementing a comprehensive programme for the development and utilization of photovoltaic technology in India. Research projects on thin film technologies such as amorphous silicon and copper indium diselenide are being supported. Work is in progress in Indian organizations on organic dye cells and cadmium telluride solar cells. A variety of applications are being supported through subsidies and other incentives. Government is also following developments in Japan and other countries. Introduction of any new technology in production depends on the commercial availability of the technology and the arrangements worked out by the companies involved in it.