

I J / Ali / Ken King / Bilip / Sam / GREEN / FERROT.

**THE WORLD BANK GROUP**

Headquarters: Washington, D.C. 20433 U.S.A.

Tel. No. (202) 477-1234 • Fax (202) 477-6391 • Telex No. RCA 248423

**FACSIMILE COVER SHEET AND MESSAGE**

**DATE:** December 18, 1995 **NO. OF PAGES:** 29 **MESSAGE NO.:** 1  
(including cover sheet)

**TO:** See Distribution **FAX NO.:**

Title:  
Organization:  
City/Country:

**FROM:** Ken Newcombe **FAX NO.:** (202) 202 522-3256  
Title: Chief **Telephone:** (202) 202 473-6010  
Dept/Div: ENVGC **Dept./Div. No.:** 65537  
Room No.: S2-141

**SUBJECT:** PDF - BLOCK A REQUEST GLOBAL: STAKEHOLDERS CONSULTATIONS IN SIX COUNTRIES FOR PHOTOVOLTAIC MARKET TRANSFORMATION INITIATIVE

**MESSAGE:** Attached please find requests from the governments of India, China and Pakistan<sup>1</sup> to host the workshops for the purposes of country consultations on Photovoltaic Market Transformation Initiative and the request for a PDF Block A grant for the in-country consultations/workshops. The reactions and recommendations arising from these workshops will be documented and presented to the management and the program design consultant.

We believe this proposal is consistent with the PDF objectives of helping eligible countries meet key GEF objectives.

Please let us know if you have any comments on the award of a PDF-A grant to this activity by c.o.b. Friday, December 22nd.

Distribution:  
Messrs./Mmes.

R. Asenjo, UNDP (Fax: 212-906-6998)  
W. Mansfield, UNEP (Nairobi) (Fax: 9-011-2-520-825)  
R. Khanna, UNEP (Washington) (Fax: 202-331-9333)  
I. Johnson, GEF Secretariat (Fax: 23240)

cc: ENVGC:  
Messrs./Mmes: L. Vidaeus, C. Feinstein, M. Nikolov, J. Suter, ENVGC ISC

<sup>1</sup> Only letters from the Government of China, Pakistan, and India are attached. The communication related to the remaining country requests to host the workshops is in the process of being finalized, as the Photovoltaic Market Transformation Initiative proposal was distributed to solicit feedback from over 35 GEF eligible countries through the GEF focal points. For countries that do not have the GEF focal points, Implementing Agency's channels of communication were used.

**Proposal for PDF Block A Grant of  
\$50,000 to Global Environment Facility for Stakeholders Consultations  
in Six Countries for the Photovoltaic Market Transformation Initiative**

**Part I: Eligibility**

- |    |                           |  |
|----|---------------------------|--|
| 1. | a. Project Title          | Photovoltaic Market Transformation Initiative (PV MTI); total estimated project cost: \$350M, estimated Global Environment Facility (GEF) financing: \$60 million  |
|    | b. ID no.:                |  |
|    | c. Implementing Agency:   | World Bank   |
|    | d. Executing Agency:      | International Finance Corporation  |
|    | e. IA Focal Point:        | Naima Mansur   |
|    | f. Principal Focal Area:  | Climate Change   |
|    | g. Cross Cutting Area:    |  |
|    | h. Scope:                 | International  |
|    | i. Country:               | Six GEF eligible nations   |
|    | g. Country Endorsement:   | Yes, three letters attached dated .... <sup>1</sup>  |
|    | h. National Focal points: | Secretariat for International Affairs of the Government of Brazil, Environment and Urban Affairs of Division of the Embassy of Pakistan, National Environment Secretariat of the Government of Kenya, Ministry of Finance of the Peoples Republic of China (Implementing Agency's channels of communications were used for Mexico, Brazil, and India, as these countries do not have the GEF focal points) |

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<sup>1</sup> Only letters from the Government of China, Pakistan, and India are attached. The communication related to the remaining country requests to host the workshops is in the process of being finalized, as the Photovoltaic Market Transformation Initiative proposal was distributed to solicit feedback from over 35 GEF eligible countries through the GEF focal points. For countries that do not have the GEF focal point, Implementing Agency's channels of communications were used (see Attachment 1).

2. a. **Country Eligibility:**

Convention: Climate Change

	<u>Country</u>	<u>Date of Climate Change Ratification</u>
i.	Pakistan	June 1, 1994
ii.	India	November 1, 1993
iii.	China	January 5, 1993
iv.	Mexico	March 11, 1993
v.	Brazil	February 28, 1994
vi.	Kenya	August 30, 1994

3. **Program Eligibility:**

a. Conference of Parties (COP) Guidance: Photovoltaic Market Transformation Initiative is fully consistent with GEF's lead role in funding the implementation of Framework Convention on Climate Change (FCCC). During the Conference of Parties (COP) meeting in Berlin in March 1995, the PV MTI was offered to FCCC by the World Bank as one of several options available to address the FCCC's priority of transfer of clean technology to address climate change.

b. GEF Operational Strategy: The project falls under the long-term measures of:

(i) Removing barriers (*Initial Proposed Operational Program #6*) for promoting broad dissemination of commercially available climate-friendly energy technologies (e.g., photovoltaics) by building endogenous capacity, and bear the learning cost of non-traditional climate-friendly energy technologies.

