

March, 2008

FACILITATION WORKSHOP ON TECHNOLOGIES AT WORK

Prepared for
EU T@W

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WORKSHOP PROCEEDINGS

FACILITATION WORKSHOP ON: TECHNOLOGIES AT WORK

21-22 February 2008, New Delhi

Brief Write up

TERI as a part of Technologies at Work (T@W) project organized a **Facilitation workshop on Sustainable Energy Technologies (SET) at Work** in New Delhi on 21-22 February, 2008. The T@W project has been funded under the European Commission, Sixth Framework Programme (FP6) to enhance penetration of the SET and know-how on emerging Carbon market through European Union-Emission Trading Scheme (EU ETS) and Clean Development Mechanism (CDM). The workshop aimed to identify SET/CDM project development opportunities in India in line with the technology needs and technology transfer aspects. The workshop also provided a platform for interaction amongst the buyers from EU and sellers of Certified Emission Reductions (CER) from India thus facilitating business cooperation between them.

The first day of workshop provided the participants with current scenario in renewable energy and CDM in India, besides providing the opportunity to liaison with European technology providers and CER buyers. On the second day one-on-one interaction between the European industries and the Indian counterparts took place and helped to take over from the understanding reached on day one of the workshop.

The event showcased selected EU technology in renewable and facilitate interaction amongst Indian industries and the technology providers from EU countries. It was stressed that technological collaboration is needed to further accelerate the efforts to combat climate change. Biomass based projects, wind energy and small hydro projects were showcased by both sides. Special interest in biomass based projects was seen amongst the participants.

Inaugural Session:

The inaugural session was chaired by Dr. T. S. Panwar from TERI and provided an insight to overall objective of the project to the participants. Mr. Vilhjálmur Nielsen from Energy Consultancy Network (ECN) stressed that the key objective of the project was to assist the EU companies to meet challenges of climate change by promoting cooperation with Asia and initiate joint action on research and business. The project is spread across India, China, Thailand and Malaysia in Asia. Pilot CDM projects shall be taken up in these countries which shall be reported as a part of publication on key findings by end of action. The second phase of the project shall begin in spring of 2008 and shall focus on energy efficiency and programmatic CDM.

First Session, Day I:

The first session of day one provided insights by renewable industry experts from India on current technology scenario and expectations. The session was chaired by Dr. P. C. Maithani, Director, Ministry of New and Renewable Energy (MNRE), Govt. of India (GoI). Mr. Jami Hossain, from Gujarat Fluorochemical Industries provided an overall picture of wind energy sector in India. The presentation covered the technical aspects of wind power generation. He highlighted the fact that all the technologies related to wind energy have improved manifold, resulting in expansion of wind energy production. However, cost optimization and variability of wind speed still remains a problem. Integration of wind energy with conventional power grid is a challenge facing the wind energy expert and collaboration to reach the same was highlighted. Mr. P. Raman from TERI stressed that biomass provides smokeless and clean energy. He pointed to the fact that to make it more popular small scale industries need to do slight modification in their processes. Village energy security through biomass was also highlighted. Various activities in villages supported by biomass gasifier stoves were also shared with the participants. However, availability and procurement of raw material for large scale systems remains a problem. Removal of impurities in the gas at the source stage itself also needs to be an area to be explored in future. Dr. N. B. Mazumdar from TERI provided insights on Municipal Solid Waste (MSW) in India. Cases of harnessing

methane from old dump sites and trapping landfill gas from existing landfill were shared. Waste to energy projects and their benefits were shared. CDM projects from the sector in India were also highlighted. He pointed out that in India, deposited waste is often put on fire and so the potential of utilising it gets wasted. In the small hydro sector, Dr. Arun Kumar from IIT, Roorkee showcased various technologies available at the moment in India. He also focussed on expectations from new hydro policy, which is expected to come out soon. Cleaning of trash and slit removal remains a problem. Financial issues related to small hydro projects and utility of CDM to meet the same were also highlighted. Small Hydro Projects are envisaged to be developed through private sector participation, state government, central PSUs and various local NGOs.

