



2016 ProSPER.Net

Young Researchers' School

1 to 12 February, 2016

TERI University, New Delhi, India



Sustainable Energy for Transforming Lives

Availability, Accessibility, Affordability



2016 ProSPER.Net Young Researchers' School

Sustainable Energy for Transforming Lives Availability, Accessibility, Affordability

**TERI University
New Delhi, India**

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1. Introduction

Dear Participants of the 2016 ProSPER.Net Young Researchers' School (YRS),
Welcome to India!

In the coming two weeks our ProSPER.Net (Promotion of Sustainability in Postgraduate Education and Research Network) will bring us together to share our knowledge and experiences in sustainability research. Many activities have been done under the aegis of ProSPER.Net, one of them is the Young Researchers' School, where doctoral students enrich their research skills and contents with sustainability issues, which hopefully will encourage you to work together in sustainability research after completing the programme.

This year, TERI University, with UNU-IAS support, will host the ProSPER.Net Young Researchers' School, the sixth regional workshop on sustainable development for PhD students in the Asia-Pacific region. The theme of the 2016 school will be 'Sustainable Energy for Transforming Lives: Availability, Accessibility, and Affordability'. The aim of the researchers' school is to offer an opportunity for students to be exposed to sustainability issues, while developing research skills, and to further encourage a network of students/future professionals and academics working on sustainable development.

We hope that you will enjoy your stay in India, and especially our exhilarating moments of getting together. We are whole-heartedly thankful to the sponsorship of university partners in the network, and UNU-IAS ESD programme for their support to this programme and for bringing us together to reflect on how we can all contribute to a more sustainable society in Asia and the world.

TERI University

2. List of Resource Persons and Participants

Name	Affiliation	E-mail ID
David Grant Sparks	Queensland University of Technology	david.sparks@qut.edu.au
Maja Gajic	RMIT	s3196258@student.rmit.edu.au
Haixing Meng	Tongji University	menghaixing@tongji.edu.cn
Rui Wu	Chinese Academy of Sciences - Institute of Applied Ecology	njwurui@126.com
Jihane Assaf	RMIT	s3467254@student.rmit.edu.au
Mazlina Zaira Binti Mohammad	Asian Institute of Technology	mazlinazaira@gmail.com
Haitham Alkhalaf	Keio University	haitham@sfc.keio.ac.jp
Panu Thainiramit	Prince of Songkla University	panu.t@psu.ac.th
Napapat Permpool	King Mongkut's University of Technology Thonburi	np.permpool@gmail.com
Ranaporn Tantiwechwuttikul	University of Tokyo	ranaporn@s.k.u-tokyo.ac.jp
Karishma Kashyap	RMIT	karishma.kashyap@rmit.edu.au
Ram Kumar Singh	TERI University	singhramkumar@gmail.com
Madhuri Nanda	TERI University	madhurinanda@gmail.com
Saad Faruqui	TERI University	saadahamad.faruqui@students.teriuniversity.ac.in
Manisha Singh	TERI University	manishasingh.rs1@gmail.com
Meenakshi Chaudhary	TERI University	Meenakshi.dawas@gmail.com
Akanksha Balha	TERI University	akanksha.balha@gmail.com
Christopher Nicholas Hideo Doll	UNU-IAS	doll@unu.edu
Mario Tumamac Tabucanon	UNU-IAS	tabucanon@unu.edu
Daniel Joseph Powell	UNU Media Centre	powell@unu.edu
Ryoko Suzuki	UNU-IAS	ryoko.suzuki@unu.edu
Unnikrishnan Payyallimana	UNU-IAS	payyappalli@unu.edu

3. Programme

General description:

- The aim of the researchers' school is to offer an opportunity for students to be exposed to sustainability issues, while developing research skills, and to further encourage a network of students/future professionals and academics working on sustainable development.
- The programme shall provide the following:
 - Specific knowledge regarding the theme.
 - Opportunities for research skills development, including communication skills through activities such as the 3-minute thesis competition¹ and a research communication session². The aim is to help students frame their research in a simplified manner and thus reach broader audiences.
 - Interaction among participants and resource persons through group activities and field trips, that will provide context and content for students to develop a research proposal looking at how different policies and projects can be interlinked and provide integrative solutions for various sustainability challenges.
- Resource persons' lectures will be split between introductory and methodological themes prior to the fieldtrips and analytical/synthesizing themes after the fieldtrips to aid the students in the development of their research proposal.