(ii) Reducing the long-term costs of photovoltaics (*Initial Proposed Operational Program #7*) which are highly promising, climate-friendly energy technologies, and help them become economically viable. The project's goal is to move the market for photovoltaics (PV) to the point where market size, prospective market development, and depth of distribution channels will reduce costs, and hasten the day when projects using the photovoltaics will become economically viable.

4. **Policy Framework:**

a. Country Priority:

(i) National strategy/action plan: PV MTI is consistent with the countries' environmental protection strategies and willingness to switch to renewable energy technologies (see Attachment I).

(ii) **Link to sustainable development planning:** PV MTI is consistent with both the countries' sustainable development and environmental strategies and priorities. The countries requesting the workshops have an abundance of solar resource endowment, strong private sector participation potential and public sector support, and potential large scale PV market development prospects. PV MTI would generate national participation of public and private sector, and enable capacity building through the private sector and public sector partnership in the area of photovoltaics energy technologies.

**b: Other Links:**

(i) **Other global agreements/conventions:** In 1995, the Organization for Economic Cooperation and Development (OECD) member countries endorsed the Climate Technology Initiative (CTI), as a linked set of national and international measures, practices and processes, including voluntary private sector activities to accelerate development, application and diffusion of climate-friendly technologies in all relevant sectors. The CTI's goal is to reduce emissions of greenhouse gases (GHG) globally, remove barriers and stimulate markets for business, and be a central piece of any resolution on climate technologies adopted at the first meeting of the Conference of the Parties to the Framework Convention on Climate Change in Berlin in 1995.

**5. Nature and scope of expected project:**

The PV MTI entails a moderately large scale intervention intended to advance PV to the status of a sound, bankable investment under a broad range of conditions. The PV MTI adopts a fundamentally different approach to previous World Bank and GEF approaches. Rather than pursue one-time emission reductions through technical assistance or pilot projects, the PV MTI entails a moderately large intervention (relative to existing markets) to initiate long-term GHG avoidance and reduction through the accelerated PV market penetration and cost reduction. In addition, this initiative is fundamentally different from a donor designed and implemented program in that primary innovation and implementation effort will come from the private sector. The program will be managed by the International Finance Corporation (IFC), the private sector affiliate of the World Bank Group.

The PV MTI is not a mass-buy program, and is not limited to manufacturing companies. The PV MTI takes a more comprehensive approach towards promoting photovoltaics, and includes all key players in the consumer and supplier chain of photovoltaic technology. Product manufacturers are not necessarily well-suited to the grass roots level business development, distribution chain, and consumer credit activities necessary to bring PV to developing countries. A number of NGOs have these skills, but lack the large scale project management experience and overhead cost coverage that manufacturing partners bring to the table. Commercial or agriculture banks in the developing nations offer knowledge of customer base and have mechanisms to provide rural system financing. The PV MTI is geared towards PV companies, system integrator, in-country utilities and system houses, distributors, and NGOs, which can all offer a

technical expertise consortia required to develop and support widespread dissemination of photovoltaics energy technologies.

**6. *Linkage of Expected Project to IA Program:***

This initiative is affiliated with the World Bank's Solar Initiative, which is intended to develop internal commitment and project development capability with the World Bank as well as provide an external liaison role in coordinating strategic activities in accelerated research, development and demonstrations of renewable energy technologies. The PV MTI also represents ideals of the emerging Climate Technology Initiative, a linked set of bilateral and multilateral programs designed to accelerate the development and diffusion of technology with global benefits through joint governmental and private sector activities. This PV MTI activity will therefore complement the Bank's on going renewable energies technologies promotion activities in IENPD and ASTAF.

**Part II: Information on Grant Activity(ies)**

**1. *Summary Description of the Proposed Project or Program in terms of its (a) Objectives and (b) Activities:***

As a result of this *first large scale global in-country consultation process*, GEF/IFC would modify the PV MTI proposal, fine-tune the criteria for Request for Proposals (RFP), facilitate the Early Opportunity Notice (EON) process and enhance understanding related to the in-country capacity building needs.

