Annual Report

Annual Report

2005–06

World Institute of Sustainable Energy

World Institute of Sustainable Energy

(From R to L) G M Pillai, DG, WISE; Vilas Muttemwar, Hon. Minister of State (Independent Charge) for Non-Conventional Energy Sources, Govt. of India; Late Justice Ashok A Desai, former Chief Justice, Uttaranchal High Court; and Ramesh Kymal, MD, NEG Micon (I) Pvt. Ltd. and Chairman, Renewable Energy Council, CII-Godrej GBC, at the Inaugural Ceremony of the one-day seminar on 'A Renewable Energy Law for India', held on 25 August 2005 in New Delhi.

(From R to L): Sujan R Chinoy, Consul General of India in Shanghai; P Chidambaram, Union Finance Minister; and Milind M Deshpande, Manager (Admin & Accts), WISE, at the 'Made in India' Trade Show held from 17– 20 October 2005 in Shanghai, China. WISE was one of the renewable energy exhibitors at the Trade Show.

Annual Report 2005–06

World Institute of Sustainable Energy

CONTENTS

Reflections... by the Director General

- Genesis . . . 1
- Centre for Policy and Sustainability Research 2
- Centre for Regulatory Affairs 3
- Centre for Wind Power 5
- Centre for Human Resource Development 8
- Centre for Communications 9
- WISE Press 13

Reflections...

by the Director General

WISE has completed two years of its existence…two glorious years of new endeavours, tremendous hard work and perseverance. We have grown in strength – in terms of the numbers of our faculty and staff – our expertise, our research, and other activities. This would be evident from the write-ups of the various centres of WISE presented in this report. Two years is a very short period in the history of an institution for initiating so many new ideas and converting them into positive action. But the realisation of the value of time and the urgency of issues we are expected to address carved the way for us.

A very important and critical research project on the real 'public cost of conventional electricity generation' was initiated by the 'Centre for Policy and Sustainability Research' in August 2005. The results of this project, expected to be published by April 2007, will go a long way in creating a level-playing field for renewables, in terms of fiscal and financial support mechanisms from the government. The 'Centre for Policy and Sustainability Research' was also responsible for making several key policy interventions concerning sustainability issues. By extending consultancy support to the Maharashtra Electricity Regulatory Commission, WISE has become a partner to this pioneering institution for addressing regulatory issues related to renewables and its development. With this, we have also created our new 'Centre for Regulatory Affairs'. A most notable and path-breaking initiative by WISE during the year was the drafting of a model Renewable Energy Law for India and its presentation to the nation through a one-day seminar held in New Delhi. This initiative attracted wide national and international attention and is being currently debated in various fora across the country. There is an emerging consensus for the need for such a law in India, on the lines of most developed countries and China.

Our 'Centre for Wind Power' completed another pioneering study – the first-ever survey on assessing the human resource (HR) needs of the renewable energy sector in India. The findings would help in shaping HR development for the sector in future. WISE has already entered this area through its 'Centre for Human Resource Development' by holding various seminars and short-term training programmes on cutting-edge issues. The long-term training contract with NEG Micon (I) Pvt Ltd, Chennai, is again the first-of-its-kind in the country. We are also seriously considering the commencement of long-term academic programmes to train and develop first-rate professionals for the renewable energy sector. WISE continued with its training programme on 'renewable energy for media persons' across the country with extended support from the Ministry of Non-Conventional Energy Sources, Govt. of India. This training programme will go a long way in shaping public opinion in favour of a transition to sustainability, and renewables in particular.

The increasing popularity of our bimonthly publication 'Green Energy' all over the country is a great source of joy for us at WISE. In fact, 'Green Energy' has become our flagship in our onward journey and fills a critical gap in providing holistic information on sustainable energy. Our outreach efforts are strengthened by our physical presence in various energy exhibitions held across the country. The WISE library continues to be developed with great care, attention, and diligence. WISE Press is also in the process of shaping its unique identity as a publisher with a 'difference'. As we move into the third year of our functioning, we are filled with much more enthusiasm and determination to achieve the objectives set by the founders for the institution. Our gratitude to all members of our Governing Council and our well-wishers for their continued support during these two years.

G M Pillai
Director General

Genesis...

The World Institute of Sustainable Energy is a not-for-profit Society and Trust registered under the Societies Registration Act, 1860, and the Bombay Public Trusts Act, 1950, located in Pune. It is a financially autonomous institution and comprises some major stakeholders from the renewable energy industry as its founder members.

Development of renewable and sustainable energy is critical for ensuring sustainability of development. But efforts in India towards developing the renewable energy sector are inadequate. Some of the major problems faced by the sector are lack of policy support and incentives, lack of legislative and research support, lack of qualified manpower, and lack of critical awareness to address the necessity of a rapid transition to a sustainable energy-based economy. To overcome these vital shortcomings in the sector, there was an urgent need to create an institution that would play a critical role in shaping an energy secure future. This resulted in the genesis of the World Institute of Sustainable Energy (WISE) in June 2004.The activities of WISE will thus provide a major impetus to the development of the renewable energy sector in all Indian states.