Practical considerations:

- There are two sessions in each morning and afternoon period. A 15 minute break will take place between each activity.
- A core team of 4-5 resource persons shall participate in the entire programme, to coordinate activities, facilitate group work sessions and take the responsibility of any decisions during the delivery of the researchers' school.
- In view of previous years' experience, lecture slots are scheduled for 90 minutes in total including presentation, questions and general discussions.
- 3 field trips are scheduled around the themes of energy.

¹ The 3-minute thesis competition is an activity whereby researchers present an outline of their research in three minutes using 1 slide. It is aimed at an educated but non-specialist audience and graded according to three criteria: clarity of presentation, comprehension and the engaging nature of the research.

² Using practical examples from UNU's web magazine Our World, this session will explore the importance of creating a conversation around research that reaches beyond traditional peer groups to better engage with decision-makers and the public. For more information: <http://ourworld.unu.edu/en/about>

Programme:

Sunday 31 Jan 2016

Arrival

01 Feb Monday	Time		Activity	Presenter
	9:00-9:30	30'	Registration	
	9:30-10:00	30'	Opening Ceremony Welcome remarks	<ul style="list-style-type: none"> - Dr. Rajiv Seth, Acting Vice Chancellor, TERI University - Prof Mario Tabucanon, UNU-IAS
	10:00-10:45	45'	Keynote Address and addresses by eminent speakers on the theme	<ul style="list-style-type: none"> - Dr Ajay Mathur, D.G Designate, TERI - Dr Upendra Tripathi Secretary, Ministry of New and Renewable Energy (MNRE) - Prof Arun Kansal
	10:45-11:00	15'	Tea break	
	11:00-12:30	90'	Panel discussion – Sustainable energy for transforming lives	Chair: Mr Amit Kumar, Dean, Distance and Short-term Education Programme, TERI University Panelists: <ul style="list-style-type: none"> - Mr. Raghunath Mahapatra, Vice President, Strategy, Welspun Energy - Dr P C Maithani, Director, MNRE - Debajit Palit, Associate Director, Social Transformation, TERI - Ms. Disha Banerjee Director, Policy and Communication Smart Power India
	12:30-13:30	60'	Lunch	
	13:30-14:00	30'	Programme Introduction	Prof Mario Tabucanon, UNU-IAS Fawzia Tarannum, TU
	14:00-15:30	90'	Movie 1- “Off-grid Access System in South Asia” – The film chronicles different models of off-grid electrification that were implemented /supported by TERI in different geographies.	Debajit Palit, Associate Director, Social Transformation, TERI

			Discussion	
	15:30-15:45	15'	Tea Break	
	15:45-17:15	90'	Movie II Fuelling Change/ Renewing India: Renewable Energy in India Discussion	TERI and TU
	17.15	15'	Close	

02 Feb Tuesday	Time		Activity	Presenter
(Preparing for the first Field Trip)	09:15-10:45	90'	Lecture 1: Linking energy crisis with Climate Change	Dr. Ritu Mathur, Director, Green Growth and Resource Efficiency, TERI
	10:45-11:00	15'	Tea break	
	11:00-12:30	90'	Lecture 2: Energy Security-Global and local Challenges	Mr. Anil Kumar Jain, Advisor, NITI (National Institution for Transforming India) Aayog, Government of India
	12:30-14:00	90'	Lunch	
	14:00-15:30	90'	Lecture 3: Energy Accessibility and socio-economic impact	Mr Martand Shardul, Associate Fellow Social Transformation, TERI
	15:30-15:45	15'	Tea break	
	15:45-17:15	90'	Lecture 4: Energy efficient Stoves and Lighting a billion lives initiative of TERI	Mr Martand Shardul, Associate Fellow Social Transformation, TERI
	17:15-17:30	15'	UN Sustainable Development Solutions Network (SDSN) South Asia Regional Center – A brief insight	Mr Siamak Sam Loni, Global Coordinator, Sustainable Development Solutions Network, Youth Initiative (SDSN-Y)
	17:30		Close	