The PDF A grant funds will be used to support six in-country workshops to carry out stakeholders consultation process for the PV MTI. The workshop activities will entail communication and outreach that promote better public understanding of climate change issues, and GEF climate change strategy. The workshops will engender public participation, interaction, and consultations on PV MTI with major local private sector groups, commercial banks, research and development institutes, NGOs, investors, energy companies, and utilities. Feedback and interaction resulting from this activity will trigger developing countries' input into PV Market Transformation Initiative, and lay the ground work for amassing significant developing country demand through consortia formation, global *market aggregation* and market development for photovoltaics. Where government endorsement exists, the workshops could include brainstorming sessions for the establishment of North-South and South-South networks for the purpose of opening the channels of communications, and establishing and linking North-South, and South-South photovoltaics private sector.

**2. GEF Thematic Area:**

Climate Change.

**3. Expected Global Benefit:**

The workshops are designed to engender communication and outreach at a broad level. Globally, the workshops would initiate participation and consultations relating to the PV MTI, enabling faster and sustainable market penetration of photovoltaics (a renewable energy technology), and reduce green house gas emissions. The workshops would lay the groundwork for amassing significant developing country demand through consortia formation, global *market aggregation* and market development for photovoltaics.

The successful initiation of dialogue with the developing countries, braining storming sessions on development and establishment of North-South and South-South networks for the purpose of opening the channels of communications and establishing and linking North-South, and South-South photovoltaics private sector networks, would be useful in starting other market transformation initiatives related to low carbon energy technologies, which have steep learning curves ( e.g., fuel cells).

**4. Activities to be financed by the PDF Block A grant**

six country workshops.

**5. Expected Output(s) and Completion Date(s)**

The in-country stakeholders consultations will take place through a series of workshops during the months of January - February 1996. The outcome of the workshops will be documented, and reactions and recommendations arising will be analyzed and presented to the Bank/IFC program managers, PV MTI design consultants, and GEF management.

**6. Other possible contributors/donors and amounts:**

These costs include preparation costs for country consultations, and workshops, and the costs of concept development. These costs have been/will be funded through the World Bank's regular budget and "other in-kind contributions." Detail breakdown of "other contributions" is given below:

	<u>Actual</u> as of 12/15/95	<u>Planned</u>
<u>Regular Budget</u>		
Consultant salary	\$ 7,994.98	\$18,654.98
Bank staff cost (12 weeks @ \$3,750)	45,000.00*	
Bank staff cost (2 weeks @ \$3,750)		7,500.00
Staff planned travel costs for workshops		16,000.00
<u>Other in-kind contributions</u>		
USAID pre-PDF A concept development	50,000.00	
U.S. DOE pre-PDF A concept development	50,000.00	
Totals	<u>\$152,994.98</u>	<u>\$42,154.98</u>
Total planned and actual "in-kind contributions"		<u>\$195,149.96</u>

\*These costs are based upon amount of estimated staff/consultant time spent.

### **7. Total Budget and Information on how costs will be met for Block A**

Block A: The detail breakdown of total budget for six workshops, including local consultant cost, staff and consultant travel cost is listed below:

#### Planned workshop costs estimates<sup>2</sup>

Conference costs (venue, lunch, tea, etc.)	\$ 1,143
Conference material	572
Background Material	572
Communication, advertisement & conveyance	572
Local organization costs	1,714
Overhead	<u>286</u>
Total estimated cost for a single workshop	\$4,859

Total planned estimated cost for six workshops (\$4,859 x 6)	\$29,154
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#### Planned estimated travel costs

Consultant travel costs	<u>20,846</u>
Total estimated dollar budget for PDF A	<u>\$50,000</u>

### **Part III: Background on the Applicant Institution**

#### **1. Applicant:**

Applicants for PDF A grant and hosts of the workshops are country governments.

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<sup>2</sup> The detail breakdown of the planned workshops costs are based upon the information provided by Tata Energy Research Institute, New Delhi, India (see Attachment II).

**Attachment I:**

**Country Consultations/Workshops Requests**

A L L - I N - 1 N O T E

DATE: 01-Dec-1995 03:20am EST

TO: KEN NEWCOMBE

( KEN NEWCOMBE@A1@WBHQB )

FROM: WBD CHMOF, EA2CH

( CHMOF@A1@CHINA )

EXT.:

SUBJECT: PV Green Carrot

Mr. Ken Newcombe  
Chief, Global Environment Coordinating Division  
Environment Department  
The World Bank

From: Yang Jinlin  
GEF Focal Point of China  
World Bank Department  
Ministry of Finance, P.R.China

Dear Mr. Newcombe:

Thank you for your letter of Oct.26 and the attached document on PV Green Carrot Program initiative. Having discussed with our concerned agency, we would like to express interest in this initiative and host one day workshop in China.

As you may know, China has a lot of advantages in the PV area, however, it still needs incorporated proper mechanism and useful experience from the outside the country. Workshop approach might be a better way to learn and communicate.