OBJECTIVES OF WISE

- To be a premier outreach centre for communications, information and knowledge transfer in the fields of sustainable energy, energy conservation, and sustainable development.
- To function as an apex policy think-tank, policy advocacy centre, and consultancy provider in the field of sustainable development, especially in relation to sustainable energy and energy conservation.
- To conduct short-term and long-term academic and other training programmes in furtherance of the futuristic human resource needs of the emerging sustainable energy, energy conservation, and sustainable development sectors.
- To take up technical and other research in selected and specialised areas of vital importance for augmenting and accelerating sustainable development in a holistic manner, for a transition to a cleaner and greener world.
- To establish, maintain, and operate libraries, laboratories, and prototype training centres, and hold seminars and training programmes in concordance and furtherance to these objectives.

WISE is organised into different centres and units that cohabit independently, yet work cohesively, in the true tradition of inter-disciplinary learning, team spirit, and knowledge sharing. These are:

1. Centre for Policy and Sustainability Research
2. Centre for Regulatory Affairs
3. Centre for Wind Power
4. Centre for Communications
5. WISE Press
6. Centre for Human Resource Development

WISE is the only institution in India with such inter-disciplinary expertise, most essential for leading our country towards sustainability in the 21st century.

CORE COMPETENCIES

WISE has some of the most talented, highly qualified, and technically proficient people as part of its workforce, each an expert in his/her respective field of specialisation. Together, they strive towards fulfilling one goal… developing WISE into a premier and apex world class institution of sustainable energy.

Centre for Policy & Sustainability Research

Sustainable Development

The Centre for Policy and Sustainability Research is responsible for initiating a series of studies and cutting edge analyses, to bring out truths about resource availability and use, its economics from an environmental perspective, propose timely and right policy perspectives, and introduce international best practices in India.

WISE's Centre for Policy and Sustainability Research (CPSR) was established on 1 August 2005. It is the only multidisciplinary centre in India with an integrated perspective and expertise in energy engineering, environmental economics, ecology and development.

After its establishment, the first priority of the Centre was to constitute a research team to undertake policy research on issues of sustainability within WISE. Underlying this priority was a vision and an agenda for long-term inter-disciplinary research related to both sustainable energy and sustainable development. The Centre now has in place a team of four research scholars with capabilities in energy and environmental studies, and disciplinary strengths in small hydro, wind, and economics.

The first research project undertaken by the Centre, titled 'Public Cost of Conventional Electricity Generation in India' was initiated in August 2005. The project is funded by the Indian Wind Turbine Manufacturers' Association (IWTMA). This project involves the study of 20 electricity generation projects based on coal, gas, and hydro, and has developed three computational methodologies, identified data sources, and compiled data on these projects. Through literature survey, it has also identified various categories of costs in the public domain. The research study is ongoing.

Future Directions

- The Centre aims to be a strategic think-tank in the core areas of renewable energy and sustainable development.
- It aims to generate policy alternatives and scenarios that will integrate renewable energy and sustainable development into a broader societal policy.
- It also aims to create training inputs and personnel in the emergent areas of renewable energy and development.

During the current period, the Centre also prepared a portfolio of research proposals in the areas of externalities, coal sector study, and study of energy scenarios for the future. These have been proposed for financial sponsorship.

The Centre also initiated internal reviews of two key draft policies in the energy sector: the Draft Policy on Renewable Energy, prepared by the Ministry of Non-Conventional Energy Sources (MNES), Govt. of India, and the Draft Policy on Integrated Energy, prepared by the Planning Commission, Govt of India. Both drafts were published in late 2005 and the CPSR reviews/comments were circulated internally.

PARTICIPATION IN CONFERENCES AND SEMINARS

Scholars from the Centre participated at a seminar on Clean Development Mechanism, hosted by the Institution of Engineers (India), Pune, and attended by major CDM certification agencies based in various parts of the country. The scholars also participated in a programme on 'Business Excellence through Consultancy' as well as in the International Congress on Renewable Energy (ICORE) held in Hyderabad. In addition, there was participation in WISE's 4th 'National Level Training Programme on Renewable Energy for Media Persons', held in Kolkata in December 2005.

Centre for Regulatory Affairs

The Centre for Regulatory Affairs will research into innovative instruments arising from an environmental economic framework and green theory for developing new policy initiatives for sustainable development. Besides, it will develop legislative, regulatory, and legal models for the transition to clean, green, and sustainable energy.

Policy research and consultancy is one of the core areas of WISE and the institute is committed towards developing policy initiatives aimed at promoting sustainable economic and fiscal measures, for ensuring an energy secure future. Current reforms in the power sector – especially after the enactment of the Electricity Act (EA), 2003, and subsequent National Tariff Policy – have laid several enabling legal and regulatory provisions for the renewable energy sector. The EA, 2003, for example, provides for policy formulation and mandates state electricity regulatory commissions to take necessary steps to promote renewable and non-conventional sources of energy within their area of jurisdiction.

Timely recognition of the importance of regulatory issues in the development of renewable and sustainable energy led WISE to establish its Centre for Regulatory Affairs. WISE intends to approach all electricity regulatory commissions (ERCs) in India for providing institutional support to them in a holistic and systematic manner, and facilitating the transition to a sustainable energy-based economy.