03 Feb Wednesday	Time		Activity	Presenter
Field trip 1, TERI Campus in Gawal Pahari & National Institute of	09:30		Departure	
	10:30-11:00		Welcome and opening remarks – Contribution of TERI towards sustainable energy	Mr Amit Kumar, Dean, Distance and Short-term Education Programme, TERI University
	11:00-13:30		Walk around TERI Campus and live demonstration of TERI's initiatives <ul style="list-style-type: none"> ▪ Solar Lanterns 	Mr. Suresh, Facility Manager TERI, Gawal Pahari Mr. N. K Ram, Fellow,

Solar Energy (NISE)		<ul style="list-style-type: none"> ▪ Solar water heaters ▪ Photovoltaic panels ▪ Biomass Gasifier ▪ Underground earth tunnels ▪ Energy-efficient lighting ▪ Waste-water recycling ▪ Biogas Plant 	TERI Mr. Alekhya Datta, Associate Fellow, TERI
	13:30-14:30	Lunch	
	14:30-15:00	Travel from Gawal Pahari to NISE	
	15:00-16:30	<p>National Institute of Solar Energy (NISE) Gurgaon (Govt of India's initiative)</p> <ul style="list-style-type: none"> • Grid and off-grid solar systems Thermal , Photovoltaic • Solar Biomass Hybrid Cold Storage 	Dr O S Sastry, Director General
	16:30	Departure from Gurgaon	
	17:30 - 18:30	Arrival in TERI University Campus Field Trip Synthesis	Prof Mario Tabucanon, UNU-IAS Fawzia Tarannum, TU

04 Feb Thursday	Time		Activity	Presenter
	09:15-10:45	90'	Lecture 5: Research Method (Qualitative)	Dr Smriti Das, Assistant Professor, Department of Policy Studies, TERI University
	10:45-11:00	15'	Tea break	
	11:00-12:30	90'	Lecture 6: Research Method (Quantitative)	Dr Papiya Guha Mazumdar, Assistant Professor, Department of Policy Studies, TERI University
	12:30-14:00	90'	Lunch	
	14:00-15:30	90'	Lecture 7: Reducing energy intensity of the Indian economy -	- Mr. Saurabh Diddi Energy Economist Bureau of Energy Efficiency Government of India - Mr. Rakesh Kumar Choudhary, Deputy Director, MSME
	15:30-15:45	15'	Tea break	
	15:45-17:15	90'	Lecture 8: Energy Use Efficiency	Mr Girish Sethi, Director, IEE, TERI
	17:15		Close	

05 Feb Friday	Time		Activity	Presenter
	09:15-10:45	90'	Lecture 9: Energy Policy and Governance and Q & A	Mr. Rakesh Kacker Director, India Habitat Centre & Former Secretary, Government of India
	10:45-11:00	15'	Tea break	
	11:00-12:30	90'	Lecture10: Economics of Renewable Energy and Q&A	Dr Atul Kumar, Associate Professor, Dept of Energy and Environment, TU
	12:30-14:00	90'	Lunch	
	14:00-15:30	90'	Research proposal development	Prof Mario Tabucanon, UNU-IAS
	15:30-15:45	15'	Tea break	
	15:45-17:15	90'	Introduction to three minutes thesis presentation	Mr. Daniel Powell, UNU Media Centre
	17:15		Close	

06 Feb Saturday Field trip 2 Firozabad/ Agra	Time		Activity	Presenter
	06:00		Departure from Hotel Red Fox, New Delhi with packed break fast	-Mr. Ananda Ghosh, TERI -Fawzia Tarannum, TU - Mr Daniel Powell, UNU Media Centre
	10:00		Arrival at Firozabad Glass Factory	-2 to 3 representatives from TU
	12:00		Departure from Firozabad to Agra	
	13:30-14:30		Check in at Hotel Sarovar and Lunch	-Fawzia Tarannum, TU - Mr Daniel Powell, UNU Media Centre
	14:30		Departure from Hotel to Dayalbagh Educational Institute	-2 to 3 representatives from TU
	15:00-17:00		Dayalbagh Educational Institute	Dr. B B Rao, Principal, DEI Technical College
	17:00		Return to Hotel Sarovar	

