

every village, in one form or other, it is the duty of State Government to have maintenance.

As regards the association of village samities, almost the entire anti-poverty programme envisages association of officials, non-officials, voluntary organisations and all that. The Government will welcome the association of voluntary agencies and village samities.

MR. DEPUTY SPEAKER : If more members are interested to put supplementaries on this Question, I can allow a Half-An-Hour discussion.

Research and Development of Solar Energy

*572. SHRI AMARSINH RATHAWA : Will the PRIME MINISTER be pleased to state the number of laboratories functioning in the country for research and development of solar energy and their achievements so far ?

THE MINISTER OF STATE IN THE MINISTRY OF SCIENCE AND TECHNOLOGY AND IN THE DEPARTMENT OF OCEAN DEVELOPMENT, ATOMIC ENERGY, SPACE AND ELECTRONICS (SHRI SHIVRAJ V. PATIL) : A statement is laid on the Table of the House.

Statement

There are 39 laboratories and academic and research institutions presently executing R and D projects in solar energy funded by the Department of Non-Conventional Energy Sources. 38 other institutions in the country are known to be carrying out research and studies on various aspects of solar energy utilisation. In addition, several industrial undertakings have taken up research activities in this field.

The R and D efforts so far have led to the generation of valuable data and experience in regard to solar radiation, development of various technologies and systems as well as their performance under field conditions. Among the systems which have been developed in the country and brought to a stage of field application are solar water heating systems, solar dryers, timber kilns, solar cookers, solar stills, photovoltaic water pumping systems, community and street lighting units, community radio and TV sets etc. The technology for the manufacture of

solar cells, modules and solar thermal collectors has also been developed in the country through indigenous efforts. In addition, considerable work has taken place relating to development and use of indirect forms of solar energy such as biomass, biogas, wind energy and hydropower.

[Translation]

SHRI AMARSINH RATHAWA : Mr. Deputy Speaker, Sir, the laboratories of solar energy are not functioning properly at present. What schemes have been prepared to set them right ?

SHRI SHIVRAJ V. PATIL : I have mentioned in the Statement the places and the nature of the research that is being carried out there. Research in this regard is being conducted in 45 laboratories, academic institutions, etc. Experiments are being conducted to find out how solar energy could be utilised for generating heat, electricity and biomass. Research is being conducted for preparing appliances to be used for utilising solar energy. Regarding how such appliances can be manufactured and what materials are required therefore research is going on in this regard also. We are experimenting on whether the silicon which we require should be in crystalline form, amorphous form or in some other form. As regards what type of metal can be used for making utensils and what type of enamel should be applied to make them usable and what should be the size, designs or shape of the appliances which could be used for storing thermal energy and how stem energy can be generated and utilised, in all these fields, research is going on. During the Sixth Five Year Plan, an amount up to Rs. 23 crores will be spent on this. I have given all the details. More information can also be given, because our plan is so comprehensive that much more work in this regard is necessary.

SHRI AMARSINH RATHAWA : Mr. Deputy Speaker, Sir, my second question is, as there is great demand of solar energy in the country, what amount has been allocated or will be allocated for solar energy in the Seventh Five Year Plan.

SHRI SHIVRAJ V. PATIL : I have already stated the provision made for solar energy during the Sixth Five Year Plan. But the Seventh Plan has not been finalised

as yet. Before it is finalised, I cannot give him information regarding the provision in the Seventh Plan for solar energy. At the moment I can only say that the provision in the Seventh Plan will be some what more than that made in the Sixth Plan.

[English]

PROF. MADHU DANDAVATE : I would like to ask a question particularly to the Prime Minister on the basis of his experience as a pilot, not as a pilot of the House but as a pilot of the aeroplane !

MR. DEPUTY SPEAKER : Solar energy is connected with that !

PROF. MADHU DANDAVATE : Yes. It is connected with that !

I would like to know whether it is a fact that in 1981 an aeroplane which was entirely fuelled by solar energy crossed the English Channel successfully and, if it is so, on the basis of the experience, will the Government explore the possibility of successfully using solar energy for flying the aeroplanes.

(Interruptions)

THE PRIME MINISTER (SHRI RAJIV GANDHI) : I do not know whether the year Prof. Madhu Dandavate has mentioned is correct but a plane did cross the Channel, Yes.

PROF. MADHU DANDAVATE : 21st November, 1981.

SHRI RAJIV GANDHI : I will take your word for it !

We can definitely look at it but solar energy is a very new science. The amount of solar energy that can be collected today is still very very low in intensity and we are looking at every aspect of developing solar energy. We are first looking at those aspects which will help our rural areas most and when it is time for our farmer to fly, we will examine it for flying.

PROF. MADHU DANDAVATE : Solar energy is so powerful that the entire Government can be run with the solar energy ?

SHRI RAJIV GANDHI : We can help the Opposition with solar energy. They can go and sit outside !