CURRENT ACTIVITIES

Consultancy support to Maharashtra Electricity Regulatory Commission (MERC)

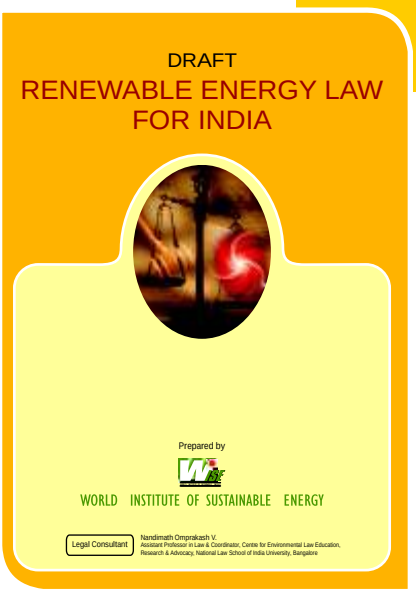
WISE is presently providing consultancy support on retainership basis to the Maharashtra Electricity Regulatory Commission (MERC). An agreement in this regard was signed on 1 March 2006 between WISE and MERC. WISE has posted 4 consultants on a full-time basis in MERC for a period of 3 years. WISE is assisting MERC in performing specific functions related to utility operation areas such as, monitoring compliance of directives related to operational technical areas by the licensees, standards of performance, consumer grievances, energy accounting, energy auditing, load management, and DSM, etc.

Developing, advocating, and facilitating adoption of a 'Renewable Energy Law' for India

The most important activity of 2005 was related to drafting a 'Model Renewable Energy (RE) Law' for India. WISE, in collaboration with its legal consultant, the National Law School of India University, Bangalore, developed the renewable energy law as a long-term policy instrument to promote renewables. The draft RE law was presented and opened for discussion at a one-day seminar held in collaboration with the CII-Sohrabji Godrej Green Business Centre and inaugurated by Vilas Muttemwar, Hon. Minister of State (Independent Charge) for Non-Conventional Energy Sources, Govt. of India, on 25 August 2005 in New Delhi. The seminar resulted in the constitution of a Working Group comprising eminent experts, under the able chairmanship of Dr Pramod Deo, Chairman, MERC, to pursue advocacy of the law for adoption by Parliament. The first meeting of the Working Group was held on 14 December 2005 at MERC, wherein an action plan for advocacy of the RE law for the period May 2006 to April 2007 was chalked out. WISE has appointed a part-time consultant till June 2006 for implementation of the action plan.

After a lot of research and consultation with experts in the field, the RE law has undergone a series of refinements. The final RE law will be submitted to the Ministry of Non-Conventional Energy Sources (MNES), Govt. of India, in April 2007.

Barriers to the development of renewable energy run across a wide spectrum of society. A comprehensive legislation aimed at removing these barriers and accelerating the development of renewable energy technologies is thus necessary. Although the government is committed to promoting the use of renewable energy sources, the commitment is not backed by legislation; it has remained confined to articulation of policy. This spurred WISE to draft a model RE Law for India and pursue it to its logical conclusion...adoption by Parliament.



FUTURE ACTIVITIES

Conducting short-term training programmes / seminars

Some of the state electricity regulatory commissions have requested WISE to conduct short-term training programmes / seminars for addressing certain critical issues in the field of regulation. WISE will be conducting such training programmes aimed at providing specific knowledge in the areas of Renewable Purchase Obligation, matters related to utility operations, and tariff fixation for RE projects.

Providing consultancy support to state electricity regulatory commissions

In the next financial year, WISE is planning to provide consultancy support to state electricity regulatory commissions on the lines of the MERC project.

Highlights of the draft Renewable Energy Law

- Increasing the target for electricity generation from renewables to 10% by 2010 (as against 2012 currently), 20% by 2020, and 25 % by 2030, of the total electricity generated in the country (and not as a percentage of installed capacity).
- Making solar water heating mandatory throughout the urban areas of the country by 2012 in a phased manner.
- Demonstration of solar rooftop lighting systems in 10,000 government buildings by 2010 in a time-bound manner, also incorporating building integrated photovoltaics.
- Conversion of fossil fuel-based industrial heating to solar thermal heating, using new solar concentrator technology or its hybrids.
- India has at present about 30,000 MW captive generating units (industrial units) of which about 18,000 MW are diesel-based. The draft law proposes time-bound conversion to biofuel-based generating units, saving large amounts of diesel.
- Accelerating biofuel development and transportation energy to displace fossil fuels. A time-bound renewable fuel programme covering ethanol and biodiesel has been proposed.
- Charting a definite roadmap for developing a hydrogen and fuel cell economy.
- Establishing renewable energy development funds in all states (according to the pattern adopted in Maharashtra).

Centre for Wind Power

WISE's Centre for Wind Power is the only holistic Centre in India having all-round expertise in wind power development. In order to cater to the demands of this fast growing sector, the Centre aims to develop skilled manpower and create a knowledge-based environment in power generation from wind resources.

The core activities of the Centre are:

- Designing, developing, and conducting short-term and long-term training programmes on wind power for wind energy professionals, academics, students, and policy makers.
- Carrying out research studies, surveys, and analytical projects for the wind power sector.
- Offering exclusive consultancy services to project developers, industries, research institutes, investors, state nodal agencies, power utilities, etc., for fiscal, administrative, technical, and management issues of wind power development.
- Offering policy support to state electricity regulatory commissions (SERCs) for promotion of wind power technology.

In line with WISE's objectives, the following activities were carried out during 2005–06.