07 Feb Sunday	Time		Activity	Presenter
	0900		Check out from hotel. Departure from Hotel to Taj Mahal and back to Delhi	
	16:00-17:00		Workshop Session- Synthesis of Field Trip	Mr. Daniel Powell, UNU Media Centre Dr Christopher Doll, UNU- IAS Fawzia Tarannum, TU

08 Feb Monday	Time		Activity	Presenter
Field Trip 3: Visit to Chandigarh – By Bus	06:30		Departure	
	11:30-17:00		-Energy Efficiency Improvements in Indian Brick Industry -Green Building • Punjab Energy Development Agency	Sachin Kumar, Fellow, TERI Fawzia Tarannum TERI University TU Admin Chris/Ryoko/Daniel
	17:00		Departure from Chandigarh	

09 Feb Tuesday	Time		Activity	Presenter
	09:15-10:45	90'	Field trip synthesis	Dr. Christopher Doll, UNU-IAS Fawzia Tarannum
	10:45-11:00	15'	Tea break	
	11:00-12:30	90'	Research Communication	Mr. Daniel Powell, UNU Media Centre
	12:30-14:00	90'	Lunch	
	14:00-15:30	90'	Group work 1	Chris/Unni/Ryoko/Ranjana
	15:30-15:45	15'	Tea break	
	15:45-17:15	90'	3-minute thesis practice	Chris/Unni/Ryoko/Ranjana
	17:30-19:00	90'	Group Work 2	Chris/Unni/Ryoko/Ranjana
	19:00		Close	

10 Feb Wednesday	Time		Activity	Presenter
	09:15-10:45	90'	Lecture 11 - 'Community Engagement and Capacity Building to facilitate Energy Availability, Accessibility and Affordability'	Ms Soma Dutta, Programme Coordinator Women's Economic Empowerment, Energia
	10:45-11:00	15'	Tea break	
	11:00-12:30	90'	Lecture 12- Waste to energy	Dr. Suneel Pandey, Director, Green Growth and Resource Efficiency, TERI
	12:30-14:00	90'	Lunch	
	14:00-15:30	90'	Group Work 3	Chris/Unni/Ryoko/Ranjana
	15:30-15:45	15'	Tea break	
	15:45-17:15	90'	Group work 4	Chris/Unni/Ryoko/Ranjana
	17:15		Close	

11 Feb Thursday	Time		Activity	Presenter
	09:15-10:45	90'	Life after PhD	Moderator – Dr. Christopher Doll, UNU-IAS -Dr Cristina Rumbaitis, Action on Climate Today -Dr. Preeti Agarwal, VIOM Networks -Dr. Pooja Arora, TERI -Dr Mahendra Sethi, NIUA -Dr Shivakshi Jasrotia
	10:45-11:00	15'	Tea break	
	11:00-12:30	90'	Group work 5	Chris/Unni/Ryoko/Ranjana
	12:30-14:00	90'	Lunch	
	14:00-15:30	90'	3-minute thesis exercise	Chris/Unni/Ryoko/Ranjana
	15:30-15:45	15'	Tea break	
	15:45-17:15	90'	Group work 6	Chris/Unni/Ryoko/Ranjana
	17:15		Close	

12 Feb Friday	Time		Activity	Presenter
	09:15-10:45	90'	Summary of lectures and evaluation	Chris/Unni/Ryoko/Fawzia
	10:45-11:00	15'	Tea break	
	11:00-12:30	90'	3-minutes thesis competition final	TU student, Arun Kansal/ Chris/Unni/Ryoko/ Ranjana
	12:30-14:00	90'	Lunch	
	14:00-15:30	90'	Research Proposal presentation and Discussions	TU student, Staff and Chris/Unni/Ryoko/ Ranjana
	15:30-15:45	15'	Tea break	
	15:45-17:15	90'	Research Proposal presentation and Discussions	TU student, Staff and Chris/Unni/Ryoko/ Ranjana
	17:15		Close	Dr Rajiv Seth, Prof Arun Kansal, Mr Amit Kumar Chris/Unni/Ryoko/Fawzia/ Ranjana
Evening		Gala Dinner		