Further Contact can be directly address to:  
Mr. ZHu Junsheng, Chief  
Renewable Energy Division  
Department of Resource Conservation and Comprehensive Utilization  
State economic and Trade Commission  
Fax: 86-10-3045326

CC: YUEBIN ZHANG

( YUEBIN ZHANG@A1@EDSEL )

1995-11-22

13:32

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Gram: SCIENTECH  
 Telex No: 5538 NIE PK  
 Fax No: 92-51-826376

From: Muhammad Ishaque,  
 Joint Electronics Adviser  
 Phone: 92-51-815642

No. 4(142)/95-FW  
 GOVERNMENT OF PAKISTAN  
 MINISTRY OF SCIENCE AND TECHNOLOGY



ISLAMABAD November 21, 1995.

Subject: One day Photovoltaic Workshop in Pakistan

Dear Mr. Ken,

I am writing this in connection with the implementation of the "Green Carrot" programme to be executed under the Global Environmental Facility (GEF), the details of which have been received through Najma Mansour, Energy specialist, of your Division. You may be informed that the Government of Pakistan takes keen interest in promotion of Solar Energy and in particular photovoltaic technology in the country and has established National Institute of Silicon Technology (NIST), Islamabad, which is engaged in the development of IV cells and dissemination of the solar (photo-voltaic) technology. NIST has established a solar house, a demonstration unit for use of photovoltaic technology to produce electric power for encouraging the private sector to pick it up for further promotion of this technology.

2. You may also be aware that this Ministry in collaboration with the UNKSCO is organizing a 4-day Asia and Pacific Regional Solar Experts Meeting on 18-21 November 1995 at Islamabad. The purpose of the meeting is to assess the capabilities of the region in the field of solar energy and formulate proposals for the promotion of solar technology at a national and regional level. Experts from countries belonging to CIG, ECN, ASEAN, Asia and Pacific region and representatives of international agencies like UNKSCO, UNIDO, FAO will attend the meeting. Copies of the First and Second Announcements of the meeting alongwith the list of important participants are enclosed for your kind perusal. Additionally both private and public sector industries/ Establishments have been invited to participate in the Exhibition being organized and display their products. It is expected that the meeting will help in finding institutions and

*Handwritten notes:*  
 ✓ NIST  
 Please prepare response for me.

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areas where private sector will be attracted for photovoltaic technology subject. It is hence timely that we find such at your end in which we shall be rather greatly interested for collaboration.

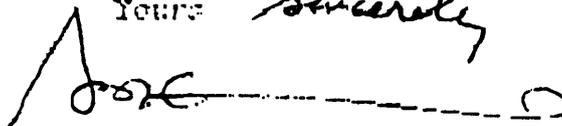
3. However further to participate actively in the Green Carrot Programme, National Institute of Silicon Technology (NIST) of this Ministry would like to organize the subject workshop in Islamabad on 11.01.1996. In collaboration with the Environment Department of your Division. It will be appreciated if the modalities of collaboration are spelled out in terms of participation from your side in order to activate the private sector too in this field. Dr. Atiqus Mufti, Director General, NIST (Phone 92-51-251287, Fax 92-51-255943) has been requested to contact you to finalize the programme of the workshop. Dr. Mufti can however be contacted directly too in this regard.

4. I shall be looking forward to your response in this regard.

With best wishes

Yours

*Sincerely*



(MUHAMMAD TSHAQUE)

Mr Ken Newcombe  
Chief  
Global Environment Coordination  
Environment Department  
The World Bank  
Washington, D.C. 20433,  
USA

CC: ✓ Naima Mansur  
Renewable Energy Specialist,  
Global Environment Coordination  
Washington, D.C  
USA

With reference to her Fax  
dated 17.11.1995

# WORLD SOLAR SUMMIT PROCESS PROCESSUS DU SOMMET SOLAIRE MONDIAL

## FIRST ANNOUNCEMENT



Ministry of Science and Technology  
Government of Pakistan



United Nations Educational, Scientific  
and Cultural Organization, (UNESCO)



National Institute of Silicon Technology,  
Islamabad, Pakistan

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**INVITATION**

The Organizing Committee has much pleasure to invite your  
Government / Organization / Institution / Department  
to contribute to the preparation and convening of  
**Asia-Pacific Solar Experts Meeting**  
**"Renewable Energies for Development, Culture and Environment"**  
to be held in Islamabad, Pakistan from 18 to 21 Dec., 1995

**AIMS AND OBJECTIVES**

The meeting will assess the present status of research,  
development and applications of Renewable  
Energy Resources, their impact on culture and environment,  
future prospects and constraints in the region.

