

### Solar Huts

\*237. SHRI H. N. NANJE GOWDA:  
SHRI K. P. SINGH DEO:

Will the Minister of SCIENCE AND TECHNOLOGY be pleased to state:

(a) whether the Central Electronics Limited has found out a new technique to make solar huts in the country;

(b) if so, the details thereof and whether such type of huts can be provided with sufficient energy generated by direct conversion of the sun light into electricity;

(c) if so, the details thereof and whether solar electricity so generated will be cheaper as compared to electricity generated by water and coal; and

(d) if so, when and where such solar huts are likely to be constructed?

THE PRIME MINISTER (SHRI-MATI INDIRA GANDHI): (a) to (d). Under the solar energy programme of the Department of Science and Technology, the Central Electronics Limited (a public sector undertaking under the Department) has developed photovoltaic cells, and panels consisting of such cells, for direct conversion of solar energy into electricity. Such panels may be placed on roofs of buildings and the electricity generated used to operate certain appliances such as fans and TV sets and for lighting. Such applications were shown for demonstration purposes on two huts, one in the CEL premises and another at Pragati Maidan, New Delhi; these were referred to popularly as "Solar huts."

The cost of solar energy based electricity, so generated by photovoltaic panels, is at present not generally cheaper than electricity generated by water and coal; however, in certain areas remote from the normal conventional sources of power and where electricity is needed in small unit sizes, photovoltaic sources are nearing economic competitiveness with conventional sources.

Solar photovoltaic modules developed at Central Electronics Limited under the Department of Science and Technology's demonstration programme are currently being used in the lighthouse beacon at Dwaraka Port for ship navigation, for pumping water in the solar distillation plant at Avania Village in Gujarat, for drinking water supply at Tejara village in Rajasthan, for lighting in Choglamsar village in Ladakh and in a few demonstration pumping systems. The programme envisages scaling up the fabrication techniques for silicon solar cells and panels developing modules for applications such as pumping of drinking water, minor irrigation community lighting, for educational radio and TV sets, cathodic protection of oil pipelines and for use in communication equipment in the remote areas. The principal efforts relate to reduction of costs and improved reliability. A major project costing about Rs. 12 crores over 5 years, including application of photovoltaic systems in rural areas for a variety of purposes (with emphasis on water pumping for drinking and minor irrigation), has been drawn up.

In the meantime, a short-term programme to be completed by 1981, for fabrication and field demonstration of Solar photovoltaic pump sets of about 25 KW aggregated capacity and other units of 5 KW capacity is underway.

चीन द्वारा प्रशिक्षित नागा लोग

\* 240. श्री केशव राव पारधी : क्या गृह मंत्री पूर्वोत्तर राज्यों में चीन से प्रशिक्षित होकर आये हुये व्यक्तियों के बारे में 23 जुलाई, 1980 के अतारंकित प्रश्न संख्या 5358 के उत्तर के सम्बन्ध में यह बताने की कृपा करेंगे कि:

(क) क्या सरकार को पता है कि विदेशों में प्रशिक्षण प्राप्त करने के बाद विद्रोही नागा अभी भी बर्मा सीमा के रास्ते से होकर भारत में आ रहे हैं;