13 Feb
Saturday
Departure

4. Field Trip Summary

(a) *First trip*

i. TERI Campus in Gawal Pahari & National Institute of Solar Energy (NISE)

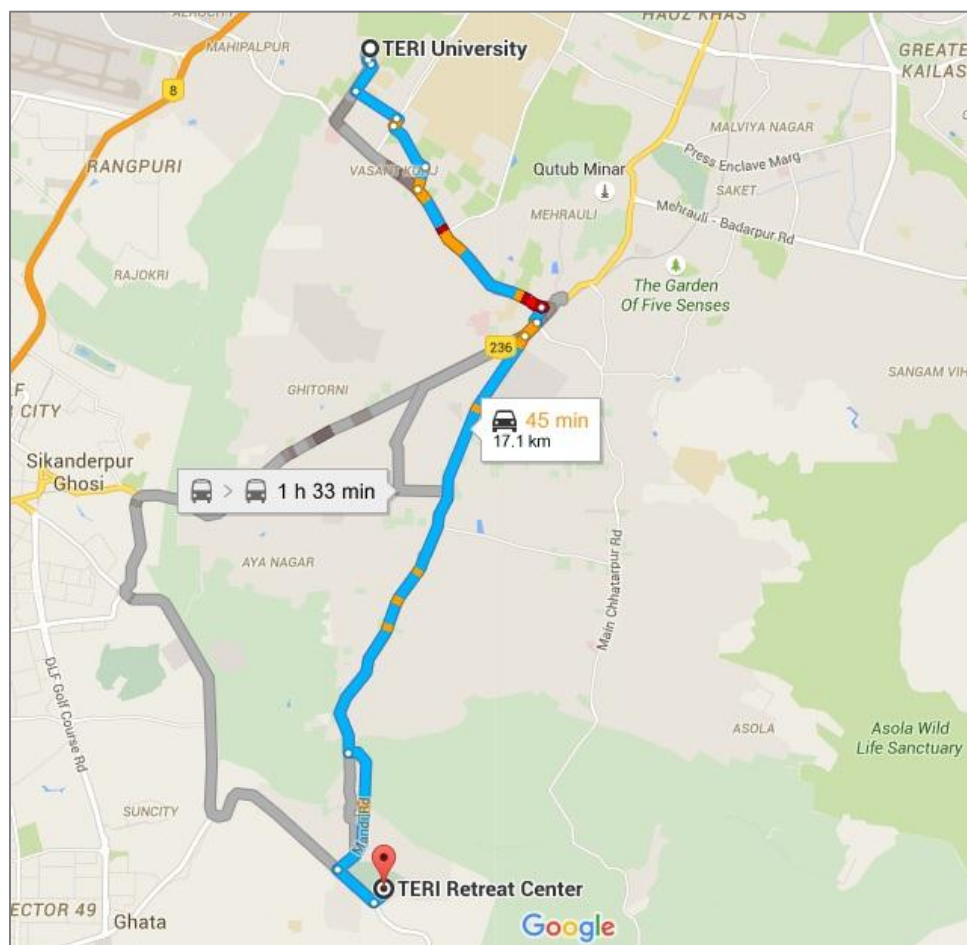


Renewable energy is seen as an effective option for ensuring access to modern energy services. Local and regional environmental problems associated with generation of conventional energy provide a strong argument for enhancing the role of renewable energy within broad energy development plans of the country. With this in mind, TERI developed this complex at Gwal Pahari, Gurgaon, as an example of a sustainable habitat.

Resource Efficient TERI Retreat for Environmental Awareness and Training (RETREAT - a model of sustainable habitat) is a part of The Energy & Resources Institute (TERI) Gwal Pahari campus located on Faridabad Gurgaon Road about 30 km south of Delhi, in Gurgaon district of Haryana. TERI has successfully built this habitat, which integrates various forms of renewable energy sources and is an ideal example for architects, builders, and others for the promotion of renewable energy technologies in the country. The beautifully landscaped 36-hectare site, includes a garden that features prize-winning roses. It makes full use of the most abundant source of energy, the sun, by tapping its

energy both directly and indirectly. Some innovative ways of tapping solar energy and using energy more efficiently at the RETREAT are as follows.