HUMAN RESOURCE SURVEY

During 2004–05, WISE launched a national survey to assess the human resource (HR) needs of the wind energy sector in the country. This national level survey was carried out by Hyderabad-based consultancy firm 'Zenith Energy', a division of Zenith Corporate Services Pvt. Ltd. The final report was submitted by the consultant in the month of December 2005. Simultaneously, the scope of the HR survey was extended for assessing the manpower requirement for grid connected renewables and power distribution systems. The final report on the extended scope of survey titled, 'Studies on emerging human resource requirements in the areas of grid connected Renewable Energy Technologies energy efficiency, and power distribution management in India' has been submitted. It was found that the sector could provide jobs to nearly 30 people (both directly and indirectly) per MW of installed wind turbine capacity. The study also showed the urgent need for trained personnel in the wind power sector at various levels, to ensure that more skilled manpower is made available for overall development of the sector.

Major findings of the HR survey for the wind energy sector

- There is a clear demand for increasing and upgrading the skills of the existing workforce.
- Engineers and artisans are in major demand.
- Development of the training system should focus on information, dialogue, planning, and pricing mechanisms.
- In terms of volume, the wind turbine manufacturing industry continues to demand the maximum share of human resources as compared to other renewable energy industries.
- Due to increasing competition, enhanced regulation, restructuring and indigenisation, there will be substantial demand for better recruitment, and multi-skilled personnel.
- Capacity building exercises at individual, institutional, and societal levels are a must in the near future.

Major findings of the HR survey for grid connected renewable energy technologies

- Employment in the renewable energy sectors such as biomass, waste-to-energy, and small hydro will reach

Participants of the 'First Induction Training Programme for Wind Power Professionals...'

...posing for a group photograph ▶

◀ ...along with the WISE staff on a site visit to the wind farm at Vankusawade near Satara.

peak level. However, scarcity of required skills and expertise will be a constraint due to lack of interface between the industry and academic institutions.

- Organisations like WISE could develop short-term modular courses that impart practical knowledge to fresh graduates and offer on-the-job training in power plants through tie-ups with them.
- The Indian renewable energy sector is growing by leaps and bounds in terms of capacity addition. Besides, changes in policies now encourage private participation. This will lead to increase in employment in the areas of manufacturing, design, construction, operation, and maintenance, in future.

TRAINING AGREEMENT WITH NEG MICON (INDIA) PVT LTD, CHENNAI

WISE signed a Memorandum of Understanding with NEG Micon (India) Pvt. Ltd., Chennai, for a period of three years (2005–08), wherein WISE will be responsible for developing course modules and providing training on wind power technology and its management to NEG Micon's employees. WISE has analysed the training needs of the company and is offering tailor-made training packages to improve the understanding of the wind sector and develop different skill sets required by the company's personnel. WISE offers two-week long induction training programmes, along with other short duration (2–3 days) programmes devoted to specialised areas, like wind power project management, O&M, etc.

FACULTY TRAINING

In furtherance of WISE's objective of conducting short-term training courses, P. Jayakumar, the faculty consultant for short-term training programmes was sent for a field visit to the NEG Micon manufacturing unit at Chennai, on 18–19 October 2005. This was to gain first-hand information and exposure to wind industry operations. The exposure received is useful for planning and conducting the proposed training programmes for wind power professionals. He has submitted his visit report to WISE and held detailed discussions with G. M. Pillai, DG, WISE, and Rajendra Kharul, Fellow, WISE.

RESEARCH PROPOSAL

'Integration of Wind Power with the Grid in India'

The research proposal was developed in view of the rapid growth of the wind power sector in the near future in India. This study aims to understand and discuss the impact of wind power on the grid in existing large wind farms, and compare the Indian experience with the international experience. The documentation and reference work for the research work has already begun. WISE is exploring funding possibilities for the project.

OTHER ACTIVITIES

1. Curriculum Development Committee: Based on the inputs drawn from the national HR survey, WISE plans to launch few short-term and long-term academic programmes in the near future. To design and develop the course curriculum on wind power management, the Curriculum Development Committee of experienced professionals was formed, comprising experts from the wind power industry, power sector consultants, and academics from IIT Powai, Mumbai. The committee held three meetings during the year and deliberated on various issues. The draft report of the committee meetings was prepared for review by WISE.

The dedicated and trained faculty of the Centre for Wind Power endeavours that the Centre be recognised as the 'Knowledge Management Hub' and think-tank for the wind power sector in the coming years. The Centre seeks to act as a nodal centre for developing industry–institution linkages, and a network for disseminating information and other knowledge-based resources to the wind power sector.

2. RETScreen International Software Study: As part of its capacity building exercise, the Centre for Wind Power undertook a study to understand the RETScreen software useful for techno-commercial analysis of wind power projects. Wind Energy Project Model, Version 3.2, which is a part of the software was studied along with case studies in detail. All the literature on this software is available with the Centre.

3. Training programmes / conferences / workshops attended:

The faculty and officers of the Centre attended various seminars, training programmes, and conferences, as follows:

- Workshop on 'Integration Issues of Wind Farm with the Grid', organised by the Central Power Research Institute in Bangalore.
- Seminar on 'Clean Development Mechanism Benefits for Renewable Energy and Energy Conservation Projects' by Institution of Engineers (India) in Pune.
- 'International Congress on Renewable Energy (ICORE) 2006' for sustainable development in Hyderabad.

