Development Commissioner of Small-Scale Industries."

उपसभापति : यह नहीं पूछ रहे हैं कि इण्डियन एक्सप्रेस ने क्या लिखा । That is not the issue. वे यह पूछ रहे है कि आप कर रहे हैं या नहीं कर रहे हैं यूनिडो की प्रोपोज़ल . . . .

श्रीमती कृष्णा साही : अभी तो प्रस्ताव विचाराधीन है । मैंने उत्तर में कहा है कि सरकार (व्यवधान)

SHRI GURUDAS DAS GUPTA: It is the maiden reply of the Minister,

SHRI MENTAY PADMANABHAM: It is her maiden reply, Madam.

SHRI DIPEN GHOSH: Maiden question, maiden answer.

श्रीमती कृष्णा साही : उपसभापति महोदया, . . . (व्यवधान)

उपसभापति : जवाब तो सुनिये ।

श्रीमती कृष्णा साही : मैंने अपने उत्तर में कहा है कि भारत सरकार यूनिडो की मदद से एक सबकंट्रैक्टिंग एक्सचेंज स्थापित करने का इरादा रखती है लेकिन यह प्रस्ताव विचाराधीन है ।

उपसभापति : यह विचाराधीन है अभी ।

श्रीमती कृष्णा साही : सरकार सभी बिन्दुओं पर विचार करके ही कुछ करेगी ।

श्रीमती कृष्णा साही : उपसभापति महोदया, जब प्रस्ताव ही विचाराधीन है तो एम.ओ.यू. का प्रश्न ही नहीं उठता है । अभी तो प्रोजेक्ट की स्वीकृति नहीं दी गयी है । एम.ओ.यू. का प्रश्न तो प्रोजेक्ट की स्वीकृति के बाद ही उठेगा ।

श्री प्रमोद महाजन : लेकिन प्रिवेंशन ले सकते है, यह तो बता सकती हैं । उन्होंने इतना ही पूछा है कि आप प्रिवेंशन लेंगी ? इसमें हां कह सकती हैं ।

श्रीमती कृष्णा साही : सरकार सब दृष्टिकोण से विचार करके ही कुछ करेगी ।

†The question was actually asked in the floor of the House by Shri Som Pal.

Generation of power through Thermal ocean Energy Conversion

*322. DR. NAUNIHAL SINGH:
SHRI SOM PAL:†

Will the PRIME MINISTER be pleased to state:

(a) whether technology is available for generating power through thermal occean energy conversion;

(b) whether some study has been made to evaluate the feasibility and total potential of such generation in India;

(c) if so, what are the details thereof;

(d) whether any offer or proposal for the purpose has been received by Government; and

(e) if so, what are the details thereof; and what action is being taken to tap this new-source of energy?

THE MINISTER OF STATE OF THE MINISTRY OF PLANNING AND PROGRAMME IMPLEMENTATION AND THE MINISTER OF STATE IN THE MINISTRY OF NON-CONVENTIONAL ENERGY SOURCES (SHRI SUKH RAM): (a) to (e) A Statement is laid on, the Table of the House.

Statement

Technology for generating power through Ocean Thermal Engery Conversion (OTEC) is not available in India, According to information available, OTEC technology is at an experimental stage in USA and Japan. It is yet to be demonstrated in Megawatt Rang*.

IIT Madras in a study had indicated in July, 1984 that the potential for OTEC in India is very large. The feasible potential will be much lower, taking into account cyclonic weather and environmental conditions prevalent on our East Coast. No detailed study to evaluate the potential has been carried out, as OTEC development is costly and therefore not a priority area on techno-economic considerations.

A proposal of M/s Sea Solar Power of USA for setting up a 100 MW OTEC Power Plant was received in February, I486. The proposal was not considered to be techno-economically feasible and therefore not accepted. The proposal has been revived in 1991 by M/s Sea Solar Power through its representative in India. Detailed proposal's of M /s Sea Solar Power to set up a 100 MW OTEC Plant and power evacuation system at its own cost off Tamil Nadu Coist and sell power to Tamil Nadu Electricity Board, has been received by Tamil Nadu Energy Development Agency in June '92. The proposal is under consideration of the Tamil Nadu Government.

SHRI SOM PAL: Madam Deputy Chirman, the information provided by the hon. Minister in his reply to my question is self-contradictory On the one hand he holds that the IIT.' Madras had indicated as long back as in 1984 that there is a huge potential for ocean thermal energy conversion in India but in the very next sentence, he says, it is not technically feasible. My information is that our eastern coast, particularly along Tamil Nadu and a part of Andhra Pradesh is ideally suited for such plants and it is very environmental friendly and it is a renewable source of energy. Would the Mnisther like to institute a study in finding the techno-economic feasibility and environmental aspects of this project which can go a long way in volving our energy problem?