- Solar water heaters
- Photovoltaic panels
- Biomass Gasifier for power generation
- Underground earth air tunnels for Air Conditioning
- Absorption chillers
- Energy-efficient lighting
- Waste-water recycling



ii. National Institute of Solar Energy (NISE)

NISE is an autonomous institute under Ministry of New and Renewable Energy, Government of India established to facilitate the Research & Development, Testing, Certification, Skill Development activities in the field of Solar energy technologies. The Government of India has converted 25 year old Solar Energy Centre (SEC) under MNRE to an autonomous institution in September, 2013 to assist the

Ministry in implementing the National Solar Mission and to coordinate research, technology and other related works. NISE also supports the ministry in the implementation of prestigious National Solar mission. The institute is committed to the development and demonstration of solar energy related technologies and its applications to the common man in the country. NISE continuously strives to improve the facilities so as to compete with the latest technological advancements.



(b) Second trip

i. Promotion of energy efficient furnaces in Firozabad glass industry cluster



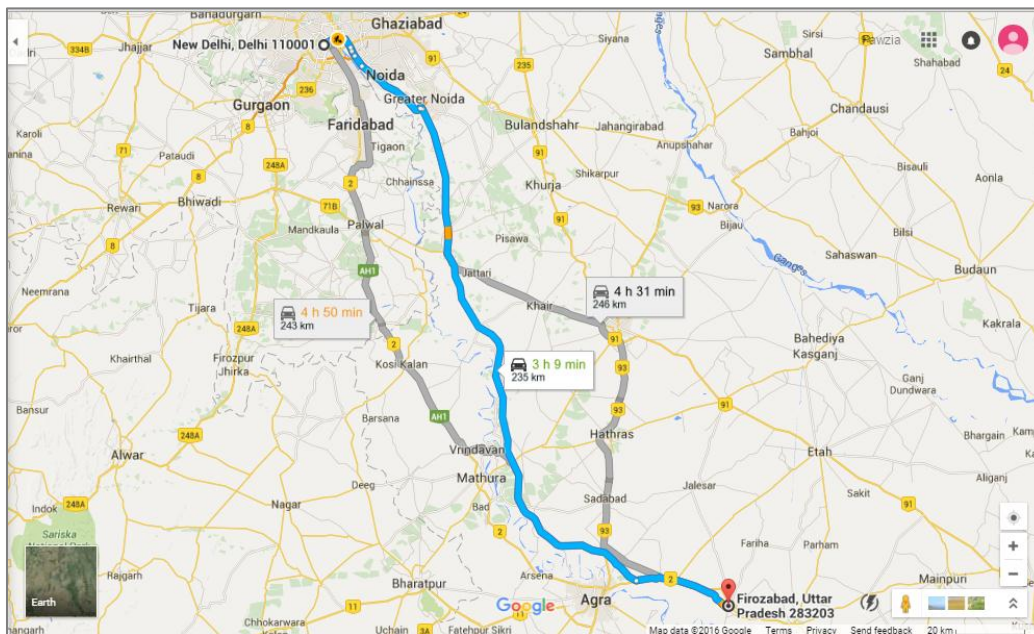
Firozabad hosts the largest small-scale glass industry cluster in India accounts for about 70% of total glass production in small scale cluster in India, and produces around 2,000 tonnes of glass products daily, including about 150 million bangles. Apart from bangles, Firozabad produces glassware, decorative items, beads, bulbs, headlight cover etc. Over two decades ago, the Swiss Agency for Development and Cooperation (SDC) partnered with TERI in a project aimed at replacing highly polluting, low efficiency coal-based technologies used by glass factories in Firozabad with clean, energy efficient options. The project successfully developed and promoted two clean, energy efficient natural gas-based technologies; recuperative pot furnace for glass melting and a muffle furnace for baking glass bangles.