The meeting will define the Asia Pacific  
region contributions to the following main documents:

- |                                 |                               |                             |                               |   |
|---------------------------------|-------------------------------|-----------------------------|-------------------------------|---|
| <b>World Plan<br/>of Action</b> | <b>Strategic<br/>Projects</b> | <b>World Solar<br/>Fund</b> | <b>World Plan<br/>Charter</b> | <b>International<br/>Solar<br/>Convention</b> |
|---------------------------------|-------------------------------|-----------------------------|-------------------------------|---|

These documents will be submitted to **The World Solar Summit**  
scheduled to be held at **Zimbabwe in Sept., 1996**

1995-11-22

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Asia Pacific  
**Solar Experts Meeting**  
Renewable Energies for Development,  
Culture and Environment

December 18-21 1995  
ISLAMABAD - PAKISTAN

**Sponsors:**

1. Ministry of Science & Technology,  
Government of Pakistan
2. United Nations Educational Scientific  
and Cultural Organization. (UNESCO)

**Organiser:**

National Institute of Silicon Technology (NIST)  
Ministry of Science & Technology, Islamabad, Pakistan

**Participants:**

Countries invited for participation include Afghanistan, Australia, Azerbaijan, Bangladesh, Bhutan, Brunei, Burma, China, India, Indonesia, Iran, Japan, Kazakhstan, Kirgizstan, Korea, Malaysia, Maldives, Nepal, New Zealand, Pakistan, Philippines, Sri Lanka, Thailand, Tajikistan, Turkmenistan, Uzbekistan and Vietnam.

Besides these countries representatives of UNESCO, UNIDO, ECO, SAARC, IFSTAD, Commonwealth Science Council and UN Commission on Science & Technology Development are also expected to participate.

Nominations are invited, one each, from the participating countries. Nominee must be a practical senior working scientist in any of the Solar Energy Technology fields.

**Date of Receiving  
Nominations for  
Participation:**

Sept 15, 1995.

**Date of  
Submission of  
Country Papers:**

October 15, 1995.

**For more details  
please contact:-**

Dr. Atique Mufti,  
Director General,  
National Institute of Silicon Technology,  
25, H-9, Islamabad- Pakistan  
Phones: (Office) : 92-51-851987  
(Residence): 92-51-854817 & 853032  
Fax: 92-51-855942 Telex: 5538 NIE PK

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### GENERAL PROGRAMME

**Subject Fields:**

Renewable Energy Resources particularly Solar Energy such as Solar Thermal Applications, Photovoltaics, Solar Hydrogen, Building Architecture, Energy Systems, Culture and Environment Energy Policies, Education and Dissemination, etc.

**Review Lectures:**

Two well reputed scientists will give four review lectures on the theme of technical, social, economic and political status of Renewable Energies specially Solar Energy Development.

**Country Papers:**

The nominee of each country will contribute a country paper highlighting the following, besides any other topics.

- a) Needs and Justification of Solar and other Renewable Energy Resources for the country.
- b) Current status of these Technologies and their impact on Cultural and Environmental activities in the country.
- c) Organisational capabilities of the country for imparting training and undertaking joint research projects.
- d) Solar Energy programmes as part of National Energy and Environment Policies, Education and Dissemination.
- e) Constraints and possible suggestions for their solutions.

**Language:**

The language of the meeting will be English.

**Proceedings:**

The proceedings of the Workshop will be printed in the form of a book to serve as a reference.

1995-11-22

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# ASIA - PACIFIC SOLAR EXPERTS MEETING

RENEWABLE ENERGIES FOR DEVELOPMENT  
CULTURE AND ENVIRONMENT

DECEMBER 18 - 21, 1995  
ISLAMABAD, PAKISTAN

WORLD SOLAR SUMMIT PROCESS  
PROCESSUS DU SOMMET SOLAIRE MONDIAL

## SECOND ANNOUNCEMENT



Ministry of Science and Technology  
Government of Pakistan



United Nations Educational, Scientific  
and Cultural Organization (UNESCO)



National Institute of Silicon Technology  
Islamabad, Pakistan

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**ASIA - PACIFIC**  
**SOLAR EXPERTS MEETING**  
**RENEWABLE ENERGIES FOR DEVELOPMENT,**  
**CULTURE AND ENVIRONMENT**

18-21  
 December - 1995  
 Islamabad, Pakistan

**TENTATIVE PROGRAMME**

December 18 1995 (Monday)	09.00 - 10.00	Registration
	10.00 - 12.30	Inauguration by H.E. Mr. Farooq Ahmed Khan Leghari, President, Islamic Republic of Pakistan
	12.30 - 13.30	Review Lecture
	13.30 - 14.30	Lunch
December 19 1995 (Tuesday)	14.30 - 18.00	Country papers
	09.00 - 10.30	Review lecture
	10.30 - 13.00	Country papers
December 20 1995 (Wednesday)	13.00 - 18.00	Lunch + Excursion Trip
	09.00 - 10.30	Review lecture
	10.30 - 13.00	Country papers
	13.00 - 14.30	Lunch
	14.30 - 16.00	Review lecture
December 21 1995 (Thursday)	16.00 - 18.00	Country papers
		Cultural programme (in the evening)
	09.00 - 12.00	Group discussion and formulation of proposals.
	12.00 - 13.30	Presentation and adoption of proposals.
	13.30 - 15.00	Lunch
	15.00 - 16.30	Closing ceremony Chief Guest Mrs. Shahnaz Wazir Ali, Special Assistant to the Prime Minister