4. Case Studies: The Centre has initiated studies on various aspects of wind technology including HR and socio-economic impacts, performance monitoring of wind farms, interaction of wind turbines with the grid, and most importantly, wind resource assessment.

Some of the future activities planned by the Centre are:

Internal Activities

1. Sending officers for training to various national and international training programmes, seminars, conferences, and workshops, related to wind power.
2. Generating extensive documentation on wind energy technology and related developments in India and abroad, through the creation of digital, statistical, and technical databases.
3. Developing technical expertise by carrying out specialised studies / research work.
4. Designing and developing literature and other presentation material for enhancing the contents of the training programmes on wind power.
5. Procuring as well as creating audio-visual presentations on wind energy, wind power systems, etc.

External Activities

1. Organising a national level conference cum exhibition on wind power.
2. Providing short-term and long-term training programmes for wind industry professionals.
3. Conceptualising, conceiving, and initiating new research proposals on:
   - Performance monitoring of wind farms
   - Wind resource assessment techniques, methods for practical use.
   - Wind turbine component failure analysis techniques
   - Wind power policy, regulation, RPS, etc.
4. Survey may be undertaken for academic sector to identify training needs on renewables.
5. Identifying investors and providing consultancy to them for setting up renewable and wind energy projects.

Centre for Human Resource Development

The Centre for Human Resource Development is responsible for conducting short-term and long-term training programmes to meet the future human resource needs of the emerging sustainable energy, energy conservation, and sustainable development sectors.

The Centre for Human Resource Development helped in organising five programmes in 2005–06, namely three in the continuing Ministry of Non-Conventional Energy Sources (MNES)-sponsored series to introduce renewable energy to the media, one seminar to launch the draft renewable energy law for India, and a 2-week intensive induction training in wind power.

THE MEDIA SERIES: BANGALORE, JAIPUR, KOLKATA

Encouraged by the response to the first programme on renewable energy for media professionals conducted in March 2005 in Pune, the MNES accepted the proposal from WISE to conduct nine more programmes and suggested that each be held in a different city so as to cover the entire country. Accordingly, the second programme in the series was held in Bangalore in October, the third in Jaipur in November, and the fourth in Kolkata in December.

As part of the institute's ongoing efforts to promote better-informed reporting of stories related to renewable energy sources and devices, each programme consists of brief and accessible introductions by experts, discussions with practitioners, interaction with CEOs and senior journalists, and a field visit. The series has been eminently successful in that not only the programmes, but also success stories of renewable energy won wide press coverage (more than 30 reports in 25 newspapers in 7 languages). As many as 148 journalists participated in these programmes, representing more than 100 media agencies (print and electronic). The series enables WISE not only to put together a widespread network of select faculty on every aspect of renewable energy but also to gain first-hand experience of conducting programmes all over the country. More than 60 experts spoke during the first four programmes from nearly 40 organisations representing the research community, academia, agencies of the central and state government, the industry, consultants, and the media. Each participant in the programme automatically becomes a member of the 'WISE Alumni Association' and is added to the distribution list of *Green Energy*, the institute's bimonthly publication, thereby extending its reach. This network of journalists is also useful in spreading the word about the institute's future activities.

A RENEWABLE ENERGY LAW FOR INDIA (25 AUGUST 2005, NEW DELHI)

The Centre for Human Resource Development provided logistical support to the one-day event organised in New Delhi to launch the draft renewable energy law for India (for more details, refer Pg.No.3).

FIRST INDUCTION TRAINING PROGRAMME FOR WIND POWER PROFESSIONALS (17–26 NOVEMBER 2005)

The first of a series of programmes to be conducted as part of the Memorandum of Understanding between NEG Micon (I) Pvt. Ltd., Chennai, and WISE was held in November 2005. Of the 25 who participated, all but one – from Uttaranchal Renewable Energy Development Agency, Dehra Dun – were from NEG Micon. The contents were customised for NEG Micon in consultation with the company and broadly consisted of technical sessions (50%), sessions on techno-management topics (25%), and sessions on soft skills such as team building and effective decision-making (25%). The faculty was drawn from in-house staff as well as from the industry, academic institutions like the Indian Institute of Technology in Mumbai, consulting firms, and so on. In addition to sessions at WISE, the programme also included a visit to the wind farm at Vankusavade near Satara. Comprehensive course material, in two volumes, was compiled and handed over to the participants.

Centre for Communications

The Centre for Communications aims to enrich the process of information and knowledge transfer through the latest modes of communication, moving in synchronisation with the advancements made in sustainable energy, energy conservation, and sustainable development.

The Centre for communication's three vital resources viz. publications, information technology, and the library and documentation centre, play an important role in disseminating information and propagating the significance of renewable energy for attaining an energy secure future.

PUBLICATIONS

Green Energy

WISE's flagship publication, Green Energy (GE), which is the only holistic publication on sustainable energy in the country, continued to draw appreciation from various quarters. *Green Energy* caters to more than 30,000 readers from the government sector; the renewable energy sector which includes developers, manufacturers, investors, etc; the academic community which include researchers and students; and policy makers, and has been recording a steep increase in readership. Together with a change of name from Green Energy World to Green Energy – done as per RNI requirements – the cover of the publication was also revamped and redesigned in keeping with the changing times. The number of pages was gradually increased in an effort to give in-depth coverage to issues relating to sustainable energy, energy conservation, and sustainable development.