SHRI SUKH RAM: Madam, there is no doubt that the eastern coast is suitable for exploiting energy from that part. But now the whole question before us is that this ocean therm*' energy conversion has not been exploited even by the affluent nations like USA, Japan and other countries. In 1973, when there was a steep rise in oil prices, at that time, USA, Japan Netherlands and France gave a serious thought to it to exploit energy from this source. But then Japan put up one plant of 100 Kilowatt only that could produce) power up to 31.5 Kilowatt. So when the affluent nations could not succeed in exploiting this energy how could we do it? Secondly, the cost is very high. In 1986, an estimate was made according to which 250 million dollars were required at that time to produce 100 MW of energy. Now. it would cost 400 million dollars. In other words, 1 MW would cost Rs. 12 crores whereas conventional energy costs Rs. 3 crores per MW and non-conventional energy from other sources costs around Rs. 4 crores per MW. So this is very risky and the technology is not yet approved even by those affluent nations. This is not in our priority sector. We are watching the development in other countries and as and when it becomes techno-economically feasible in this country, we will no doubt exploit this source.

SHRI SOM PAL: Madam Deputy Chairman, my second supplementary is, the Minister says that the Tamil Nadu Government is in receipt of a specific proposal from some company and that is under consideration. Would be Central Government also like to evaluate and find out by when this demonstration in Megawatt Range could be available in India so that we can either reject or accept this technology for future?

SHRI SUKH RAM: Madam, one company M/s. Sea Solar Power sent a proposal in 1986 to the Government of India with certain conditions and the proposal was examined here and it was not found techno-economically feasible. So it was rejected. Now they have come up with another offer This very Company has made an offer to the Tamil Nadu Government to invest hundred per cent on their own and the power would be sold to the Tamil Nadu Electricity Board. They have sent this proposed only in June, 1992. Now they are corresponding, having a dialogue with the Tamil Nadu Government They have suggested that they

would be in a position to sell this power at the rate of 0.069 cents of USA cur rency. That comes to about two rupees and fifty paise per unit. What is the reaction of the Tamil Nadu Government? We would like to know first its reaction. Then they have put a condition that they would be investing hundred per cent loan, in that project and that they would like to repatriate the profit. As and whan we receive the reaction of the Tamil Nadu Government, we will examine the other aspects here, by the Power Ministry and the Finance Ministry. Thereafter the case will be decided.

DR. NARREDDY THULASI REDDY: Madam, the Integrated Break-Water Wave Power Generating System Project at - Thangassery is supposed to be completed -by the end of 1995. So 1 would like to know what the progress in the work of this Project is and whether it will bo completed before the end of 1995.

SHRI SOKH RAM: Madam, the hon. Member is giving this information. I don't have any information whether say such project is under investigation or under implementation. I don't have any information. . . *(Interruptions)* . .

.DR. NARREDDY THULASI REDDY: In the 1990-91 Report it is there. In your own.Annual Report it is there.

SHRI KAMAL MORARKA: He has not read the Annual Report.

AN HON. MEMBER: Somebody prepared it.. . *(Interruptions)*

THE DEPUTY CHAIRMAN: Which , Annual Report? ... *(Interruption)* ... Which Annual Report are you - talking about? - -

' DR. NARREDDY THULASI REDDY: Annual Report of 1990-91. *(Interruptions)*

THE DEPUTY CHAIRMAN: No, no; am not permitting anybody to just get get 'up and speak like this. ...*(Interruptions)*.. .No, no, no. Please sit down.

.SHRI VIREN J. SHAH: Madam, the Minister, says, he is not aware of it and ,it is published in his own Ministiy's Re port... *(Interruptions)*.. ,

THE DEPUTY CHAIRMAN: Please sit down. Mr. Ahluwalia.

