Utilization of solar energy

*380. SHRI N. BALAGANGA: Will the Minister of NEW AND RENEWABLE ENERGY be pleased to state:

(a) what is the maximum potential of solar energy in the country;

(b) the percentage of its utilization;

(c) whether the percentage of utilization is low; and

(d) if so, the measures taken by Government to make it popular among the citizens?

THE MINISTER OF NEW AND RENEWABLE ENERGY (DR. FAROOQ ABDULLAH): (a) to (c) India receives solar energy equivalent to over 5,000 trillion kWh per year. The daily average solar energy incident over India varies from 4-7 kWh per square meter depending upon the location. Solar energy can be harnessed through two routes, namely solar photovoltaic (PV) and solar thermal by direct conversion to electricity and heat energy respectively.

The utilization of solar energy in the country has been regularly increasing. However, the high initial cost of the solar energy systems is a barrier to its large-scale utilization. The estimated unit cost of electricity from grid connected solar power plants is estimated to be around Rs. 11-15 per unit, which is very high compared to electricity generated from conventional sources including thermal power and other renewable energy sources such as wind, small hydro and biomass.

In view of the high initial cost, during the last several years the solar energy systems have mainly been used for stand-alone applications such as lighting, telecommunication, small power requirements, battery charging, water heating and cooking etc. So far around 2 million solar photovoltaic systems aggregating to about 118 Megawatt peak solar photovoltaic module capacity have been installed in the country. In addition about 0.66 million solar cookers and about 3.77 million square metre collector area, have been installed under solar thermal applications, mainly for solar water heating, which is equivalent to about 2600 Megawatt thermal energy capacity. A total of 18 Megawatt peak (MWp) of grid connected solar power plants have also been installed in the country. In addition 11,127 remote villages/hamlets have been covered with solar lighting systems.

(d) The Government has launched in January, 2010 the Jawaharlal Nehru National Solar Mission to develop solar energy technologies to make solar power competitive to conventional grid power by 2022. The Mission aims at setting up of 20,000 MW grid solar power and 2,000 MW of off-grid solar applications including 20 million solar lights. In addition, it aims at installation of 20 million square metre solar thermal collector area by 2022. The Mission will be implemented in three phases. Government has approved the target to set up 1100 MW grid connected solar plants, including 100

MW capacity plants as rooftop and small solar plants for the first phase of the Mission till March, 2013. The projects are to be set up on build, own and operate basis, involving the private and public sector. Another 200 MW capacity off-grid solar applications will also be supported in the first phase of the Mission. In addition, installation of 7 million square metre collector area is also targeted under solar thermal applications by March, 2013.

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WRITTEN ANSWERS TO UNSTARRED QUESTIONS

Supply of rakes to CIL

2791. SHRI TAPAN KUMAR SEN: Will the Minister of COAL be pleased to state:

(a) the number of rakes required by the Coal India Ltd. (CIL) to supply coal, matching with its production capacity during 2009-10 and 2010-11 (April to September);

(b) the number of rakes made available to CIL during the above period;

(c) the shortage in supply in MT and the resultant financial loss in rupees (crore) because of shortage of rakes; and

(d) the action taken by the Ministry to ensure adequate supply of rakes by Railways?

THE MINISTER OF STATE OF THE MINISTRY OF COAL (SHRI SHRIPRAKASH JAISWAL): (a) and (b) Against the planned average movement of 166.5 rakes per day for evacuation of coal for the year 2009-10, the actual movement of railway rakes was 157 rakes per day. During April-September, 2010, as against the average loading plan of 168.6 rakes per day, the actual movement of railway rakes was 154 rakes per day. Frequent law and order problems in some coal companies due to naxalite bandhs, local agitation affecting transportation of planned quantity of coal from pitheads to railway sidings, congestion of some of the railway routes and frequent unloading constraints at a few power stations affected the planned movement.

(c) The terms of sale of coal by Coal India Limited (CIL) being Free-On-Rail (FOR) ex-colliery, the responsibility of the coal companies end after indenting rakes from Railways as per schedule/programme of dispatch. CIL has reported that since they had regularly been indenting rakes as per their programme, CIL has so far not faced any financial loss due to less availability of rakes.

(d) The issue of making adequate availability of railway rakes for evacuation of coal is taken up at the following levels:—

(i) Annual Rail-Coal interface meeting between CIL and Railways;

(ii) Regular interaction between coal companies and concerned Zonal Railways;