Each issue of *Green Energy* is unique, carrying news and views under various categories such as Planet News, India News, Industry Watch, Policy & Regulation, and so on, thus providing a holistic view of the renewable industry, both in India and across the globe. *Green Energy* also delves into issues regarding power generation from the fast-depleting conventional energy sources and presents expert opinions debating its feasibility. The various policies and regulations being implemented in order to provide the necessary impetus to the growth of the RE sector are also discussed in detail.

Six issues of *Green Energy* were brought out in the current financial year, namely May-June 2005, July-August 2005, September-October 2005, November-December 2005, January-February 2006, and March-April 2006. The electronic version of the publication was launched early in 2006 and this has helped in further reaching out to a larger audience.

Annual Report

WISE's first Annual Report for the financial year 2004–05 was published during the current period. The report which detailed the various activities undertaken by WISE in its first year of inception was appreciated for its crisp style of presentation and the pleasing design adopted.

PUBLICITY

Networking with the Media

WISE has been conducting two-day training programmes on renewable energy for media persons (both print and electronic) in various parts of the country, to provide precise information regarding this sector to them. The Centre for Communications has been working in close association with the Centre for Human Resource Development in providing publicity to the programmes through regular interaction with the media. The efforts have resulted in increased media coverage for the events and also helped enhance awareness regarding renewable energy in the country.

WISE stalls at the...

'Made in India' Trade Show in Shanghai, China

'Green Power 2005' in Chennai

'ICORE 2006' in Hyderabad

Participation in Exhibitions and Conferences

A crucial aspect of outreach and communications involves generating publicity and awareness regarding the institute's activities. WISE has been participating in many national and international seminars and exhibitions to achieve this objective.

WISE participated in the 'Green Power 2005' national conference cum exposition on renewable energy organised by CII-Sohrabji Godrej Green Business Centre, held in Chennai on 23–24 June, 2005. WISE was an active participant at the conference. Its stall displaying various information material and publications of the institute received an enthusiastic response from the audience who evinced a keen interest in the activities of the institute.

WISE's entry into the international arena was marked by its participation in the third 'Made in India' show organised by the Confederation of Indian Industry (CII) in Shanghai, China. The show held from 17–20 October, 2005, showcased the activities of 50 participating companies from varied sectors such as agro, cement, textile, banking, hydrocarbon and the renewable energy industry. Besides WISE, the other participants from the renewable energy sector were Suzlon Energy, NEPC India, and Malavalli power plant. The WISE stall received a good response and visitors including representatives from the Chinese power ministry, trade consultants, environmentalists, and others appreciated the work done by WISE in this upcoming sector. The WISE publications were also well received.

WISE was also an active participant in the International Congress on Renewable Energy (ICORE) 2006 held in Hyderabad from 8–11 February 2006 under the aegis of the Solar Energy Society of India (SESI). The WISE stall set up as part of the 'Renewable Energy Trade Show' held in connection with the event, was visited by a diverse audience comprising students, academics, renewable energy agencies and NGOs.

Preparation of Publicity Material

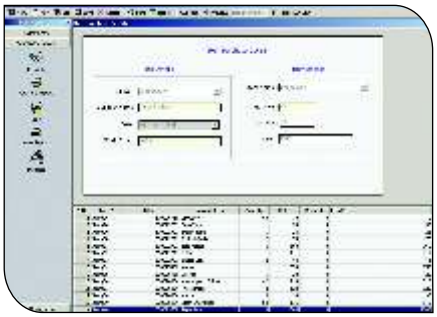
WISE's participation in the various seminars and events necessitated the preparation of publicity materials such as banners and panels to be displayed at such events. The Centre for Communications first designed two spring banners giving broad details of the activities of WISE. As the organisation grew, the need to have specialised publicity material for the different departments arose. This led to the development of state-of-the-art, high quality, and light weight wall panels giving information about the core centres of the institute.

INFORMATION TECHNOLOGY

The scope of information technology (IT) in disseminating information widened during the current year, with the following projects accomplished:

- Upgradation of the WISE Website with following major features incorporated:
  - Dynamic admin control panel
  - *Green Energy* archives (along with free online registration)
  - Order forms for WISE's books
  - Forthcoming events bar
  - List of latest arrivals in the library
- Development of E-copy of *Green Energy* and dispatch to online subscribers
- Development of inventory management software and mailing list software.

Home page of WISE's website



A view of the Inventory Management Software page

Library and Documentation Centre

LIBRARY AND DOCUMENTATION CENTRE

The WISE Library and Documentation Centre has emerged as a one-of-its-kind specialised information centre on energy, environment, and sustainable development. The library houses a comprehensive collection of books, journals, audio-visual resources and news clippings. Besides meeting the information needs of in-house researchers and scholars, the library and documentation centre is also used by external research scholars, NGOs, educational institutions, media, and consultants.

The library has around 900 titles of books, 52 current periodicals, 27 titles of audio-visuals, and many miscellaneous items including annual reports of ministries, companies, research organisations, and voluntary agencies.