श्री सुरेन्द्रजीत सिंह अहलुवालिया : उपसभापति महोदया, मेरे को जहां तक याद है तिरुपति में कांग्रेस के सैशन में हमारे माननीय प्रधान मंत्री महोदय ने नान-कन्वेंशनल सोर्स आफ् एनर्जी पर तरह-तरह के प्रयोग करने के लिए भारत के सभी वैज्ञानिकों को आह्वान दिया था । मैं मंत्री महोदय से जानना चाहूंगा कि क्या ओशन डिवेलपमेंट के माध्यम टाइडल वेव एनर्जी जेनेरेटिंग सिस्टम पर कोई संस्था काम कर रही है, कोई आर्गेनाइजेशन इस काम के एक्सपेरीमेंट पर लगी हुई है या नहीं ? अगर नहीं लगी हुई है तो कब तक लगाने पर यह इच्छा जाहिर करते हैं ? दूसरा, मैं बताना चाहता हूं कि अभी मंत्री महोदय बता रहे थे कि फारेन कंट्री से जो भी टैक्नालोजी आई है हम लोगों के यहां कोई भी चीज की जरूरत पड़ती है तो हम अपने वैज्ञानिकों पर विश्वास नहीं करते और विदेश पहुंच जाते हैं, आपने कहा कि 12 करोड़ रुपया पर मेगावाट का खर्च आता है और कनवेंशनल पावर जेनरेशन में 3 करोड़ का पर मेगावाट का खर्चा आता है। किन्तु समझने की जरूरत है कि कन्वेंशनल में रेकरिंग एक्सपेन्सेस और यहां पर टाइडल वेव एनर्जी प्रोड्युसिंग सिस्टम में रेकरिंग एक्सपेंडिचर नहीं है, जो भी है कैपिटल इन्वेस्टमेंट है, उसके बाद कोई रेकरिंग इन्वेस्टमेंट नहीं है । तो यह ओसियन डवलपमेंट के माध्यम से जो 1,50,000 किलोमीटर का हम लोगों का एरिया है, वेस्टर्न कोस्ट, ईस्टर्न कोस्ट और सदर्न कोस्ट, तीनों जगह समुद्र है हमारा, वहां की टाइडल वेव की एनर्जी हम क्यों नहीं युटिलाइज कर रहे हैं ? इस पर कोई संस्था काम कर रही है या नहीं कर रही है ? इसका जवाब चाहिए ।

श्री नुखराम : मैडम, यह बात ठीक है कि प्रधानमंत्री जी ने तिरुपति सैसन में उस पर काफी बल दिया था और आज भी उस पर बल दिया जा रहा है, मगर नोन-कन्वर्सन एनर्जी का सोर्स एक ही

नहीं है, टाइडल-वेव ही नहीं है, ओसियन ही नहीं है और भी है, हवा है, सूरज है और बायोगैस है, बहुत से दूसरे साधन हैं, जिस पर काम हो रहे हैं। जब उस पर नोटिस आएगा तो उस पर मैं सारा जिक्र वहां करूंगा । मगर, यहां तक इसका सवाल है, ओटेक प्लांट का सवाल है, मैंने पहले ही कहा कि यह तो अभी तक जो समृद्धिशाली देश हैं, वे भी इस दिशा में ज्यादा नहीं बढ़े हैं हालांकि यू०एस०ए० ने इस पर कानून भी पास किया और कोई सबसिडि वगैरह भी दी, कुछ प्राइवेट कंपनी को उन्होंने प्रोत्साहन भी दिया, मगर एक प्लांट जो वहां चलाया, जो छोटा था, उससे भी वह एनर्जी प्राड्यूस नहीं कर सके और फिर ...(**व्यवधान**)...मैं आता हूं उस पर, मुझे मालूम है ।...

श्री सुरेन्द्रजीत सिंह अहलुवालिया : आर्यभट्ट भारत में पैदा हुए थे, थे, जापान में नहीं । आप जापान की परंपरा में क्यों जाते हैं ? भारत के वैज्ञानिकों का उपयोग करिये ।

श्री सुखराम : मैं आ रहा हूं, उसमें । आपको थोड़ा सा इसमें बैकग्राउण्ड दे दूं । मैडम, ऐसा है कि हमें आपने कहा कि बहुत सा हमारा समुद्र क्षेत्र है, इसमें कोई शक नहीं है, बहुत सा है । मगर, जो टरबुलेंट वाटर जहां पर है, जहां पर सेडियर बेदर है, यह प्लांट वहां पर लग नहीं सकता। यह तो सिर्फ साउथ में मद्रास और श्रीलंका के दरमियान जो कुछ एरिया है, उसके लिए आई.आई.सी. मद्रास में इस पर इन्वेस्टीगेशन किया था, एक टास्क-फोर्स कंस्टीट्यूट की थी और वह भी ओसिएनोग्राफी का जो डेटा था, वह उन्होंने जो डेटा अवेलेबल किया, उसके जरिए इस नतीजे तक पहुंचे कि कुछ एरिया में यह प्लांट लग सकता है । मगर, इतना कोस्टली है और इसमें रिसर्च करनी पड़ेगी । रिसर्च के लिए । ...(**व्यवधान**)..सुनिए, प्लीज । आप सुन लें ...(**व्यवधान**)...