1995-11-22 13:21 \*\*C.S.C PAK. TELECOM IBA\*\* 92 51 216380

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ASIA - PACIFIC

# SOLAR EXPERTS MEETING

## RENEWABLE ENERGIES FOR DEVELOPMENT, CULTURE AND ENVIRONMENT

December 13-21 1995  
Islamabad, Pakistan

### Date and Venue

From December, 1995 in Islamabad (Pakistan).

### Language

The official language of the meeting is English.

### Passport and Visa

All persons entering Pakistan should have a valid passport and a visa issued by Pakistan Mission in their countries. For any further details, inquiry be made at the Pakistan Mission.

### Health Requirements

Participants are advised to consult the Pakistan Mission in their own countries to obtain up-to-date information on health requirements.

### Climate and clothing

In December, the weather in Islamabad is generally cold. Day temperature may vary between 10°C and 15°C. Warm clothing is recommended.

### Currency

Pakistan's currency is "Rupee". The present exchange rate is around Rs. 32.00 to a US dollar. Exchange facilities are available at the hotels, airport as well as at commercial banks.

### Insurance

The Organizing Committee will not accept any responsibility for accidents or illness incurred to participants, or loss or damage to their personal effects during the meeting time. This includes shuttle bus transfers, official sessions, technical tours, social and cultural functions, post-meeting tours, etc. For this reason, we recommend the participants to have an appropriate insurance prior to their departure for Pakistan.

### Voltage

The domestic power supply in Islamabad is 220V - 240V, 50 cycles.

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**Airport tax**

Every passenger has to pay a tax of Rupees 350 on international and Rupees 20 on domestic flights on departure.

**Accommodation**

The organizing Committee has reserved a number of rooms at Holiday Inn (Islamabad Hotel, Phone No. 827311).

**Travel**

The participants are requested to communicate by Oct. 20, 1995 the place of their departure in their country, alongwith passport number, place and date of issue so that PTA for their travel could be sent by the organizing committee.

It may be noted that only one nominee from each participating country will be entitled to travel grant and local hospitality.

**Information prior to arrival**

The participants are requested to communicate the Organizing Committee the details of their flights so that arrangements can be made for receiving them at the airport.

In case there is some difficulty at the Islamabad/Rawalpindi Airport either contact Dr. Atique Mufti on the phone numbers given below or the Holiday Inn Hotel transport can be obtained at the airport to the hotel.

**Information for Country Papers**

Country papers should be typed 1 1/2 space between the lines on A-4 page leaving 1 inch margin on all sides of the paper. These should reach Dr. Atique Mufti by November 10, 1995.

**Contact Address in Pakistan**

Dr. Atique Mufti

Director General

National Institute of Silicon Technology

25, H-9, Islamabad-Pakistan

Phone: (Office) 92-51-851987

(Residence): 92-51-854817 & 853032

Fax: 92-51-855942 or 92-51-825376

Telex: 5538 NIF PK

NOV-21-95 14:45

TEL:436-1152

P:01



AJIT K. GUPTA  
ADVISER

32/386/95-pv/PG

भारत सरकार

पारम्परिक ऊर्जा स्रोत मंत्रालय

Government of India

MINISTRY OF NON-CONVENTIONAL ENERGY SOURCES

MPLEX, LODI ROAD, NEW DELHI

पारम्परिक ऊर्जा स्रोत मंत्रालय, नई दिल्ली

Fax/ 4361152  
Tel: 4361152  
Telex: 4361152

Fax/ 4361152

21 Nov 95

Dear Ms. Mansur,

This is with reference to your fax of November 7, 95 and our subsequent discussion on telephone with regard to the proposed Workshop in developing countries on the PV Green Carrot initiative. I am writing this to confirm the interest of this Ministry to host the Workshop for India.

As discussed with you, we would like to offer host facilities for a Regional Workshop at New Delhi with participation from four other countries in the Region, namely, Sri Lanka, Thailand, Malaysia and Indonesia. The Regional meeting could be organized towards the end of January or early February and instead of being only for one day it could extend to three days. This will provide an opportunity to exchange experiences as well as to introduce these countries to the PV Green Carrot initiative. This could later be followed by in-country meetings, if necessary.

Please let us know your views in the matter so that we may proceed ahead with the planning of the Workshop accordingly. We understand that the cost of hosting the Workshop will be covered by the World Bank.