Details of the books available in the core subject areas and its sub-categories are as follows:

Renewable Energy / Non-Conventional Energy
- Biomass Power
- Co-generation
- Energy Efficiency / Conservation
- New Energy Technologies
- Renewable Energy (General)
- Solar Power
- Waste-to-Energy
- Wind Power

Conventional Power
- Electrical Engineering (General)
- Energy Financing
- Energy Policy and Power Sector Reforms
- Hydro Power
- Nuclear Power
- Power Regulation
- Thermal Power
- Transportation Energy

Rural Energy
- Biogas
- Fuel Wood
- Integrated Rural Energy Planning
- Rural Biomass Application
- Water and Rural Energy
- Women and Environment

Environment
- Climate Change
- Environmental Economics
- Environmental Education/Training
- Environmental Engineering
- Environmental History
- Environmental Law/Legislation
- Environmental Philosophy

Sustainable Development
- Agriculture and Organic Farming
- Animal Ecology
- Biodiversity
- Futurology
- Green Building/Green Architecture
- Mining and Ecological Destruction
- Restoration Ecology
- Sustainable Development (General)
- Watershed Development
- Wild Life

Communications
General
General Biography
Globalisation
Information Technology
Library and Information Science
Management

The WISE Library subscribes to the following leading national and international periodicals:

1. Akshay Urja
2. Biodiesel
3. Bioenergy News
4. Biofuels India
5. The Bulletin on Energy Efficiency
6. Business India
7. Cogeneration & On-Site Power Production
8. Current Science
9. Dams, Rivers & People
10. Digit
11. Down to Earth
12. Ecologist
13. The Ecologist Asia
14. Electrical India
15. EWEA Wind Directions
16. Human Capital
17. India Business Journal
18. India Green File
19. InWEA Newsletter
20. InWind Chronicle
21. LEISA India
22. Naturopathy
23. New Energy
24. North American Wind Power
25. NPTI Vision
26. Nuclear India
27. Outlook
28. Paryay
29. Pavan
30. PC Quest
31. Power Line
32. Project Monitor
33. Refocus
34. Regen
35. Regulateri
36. Renewable Energy India
37. Renewable Energy World
38. Repsovision
39. Resource
40. Resource, Energy and Development
41. Resurgence
42. Scientific American India
43. SESI Journal
44. Sun & Wind Energy
45. TERI Newswire
46. Teriscope
47. Terra Green
48. TIDEE (Teri Information Digest on Energy and Environment)
49. Wind Blatt
50. Wind Power Monthly
51. Windpro
52. World Watch

- Total number of books purchased in 2005–06 : 267
- Total number of books available : 896
- Total number of periodicals available : 52
  (26 subscribed and 26 complimentary)
- Total number of CDs available : 27

WISE PRESS

WISE Press is responsible for conceptualising and generating essays on various unexplored subjects pertaining to sustainable energy and development. It also publishes cutting-edge books, reports, and monographs, on current and existing issues of sustainable energy and development.

In keeping with the institute's objective of being a 'premier outreach centre for communications, information and knowledge transfer', WISE Press sought to extend the institute's outreach during the year through more focused marketing of the books already published and exploring the potential for conducting training programmes related to technical communication.

MARKETING

Whereas the first orders for *The New Energy Economy* were for bulk purchase, a number of engineering colleges and other academic institutions were systematically approached to aim at wider distribution of the book. A total of 103 copies of the book were sold during the year. The book was reviewed in *Current Science* and *Resources, Environment and Development*. A larger database is also now available for marketing the books to be published in future. *Electricity Reforms and Green Power Development* was systematically promoted among state electricity regulatory commissions, renewable energy agencies, and utilities.

TRAINING PROGRAMMES IN COMMUNICATION SKILLS

A few research and academic institutions were approached on an experimental basis to explore the possibilities of conducting training programmes in communication skills for researchers focusing on writing and presentation of technical information. The response was encouraging, and WISE was commissioned to conduct a regular one-semester course on communication skills for doctoral students at the National Chemical Laboratory, Pune. A one-day programme on preparing research papers for international peer-reviewed journals was also planned (and conducted in April 2006). Going by the feedback, it is now planned to make this a regular programme, to be conducted at least four times a year.

RELATED MISCELLANEOUS ACTIVITIES

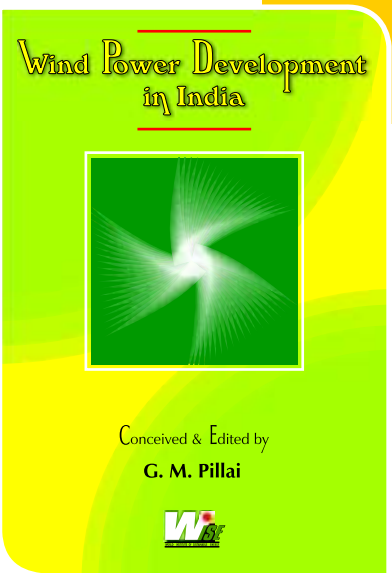
A publisher's prefix was obtained for WISE, which makes it possible to allot a unique International Standard Book Number to every future book or a revised edition of an already published title to be published by WISE. To develop a unique identity or a brand image, a special typeface was bought, namely Mercury, which is particularly suited to extensive text composition. Possibilities to impart training in print production to a few WISE staff were explored with the Maharashtra Institute of Printing Technology, Pune.