Second Session, Day I:

Session two on the first day provided insight into the Indian CDM market from seller's perspective. Mr. Balagurunathan from Senergy Global presented Senergy Global's portfolio of projects in renewable energy. He provided an insight into the wind energy sector in India. Against the potential of 45,000 MW of wind energy generation only 7,230 MW has been installed in India. As of now more than 200 renewable projects from India have been registered by CDM Executive Board (CDM-EB). Senergy Global has successfully provided consultancy to one of the largest wind power projects in India registered under CDM. He expressed concern that there is very less transparency in the market mechanism. Uncertainty over taxation of CER revenue was also raised. Mr. Indra Guha from Ernst & Young shared the various methodologies present in MSW and their applicability. MSW has not been able to take benefit from CDM for long, but he expressed satisfaction that the sector is slowly picking up and expressed hope that the sector would see more CDM projects coming up. He also presented case studies on some of the MSW projects registered under CDM project cycle. Mr. Vilhjalmur Nielsen from Energy Consulting Network, Denmark shared the status of renewable energy and its distribution in Denmark. He emphasized the Danish government's aim to meet EU 2020 goal of 30% renewable energy target. He highlighted that the wind sector in Denmark is almost fully exploited and that the industries from Denmark are on lookout to expand by

sharing their technology in other countries. An interesting point made during the presentation was the shift of Denmark from centralized production in mid 80s to decentralized production as of today. Various technologies were showcased during the presentation especially from biomass sector.

Third Session, Day I:

The final session of day one focused on technology transfer aspects and was chaired by Dr. Y. P. Abbi from TERI. Dr. Grassi Giuliano from European Union Biomass Industry Association (EUBIA) covered the biomass sector extensively. He showcased various technologies present which could be applicable in Indian context. He also emphasized the need to make the technologies adapt to local needs. Ms. Ana Pipio from IST, Portugal shared the research findings on various renewable technologies undertaken in Portugal. She also showcased the key EU technology challenges for the next ten years to meet the 2020 targets. Ms. Ana also provided information on Early Market Introduction of New Energy Technologies (EMINENT), an international cooperation project taken up to promote energy technologies. The main objective of the project is to identify and accelerate introduction and implementation of leading edge European energy and environmental technology into the market place in Europe and worldwide. Ms. Patricia Cardoso from Ecoprogresso shared the objectives of first Portuguese Carbon Fund – Luso Carbon Fund with the participant. The fund is making an entry into Indian Carbon market and looks forward to purchasing the CERs to help Portugal meet the targets under Kyoto Protocol. The fund has a target capital of €200 M. She looked forward to up-scaling the operations in India. The fund will focus on technology specific projects and can help the project owner by providing know how for setting up the project to the issuance of carbon credits.

Day II:

The second day of the workshop provided the platform for the Indian companies and EU industries representatives. It helped them to share thoughts and have one to one meeting with each other to take up further possibilities of collaborating with each other. There

was a high interest amongst the participant to share technological inputs from Biomass industries and share their findings to take up further projects.

ANNEXES

1. AGENDA

2. LIST OF PARTICIPANTS

**Agenda
 Technology at Work
 Facilitation Workshop**

21-22 February 2008, New Delhi

Venue: Maharani Hall, Hotel Claridges

THURSDAY, 21 FEBURARY 2008

TIME	SESSION
09:30 – 10:15	Registration
10:15 – 11:15	Inaugural session
10:15 – 10:25	Welcome address – Dr. T. S. Panwar, Director, Energy Environment Policy, TERI
10:25 – 10:45	Introduction to the T@W Project, Vilhjalmur Nielsen, ECN
10:45 – 11:05	Introduction to T@W facilitation workshop: Objective, scope and expected outcomes – Dr. Vivek Kumar, Associate Fellow, TERI
11:05 – 11:15	Vote of thanks – Mr. Prabhat Upadhyaya, Research Associate, TERI
11:15 – 11:30	Coffee break
11:30 – 12:30	Session 1: Renewable energy in India – Current technology scenario and expectations
	Chair: Dr. P. C. Maithani, <i>Director, Ministry of New and Renewable Energy, Govt. of India</i>
11:30 – 11:45	Wind Energy: Mr. Jami Hossain, VP (Wind energy), GFL
11:45 – 12:00	Biomass: Mr. P. Raman, Fellow, TERI

12:00 – 12:15	Municipal Solid Waste: Dr. N. B. Mazumdar, Consultant, TERI
12:15 – 12:30	Small Hydro projects: Dr. Arun Kumar, IIT Roorkee
12:30 – 12:45	Discussions
12:45 – 13:30	Lunch
13:30 – 14:30	Session 2: Indian Renewable CDM projects – Case study presentations – Sellers’ perspective
	Chair: Ms. Ana Pipio, IST, Portugal
13:30 – 13:45	Wind Energy: Mr. S. Balagurunathan, Manager, Senergy Global
13:45 – 14:00	Biomass and waste to energy: Vilhjalmur Nielsen, ECN
14:00 – 14:15	Municipal Solid Waste: Mr. Indra Guha, Manager, Ernst & Young
14:15 – 14:30	Discussions
14:30 – 14:45	Tea/Coffee
14:45 – 16:30	Session 3: Technology Transfer – Providing the missing pieces Technology for combating Climate Change
	Chair: Dr. Y. P. Abbi, Senior Fellow, TERI
14:45 – 15:05	Good technological practices: Ms. Ana Pipio, IST, Portugal
15:05 – 15:25	Carbon Fund: Ms. Patrícia Cardoso, Ecoprogresso, Portugal
15:25 – 15:45	Biomass: Dr. Giuliano Grassi, Seceratery General, European Biomass Industry Association (EUBIA)
15:45 – 16:00	Discussions
16:00 – 16:20	Close of Day 1: High Tea

