

**Development and use of Solar Energy**

2563. SHRI SHIVA CHANDRA JHA: Will the PRIME MINISTER be pleased to state:

(a) whether Government have any specific programme for the development and use of solar energy, under the Sixth Five Year Plan; and

(b) if so, the details thereof?

THE MINISTER OF STATE IN THE DEPARTMENTS OF SCIENCE AND TECHNOLOGY AND ELECTRONICS (SHRI C. P. N. SINGH):

(a) Yes, Sir.

(b) A statement is attached.

**Statement**

Government have decided to give a major impetus to programmes relating to the development and use of solar energy systems during the Sixth Five Year Plan. The programmes cover activities related to both direct forms of utilization of solar energy and indirect forms such as biomass, wind energy, etc. The main objectives of the programme coordinated and supported by the Department of Science & Technology are to develop prototypes and to field test and demonstrate these in relation to technologies which have already been developed with a view to ensuring manufacture and large scale utilisation, and to develop newer technologies; all so that renewable energy sources can substitute for conventional sources as also provide additional energy on a significant basis. It is proposed to establish additional centres and facilities for research and development in solar photovoltaic systems, solar thermal systems and products, biogas and biomass and wind energy systems. It is expected that a production level of 1 MW per year will be attained for photovoltaic panels which can be used for various applications.

The Department of Science & Technology will also be taking up a de-

monstration programme in which photovoltaic powered systems such as pump sets and lighting units, thermal systems such as water heating, drying and desalination systems, community biogas plants and wind energy systems will be installed at various places in the country. The objective of the programme is to popularize such systems and get field performance data for evaluation and improvement.

An outlay of atleast Rs. 50 crores has been indicated for this programme in the Sixth Five Year Plan, which also includes activities relating to energy conservation and more efficient ways of utilising conventional sources of energy.

**Solar Energy**

2564. SHRI SYED ABDUL MALIK: Will the PRIME MINISTER be pleased to state:

(a) whether any developments have been made in the matter of producing solar cookers in the country;

(b) if so, the prospects and possibilities of producing such solar implements on a commercial scale for domestic purposes and what is the price likely to be for one such domestic solar cooker;

(c) whether any research centre devoted to inventing implements to work on solar energy functioning in the North Eastern Region and whether the Regional Research Laboratory, Jorhat or the Gauhati University has been asked to initiate such research work; and

(d) if not, the reasons therefor?

THE MINISTER OF STATE IN THE DEPARTMENTS OF SCIENCE AND TECHNOLOGY AND ELECTRONICS (SHRI C. P. N. SINGH):

(a) Yes, Sir.

(b) Various designs of solar cookers have been developed in the country. Efforts are now directed at reduction in costs so as to make them attractive

to prospective users. It is also important to be able to fabricate these in the vicinity of their use preferably using local materials and skills. A factor inhibiting their widespread utilisation relates to social acceptance, e.g. their use involves changes in traditional habits of cooking timings etc.

Indications are that where subsidies or reduction in costs are being provided, bringing down the costs to Rs. 200/- or less, there is a considerable demand for such cookers. The present prices of cookers are generally higher.

(c) and (d) A few demonstration projects in solar energy are being undertaken in the North-Eastern Region. A 1/2 tonne per day cash crop solar dryer has been installed at Small Industries Service Institute, Gauhati. A similar unit is being installed near Agartala in Tripura. Locations in Assam and Mizoram are being considered for installation of solar photovoltaic pumps, as part of the national demonstration programme. The possibility of installing solar water heating systems at suitable locations in the North-Eastern Region is also being explored. The Regional Research Laboratory, Jorhat is working on the use of water hyacinth for biogas production. In all such projects sponsored by the Department of Science & Technology, the participation of educational and research institutions in the Region is being planned, wherever appropriate.

#### **New methods of generating electricity**

2565. DR. LOKESH CHANDRA:

SHRI BISHAMBHAR NATH PANDE:

SHRI RAMANAND YADAV:

SHRI SHRIKANT VERMA:

SHRI PRAKASH MEHROTRA:

Will the PRIME MINISTER be pleased to state:

(a) whether Government are aware of the new method of generating elec-

tricity developed by Shri S. K. Chawla without coal or high dams;

(b) whether a patent has been granted to him; and

(c) whether the National Research and Development Council has tested the method?

THE MINISTER OF STATE IN THE DEPARTMENTS OF SCIENCE AND TECHNOLOGY AND ELECTRONICS (SHRI C. P. N. SINGH): (a) and (b). Shri S. K. Chawla of Delhi has filed an application in July, 1980 for a patent regarding generation of mechanical/electrical power from running water. The application is under examination of Patent Officer.

(c) No, Sir.

#### **Development of Technique of the Bicycle which can fly on water**

2566. SHRI SHIVA CHANDRA JHA: Will the PRIME MINISTER be pleased to state:

(a) whether it is a fact that Government are making research for the development of the technique of a bicycle which can fly on waters also; and

(b) if so, what are the details in this regard?

THE MINISTER OF STATE IN THE DEPARTMENTS OF SCIENCE AND TECHNOLOGY AND ELECTRONICS (SHRI C. P. N. SINGH): (a) No, Sir.

(b) A bicycle has a certain connotation of a two wheeled vehicle powered through human effort or a small power source. It is optimised for land use.

The design concepts of something that can ply on waters are quite different, namely a capability to float; and if it is to fly than the ability to lift implying less drag and use of an engine that has the right power/