SHRI VIJAY N. PATIL : In Cyprus, I have seen every house is having a solar heater. I would like to know whether an experiment will be conducted in India also, taking one village as the unit for solar heaters, for heating the water in cold climate of Himalayan hills. In Bangalore, the Mettur Industries have developed the silicon crystals but the purity was only 70%.

I would like to know from the hon. Minister what is the percentage of purity developed indigenously of the silicon crystals and what happened to the experiment of a car running on solar cells for which money was given to the engineer in Ahmednagar of about Rs. 5 lakhs some time back.

SHRI SHIVRAJ V. PATIL : As far as the vehicle which can run on the solar energy is concerned, we have no information whether he has succeeded in Ahmednagar in producing the vehicle. But CEL Laboratory scientists have been successful in producing a 3-wheeler which can run with solar energy. The energy which is available with the cells and with the material which is available with us is so limited that we shall have to do something more to make it viable and usable by many persons. As far as the material produced locally is concerned, it is being examined and it is not possible for me at this point of time to say what is the percentage energy available from that material.

SHRI G. G. SWELL : One way of converting sunshine into energy is the solar pond. I should think that there is a great deal of possibility in our coastal areas.

I would like to know whether you have done anything on those lines and what have you done.

SHRI SHIVRAJ V. PATIL : Solar energy is utilised in different forms. We can utilise it for making thermal energy, we can utilise it for creating electrical energy. As for as utilisation of solar energy by creating ponds is concerned, this is being done...

SHRI G. G. SWELL : Where ?

SHRI SHIVRAJ V. PATIL : Experiments are being carried in the coastal areas, but we have to do a lot many things before they really become useful on a commercial scale. So, we are at the experimental stage. In all fields we are at the experimental

stage and we would be able to reduce the cost of the appliances which are being used and we would be able to reduce the cost of the materials which are being used. In the Bhavnagar laboratory also, solar ponds are being experimented upon and certain appliances are being made which can be used for this purpose.

[Translation]

Setting up of Colour T.V. Unit in Eastern U. P.

*574. DR. CHANDRA SHEKHAR TRIPATHI : Will the PRIME MINISTER be pleased to state :

(a) whether Government propose to set up a colour T.V. manufacturing unit in Eastern Uttar Pradesh soon;

(b) if so, its proposed location, the name of unit to whom licence issued and the time by which the factory is likely to be set up; and

(c) the likely production capacity of the factory and the number of persons likely to get employment therein ?

[English]

THE MINISTER OF STATE IN THE MINISTRY OF SCIENCE AND TECHNOLOGY AND IN THE DEPARTMENTS OF OCEAN DEVELOPMENT, ATOMIC ENERGY, SPACE AND ELECTRONICS (SHRI SHIVRAJ V. PATIL) : (a) Central Government has no proposal to set up any Colour TV manufacturing unit in Eastern Uttar Pradesh.

(b) and (c). Do not arise.

[Translation]

DR. CHANDRA SHEKHAR TRIPATHI : The Deputy Minister of Electronics, Food and Supply of the Government of India, Dr. M.S. Sanjeevi Rao, had announced on 2nd April, 1984 that under the T.V. expansion programme of the Government of India, a T.V. unit would soon be set up in eastern U.P. He had further announced that out of the licences that had been issued for manufacture of colour T.V. picture tubes, one licence had been given to U.P. and this factory which would cost Rs. 180 crores would be set up very soon. I would like to know at which place this unit has been set up and what its production capacity is.

SHRI SHIVRAJ V. PATIL : I have answered with regard to the Central Government. So far as the setting up of colour T.V. tube manufacturing unit is concerned, it concerns to the State Government. I have not got full information in regard to the statement of the then Deputy Minister Dr. Sanjeevi Rao, but at present the position is that we have given permission to manufacture T.V. sets in one or two Central Government units. We have permitted State Government undertakings to manufacture T.V. sets on large scale. These can be manufactured in the joint sector as well as in the private sector. The T.V. sets are being manufactured on a large scale in U.P. uptron is manufacturing 50,000 T.V. sets and apart from that the private sector is also making T.V. sets.

DR. CHANDRA SHEKHAR TRIPATHI : The experts are of the view that the laser rays coming out of colour T.V. sets are more harmful than the rays coming out of black and white T.V. sets and they can cause decomposition of the body, leukaemia and blindness. If this is true, then why is colour T.V. being encouraged ? If it is being encouraged what protective steps are being taken by the Government in this regard ?

SHRI SHIVRAJ V. PATIL : In regard to the question of scientific implications unless full facts are known to us we cannot say whether it would be harmful to human eyes and the human body. It would not be proper to create such a scare among the people unless we have come to know all the facts. There are many benefits of colour T.V. We can give information about plants to farmers on colour T.V. in a better way. There are many things that can be explained through colour T.V.

[English]

MR. DEPUTY SPEAKER : The Question Hour is over.

WRITTEN ANSWERS TO QUESTIONS

[English]

Payment of Instalment of Relief to Pensioners by Chandigarh Administration

*570. SHRI THAMPAN THOMAS : Will the Minister of HOME AFFAIRS be pleased to state :