ABOUT WISE BOOKS

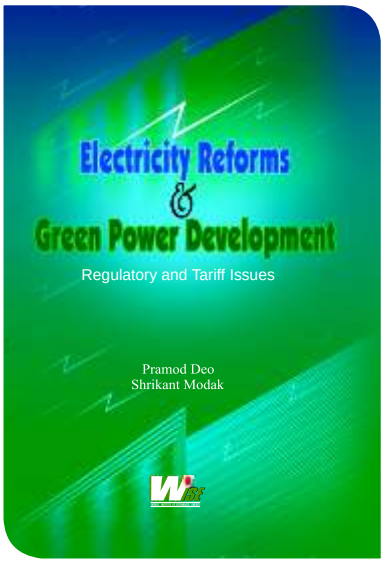
Electricity Reforms and Green Power Development: *Regulatory and Tariff Issues*

This was the first book released by WISE Press. The book focuses on the need for an appropriate tariff regime and policy framework for encouraging renewable energy development in India.

In 2003, the Parliament passed the new Electricity Act, 2003, aimed at drastically reforming the power sector in India. By this time, some of the renewables had achieved economic viability. Even so, a suitable tariff regime and policy framework was required to overcome barriers to their commercialisation. Encouraged by the new scenario, two state electricity regulatory commissions, Maharashtra and Andhra Pradesh, set out to formulate an approach to address the issues relating to grid interconnection and tariff.



WISE's forthcoming book, *Wind Power Development in India* is the first-ever comprehensive attempt to place wind power in the Indian context and to deliberate on issues and actions needed to sustain its growth in the future. With contributions from leading experts, *Wind Power Development in India* would be useful for investors, policy-makers, administrators, wind sector professionals, and postgraduate students. There may be other Indian books on wind power *technology*, but this is the only one on wind power *development.* The book is conceived and edited by G M Pillai, DG, WISE.



Much of this book is devoted to critically analysing the larger issues arising from the pioneering orders of these regulatory commissions.

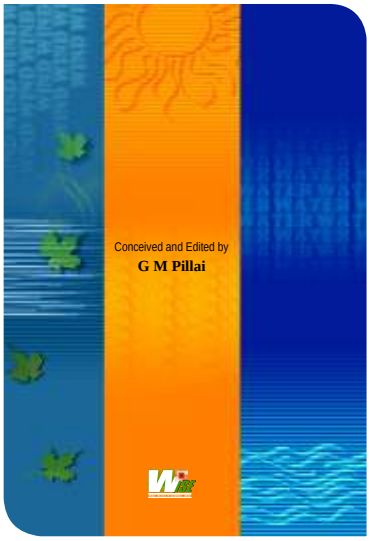
The book also elaborates on the technological and regulatory issues in India and abroad, with a focus on the structural reforms underway in the electricity sector. The book is a must-read for policy-makers, stakeholders from the energy sector, academicians, researchers, consultants, and all those interested in renewable energy development in India and elsewhere. The authors of the book are Pramod Deo, Chairman, Maharashtra Electricity Regulatory Commission (MERC) and Shrikant Modak, Deputy Editor, Business India.

The New Energy Economy

This was the second book to be published by WISE Press. The book is a trendsetter and a pointer to the future of the energy sector in the next few decades. Scientific estimates predict that by 2050, about 40% to 50% of grid power used by humans would come from renewable sources. The book surveys this epochal transformation globally, with a special focus on India.

Holistic and comprehensive, the book surveys the diverse facets of the emerging new energy economy. It looks at major trends underway, like in wind power generation, small hydro power, and biomass-based energy. There are many emerging new energy technologies such as hydrogen based fuel cells, solar concentrating technology, decentralised stand alone off-grid systems, etc., about which very little information is available in the country. The book focuses on these state-of-the-art technologies and their futuristic potential. Other vital issues covered include, energy conscious and green architecture, energy conservation in the context of the Energy Conservation Act, 2001, transportation energy, regulatory and policy issues resulting from the Electricity Act, 2003, problems of financing the sector, and human resource development. International policy instruments like the clean development mechanism and carbon trading are critically examined, as they promise to boost development of these new technologies in developing countries.

The participant authors who have contributed essays are well known experts in their own fields, drawn from senior-most levels of the academia, industry, non-governmental organisations, and the government. G M Pillai, Director General, WISE, is the editor of *The New Energy Economy*.



(From L to R): Rajendra Kharul, Fellow, WISE; G M Pillai, DG, WISE; A M Gokhale, former Secretary, MNES, Govt. of India; K P Pande, Chairman, KERC, and D S Malik, the then Director, I&PA, MNES, Govt. of India, at the inauguration of the 2nd 'National Level Training Programme on Renewable Energy for Media Persons', held from 7–8 October 2005 in Bangalore.

(Standing in front from L to R): Sunil Mitra, Principal Secretary, Dept of Power and Non-Conventional Energy Sources, Govt. of West Bengal, lighting the ceremonial lamp, along with S P Gon Chaudhuri, Director, WBREDA, Kolkata, and Rajendra Kharul, Fellow, WISE, at the inauguration of the 4th 'National Level Training Programme on Renewable Energy for Media Persons', held from 23–24 December 2005 in Kolkata. (Standing behind from L to R): A K Singhal, Director, MNES, Govt. of India, and D Majumdar, MD, IREDA.

World Institute of Sustainable Energy
'Surya-Suman', 49 Hindustan Estates,
Road No. 2, Kalyani Nagar,
Pune 411 006 (Maharashtra, India)
Tel No : +91-20-26613832, 26613855
Fax : +91-20-26611438
E-mail : wiseinfo@wisein.org
Website : www.wisein.org

www.shaileshartprint.com