With regards,

Yours sincerely,

*Ajit Gupta*

(AJIT K. GUPTA)

Ms. Naima Mansur  
Renewable Energy Specialist(Consultant)  
Global Environment Co-ordination  
The World Bank  
1818 H Street, NW  
Washington, D.C.  
U.S.A.  
Fax : 00 202 522 3256

**Attachment II:**  
**Workshops Cost Estimates**

A L L - I N - 1 N O T E

DATE: 01-Dec-1995 06:20am

TO: Naima Mansur 34671

( NMANSUR@worldbank.org@INTERNET

FROM: Dr P Venkataramana,

( pvrmana@teri.ernet.in@INTERNET

EXT.:

SUBJECT: Re: PV Green Carrot Workshop in India

Dear Naima,

Hi! We have been in touch with MNES (Ajit) after you talked to him and based on the discussions, I am sending a proposal for conducting the workshop a copy of which I have sent to Ajit Gupta. This includes tentative program and budget. We have also thought January 5 as a good date for the workshop as the MNES secretary is available, etc. Can you please react to the proposal quickly so that we can go ahead with the arrangements immediately? Since time is short, a quick response would be desirable.

Since I will be away from Delhi between 4 and 9 Decemebr, please communicate with Ajay Mathur at <mailbox@teri.ernet.in>.

With kind regards,

Venkat

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Proposal

Workshop on Accelerating the Development and Commercialization of Photovoltaic Technology in India

INTRODUCTION

Photovoltaic technology and its applications have come to be regarded as important areas for India-s quest for development and utilization of non-conventional energy sources. Photovoltaic technology is widely recognized as an environmentally friendly technology capable of meeting electrical power requirements in rural, remote and unelectrified areas.

In order to accelerate the commercialization process of PV technology in India and other third world countries, the World Bank has launched an initiative called the PV Green Carrot aimed at expansion of developing country markets for PV devices and applications by developing innovative incentives. In India, the Ministry of

### Non-conventional Energy

Resources (MNES) has indicated their active interest in this initiative.

The Green Carrot would take the form of a \$15-20 million reward for each of three companies with the most innovative proposals for effecting the market transformation for PV technologies in the developing world. The reward is considered a substitute for (i) subsidy on PV products combined with market plans to achieve wide spread dissemination of PV systems; (ii) capital investment for manufacturing scale up resulting in significant cost reduction; and (iii) creation of consumer credit mechanisms to maximize market penetration at the current prices.

### THE WORKSHOP

In order to jumpstart this programme, the World Bank proposes to conduct brainstorming a workshop involving major stakeholders in the PV sector which could help in formulating plans for implementation. It is in this regard that the Tata Energy Research Institute offers its services in assisting the MNES in organizing this workshop in the first week of January, 1996.

The main objective of the workshop would be to further develop the PV Green Carrot concept. The aim is to gather all the major stakeholders involved to develop a formal process of starting the initiative. The workshop will also help identifying individuals and organizations willing to serve on an international advisory body formed for the specific purpose of formalizing the initiative.

### PARTICIPATION

The major stakeholders in this initiative, viz. manufacturers, users, technical and financial intermediaries and policy makers will be invited to participate in the workshop. It is expected that the workshop would be attended by 30-35 participants with a fair representation from all the stakeholders.

### TENTATIVE SCHEDULE

Session I: Inaugural

0 00 am Registration

09:30 am - 09:40 am: Welcome address by Dr R K Pachauri, TERT

09:40 am - 09:50 am: Address by Mr B R Prabhakara Secretary, MNES

09:50 am - 10:10 am: Introduction to PV Green Carrot - World Bank

10:10 am - 10:30 am: Financial aspects in commercialization of SPV technology - Dr V Bakthavastalam, Managing Director, IREDA

10:30 am - 10:50 am: Overview of Indian SPV sector - Dr EVR Sastry Advisor, MNES

10:50 am - 11:00 am: SPV for power generation - Mr Ajit Gupta Advisor, MNES

11:00 am - 11:15 am: Tea

#### Session II: PV industry perspective

11:15am - 12:00 noon (10 minute presentation followed by discussion): Barriers to commercialization of SPV products - Tata BP Solar (Mr A K Vora)

12:00 noon - 12:45 pm (10 minute presentation followed by discussion): Market demand and potential estimates - (Mr T Anjaneyulu)

12:45 pm - 01:30 pm (10 minute presentation followed by discussion): Comparison of SPV products to other alternatives and possible cost reduction techniques - Mr Gulshan Kapur (Advanced Electronics)

01:30 pm - 02:30 pm: Lunch

#### Session III: Financial and dissemination perspectives

02:30 pm - 03:00 pm (10 minute presentation followed by discussion): Financial perspectives of non commercial banking organisations - Tata Finance Limited

03:00 pm - 03:30 pm (10 minute presentation followed by discussion): After sales service and maintenance support - Selco, Managlore; SWRC, Tilonia

03:30 pm - 04:00 pm (10 minute presentation followed by discussion): User perceptions on PV commercialization - TERI

04:00 pm - 04:15 pm: Tea Break

#### Session IV: Concluding session

04:15 pm - 04:45 pm: Summing up

04:45 pm - 05:15 pm Plan of Action

05:15 pm - 05:20 pm Vote of thanks

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BUDGET ESTIMATE

Conference costs (venue, lunch and two teas) @ Rs 500 per person =  
40,000 1,142.86.