SHRI SOM PAL: Madam. if you can permit me foe half-a-minute, the hon. Minister is telling about ocean thermal energy coversion while the question raised by Mr. Ahluwalia is regarding tidal wave energy conversion. He is entirely on a different subject. He has asked about the tidal wave energy conversion. *(Interruptions)*...

श्री सुखराम : आपका जो प्रश्न है, वह प्रश्न ...(**व्यवधान**) ।

SHRI DIPEN GHOSH: He has not seen even the ocean. *(Interruptions)*-..

SHRI MENTAY PADMANABHAM: Madam, the Minister is on the same subject. *(Interruptions)*...

उपसभापति : आप देव में लाइन भी जुड़ा लीजिए तो जवाब आ जाएगा । ...(**व्यवधान**)...

SHRI DIPEN GHOSH: He is now on a different wave. How can he say about the tidal wave? *(Interruptions)*...

उपसभापति : जवाब देने दीजिए प्लीज । आप लोग जवाब भी नहीं सुन रहे । ...(**व्यवधान**)...

"1 am interested in scientific questions.

SHRI SOM PAL: One such plant is under consideration for Andaman and Nicobar Islands. The Minister does not know about it. I have the information. *(Interruptions)*...

उपसभापति : प्लीज, मंत्रीजी, आप बोलिए । आप सब बातें मत सुनिए । आप अहलुवालिया जी के प्रश्न का जवाब दीजिए ।

श्री सुख राम : हां, उसी का जवाब दे रहा हूं । ...(**व्यवधान**)...

SHRI KAMAL MORARKA: He has already told us everything he knows about the subject. He has not hidden anything. Let us move ahead to the next question,

SHRI SUKH RAM: Mr. Morarka seems to have misunderstood me.

मैं आपको यह कह रहा था कि इसमें अभी तक हमने रिसर्च वगैरह का काम शुरू नहीं किया क्योंकि इसमें बड़ी प्रोहिबिटिव कॉस्ट आती है और इसकी टैक्नोलोजी जो है वह अभी एडवूड टैक्नोलोजी नहीं है, जैसा मैंने बताया । मगर, इसमें हम देख रहे हैं, जब भी मुमकिन हुआ, जब इसमें कोई भी देश, दूसरे देश एक्सप्लायट कर सके इस साधन को, तो हम पीछे नहीं रहेंगे ।...

मगर अभी तक रिसोर्स क्रंच की वजह से हमें जितने साधन की आवश्यकत, है, वे साधन उपलब्ध नहीं कराए जा सकते ।

THE DEPUTY CHAIRMAN: Mr. Jichkar, if you want any other information than what the Minister has. given then I will permit you. Let the Prime Minister say something.

THE PRIME MINISTER (SHRI P. V. NARASIMHA RAO): Madam, what the Minister has told the House is the factual position coming from the departments and that is accurate as far as it goes. But we have to go a step further. We have, perhaps, to involve universities and other institutions in as many of these non-conventional areas as possible. We have not yet come to grips with the problems except in the case of solar energy where a lot of work has been done and we are almost on the point of a breakthrough. We are concentrating on that. That is perhaps the most abundant source of energy that we have in this country. We have taken up this work on behalf of the G-15, on behalf of the developing countries. So, right now, we are concentrating on that. But I agree that on other sources also we have to start some work somewhere. It may be a little rudimentary at the moment, but we will have to start somewhere. Right now the Department has not started. I would like to talk to some other scientists, if it is possible, maybe, of the universities close to the area where this energy can be tapped. We will go ahead with some kind of a programme, not on a large scale but on an experimental scale. If other countries are experimenting with it, there is no reason why we should not experi-men! with it. Maybe, we will have a breakthrough even before them. So, that possibility needs to be explored.

THE DEPUTY CHAIRMAN: After the Prime Minister's answer I don't think anything is left in this question. Next question—Question No. 323.

Comprehensive Scheme for Rehabilitation of Bonded Labour

*323. SHRI GHUFRAN AZAM: Will the PRIME MINISTER be pleased to state:

(a) whether it s a fact that Government have isued comprehensive guidelines to the States for preparing village level schemes for rehabiiitation of bonded labour;

(b) if so, the details of the guidelines issued in this regard and the response of the State Goverpjients thereto; and

(c) the allocations made to State Governments for the purpose?

THE DEPUTY MINISTER IN THE MINISTRY OF LABOUR (SHRI PABAN SINGH GHATOWAR): (a) Yes, Sir.

(b) A copy of the guidelines is enclosed as statement *{See* below).

(c) Central assistance of Rs. 35.17 crores has so far been released to the State Governments since inception of the scheme in 1978-79.