FRIDAY, 22 FEBURARY 2008

TIME	SESSION
09:30 – 10:00	Registration
10:00 – 11:30	Bilateral Meetings I
10:00 – 10:15	A brief of presentations on day1. Introduction to the program and day's agenda
10:15 – 11:30	Bilateral meetings
11:30 – 11:45	Coffee Break
11:45 – 13:00	Bilateral Meetings II
13:00 – 13:45	Lunch and wrap up

Annex II

List of Participants

S.No.	Name	Organization
1.	Ms Patrícia Cardoso	Ecoprogresso/ Luso Carbon Fund
2.	Mr Indra Guha	Ernst & Young Pvt. Ltd
3.	Dr Giuliano Grassi	European Biomass Industry Association
4.	Mr. Jami Hossain	GFL
5.	Ms Ana Pipio	IDMEC - Instituto de Engenharia Mecânica
6.	Dr. Arun Kumar	IIT Roorkee
7.	Mr. G. N. Agrawal	Mawana Sugars Limited
8.	Dr. P. C. Maithani	Ministry of New and Renewable Energy
9.	Mr S. Balagurunathan	Senergy Global
10.	Dr. P. Raman	TERI
11.	Dr Y P Abbi	TERI
12.	Dr T S Panwar	TERI
13.	Dr N B Mazumdar	TERI
14.	Dr Vivek Kumar	TERI
15.	Mr. A.K.Khater	Amrit Non Conventional Energy System Limited
16.	Dr.Timothy Patrick Fox	Centre of Development Finance
17.	Dr. Kusum Lata	Deloitte Touche Tohmatsu India Private Limited
18.	Mr Geir Falkenberg	Falkenberg Consulting
19.	Mr Ravinder Singh	Innovative Technologies and Projects
20.	Dr S P Dubey	IOCL
21.	Mr K K Mahajan	K S J Engineering and Projects
22.	Mr P Bhaskar	K S OILS LIMITED
23.	Mr P Ramana Reddy	KfW Entwicklungsbank
24.	Mr Shanti Nath Jain	MGM International
25.	Mr H S Sharma	National Energy Consultant
26.	Mr G C Dhingra	Power & Energy Consultants
27.	Mr R. K. Mohta	Power & Energy Consultants
28.	Mr A.K.Singh	Renovo Energy Limited
29.	Dr K Ravi Srinivas	RIS
30.	Mr Asheesh Agarwal	Royal Norwegian Embassy
31.	Mr Per Reinboth	Royal Norwegian Embassy
32.	Mr. Rajiv Kaul	Royal Norwegian Embassy
33.	Mr Sachin Gupta	SGS India Pvt Limited

34.	Mr Jagat S Jawa	Solar Energy Society of India
35.	Mr R K Gupta	Tata Services Limited
36.	Mr Vivek Kodesia	Vestas RRB India Limited
37.	Mr Abhay Siddham	
38.	Ms Heinz Wirth	Embassy of the Federal Republic of Germany
39.	Mr T V Hariharan	Vestas RRB
40.	Mr Ravi Ranjan Guru	ICCEI-South Asia
41.	Mr S P Singh	IOCL
42.	Mr Jaideep Tanna	M Kantilal Exports
43.	Mr Rahul Rai	Rabo India Finance Limited
44.	Mr Jotdeep Singh	Rabo India Finance Limited
45.	Ms Mirjam 't Lam	Rabo India Finance Limited
46.	Mr Arvinder S Brara	MANTEC Consultants Pvt. Limited
47.	Ms Priya Dagar	TERI
48.	Mr Prabhat Upadhyaya	TERI
49.	Ms Kakali B Chakrabarti	TERI
50.	Ms Dalvinder Jeet Kaur	TERI
51.	Mr Rajiv Chhibber	TERI
52.	Mr Prabhat Upadhyaya	TERI
53.	Mr P P Madhusoodhanan	TERI
54.	Mr Shyam S. Nayar	TERI