Conference material (bags, banner, a/v equipment, etc.) = 20,000 - 571.0

Background material = 20,000 571.43

Communication and conveyance = 20,000 571.43

TERI professional costs - 60,000 1714.29

Overheads = 10,000 286.

Total = 170,000 (US\$ 4850)

(Note: If some participants' travel and accommodation needs to be paid for, that will be in addition.)

12-18-95 01:17PM FROM ENVGC NEWCOMBE

TO 23240

P027/030

CC: Mr. Ajit K. Gupta, Advisor, MNES, New Delhi (hard copy).

CC: Dr P Venkataramana

( pvramana@teri.ernet.in@INTERNET

## RFC-822-headers:

Received: from vikram.doe.ernet.in by worldbank.org (PMDF V5.0-5 #7413)  
id <01HYPOMKCA28002OHL@worldbank.org> for nmansur@worldbank.org; Tue,  
12 Dec 1995 08:16:19 -0500 (EST)  
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12 Dec 95 17:28:50+050  
Date: Tue, 12 Dec 1995 17:21:28 +0530  
From: Dr Ajay Mathur <amathur@teri.ernet.in>  
Subject: INDIA: PV Green Carrot Meeting  
To: nmansur@worldbank.org  
Cc: Dr P Venkataramana <pvramana@teri.ernet.in>  
Message-id: <A.818789040@teri.ernet.in>  
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From: Muhammad Ishaque,  
 Joint Electronics Adviser  
 Phone: 92-51-815642

No. 4(142)/95-EW  
 GOVERNMENT OF PAKISTAN  
 MINISTRY OF SCIENCE AND TECHNOLOGY



ISLAMABAD December 14, 1995.

Subject: Photovoltaic Market Transformation Initiative (Green  
 Growth Workshop in Pakistan)

My Dear Mrs. Mansur,

With reference to your Fax message dated 11.12.1995 addressed to Dr. Aftab Khan, Director General, National Institute of Silicon Technology, Islamabad, following are the budget estimates to arrange the subject Workshop in Islamabad on 12.01.1996:

(i)	Reservation of conference hall and lunch at Hotel Marriott, Islamabad	US\$1500
(ii)	Dinner at Hotel Marriott	US\$1000
(iii)	Press advertisement/ publicity/	US\$2000
(iv)	Postal charges/ Faxes/ Forms/ Conveyance and Honorarium for workers.	US\$1000
	<b>TOTAL:</b>	<b>US\$5500</b>

2. I hope the above information will be sufficient to manage necessary funds for the one day Photovoltaic Workshop in Islamabad.

With best regards

Yours sincerely,

MUHAMMAD ISHAQUE

Mrs Naima Mansur  
 Renewable Energy Specialist  
 Global Environment Coordination  
 Room No 2145, World Bank  
 Washington D.C 20439  
 USA

1995-11-22 13:21 \*\*C.S.C PAK.TELECOM IBA\*\* 92 51 216380

P.06

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LIST OF IMPORTANT PARTICIPANTS ATTENDING ASIA-PACIFIC SOLAR  
EXPERTS MEETING, DECEMBER 21, 1995, ISLAMABAD

1. Mr Peter J. McKenzie  
Managing Director  
Siemens Showa Solar  
Block 164, Kallang Way  
No. 05-14/15, Kolam Ayer  
Singapore.
2. Mr. Mandanjet Singh  
Special Advisor to Director General  
UNESCO, 57 Quai de Grenelle  
Paris 75015, France.
3. Prof. R. Hill  
Newcastle Photovoltaics Application Centre,  
University of Northumbria,  
Elizium Place,  
Newcastle Upon Tyne, NE1 8GT,  
U.K.
4. Prof. A.P.W. Willoughby,  
Department of Engineering Materials,  
University of Southampton,  
Highfield, Southampton SO17 1BJ,  
U.K.
5. Dr. C.M. Lampart,  
Solar Energy Research Institute,  
Golden, Colorado,  
U.S.A.
6. Mr. Rene Roy,  
Secretariat,  
E7 Network of Expertise for the Global Environment,  
P.O. Box 6162,  
Montreal, Quebec,  
Canada H3C 4G7.
7. Mr. Robert C. Kelly,  
Chief Executive Officer,  
Amoco/Enron Solar Power Development,  
P.O. Box 1190, Houston, Texas  
U.S.A.