The innovative technologies promoted in Firozabad by SDC and TERI are not only yielding substantial energy savings but have also helped in the reduction of particulates and carbon emissions, resulting in significant improvement in the local environment. It has been adopted by more than 90% of pot furnace units in the Firozabad cluster, resulting in total energy savings to the tune of 22,000 TOE (tonne oil equivalent) per year with reductions in avoided CO₂ emission of 55,000 tonnes per year.

TERI provided technical support to all these units for the adoption of the energy efficient design, selection of equipment, furnace construction, commissioning, fine-tuning and trouble shooting. All the replicated units have been consistently achieving energy

savings of nearly 30% compared to the baseline furnaces that were converted to TERI designed energy efficient furnace in the cluster.

TERI has published one book covering TERI's work in Firozabad, which is available in <http://sameeksha.org/> under resources (Books, Publications and Brochures) with title as mentioned below. "Towards Cleaner Technologies A process story in the Firozabad glass industry cluster". You may wish to down load this book for more information please.



ii. Dayalbagh Educational Institute

The Dayalbagh Educational Institute, a premier university of India, has emerged as a triple entity with the three fold functions of a Secondary Board, a Technical Education Board and a University. The Institute has introduced a scheme of innovative and comprehensive education in the above three domains with the aim of developing in its Alumni an integrated personality of a well-adjusted complete person. The Institute has received 'A' Grade in a recent NAAC accreditation. The conference coincides with the Centennial Celebrations of the Foundation of Education in Dayalbagh, as also which is

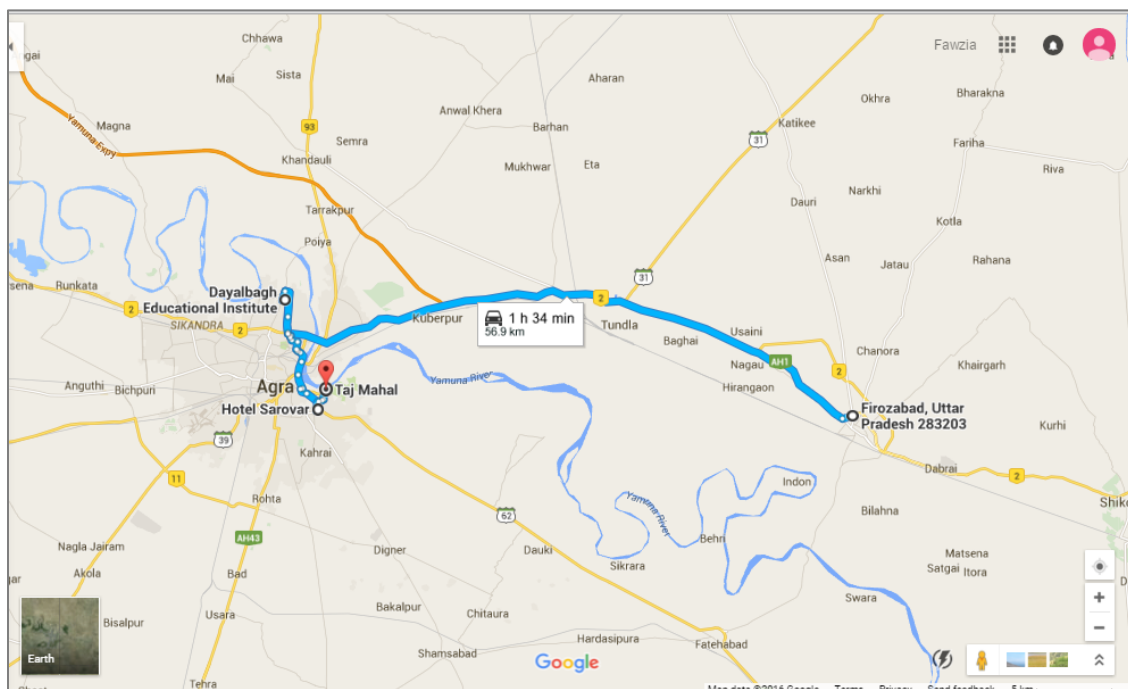
poised to become a vocational university campus, a Decade of Distance Learning Centre at MTV Puram.



In order to attain the above lofty vision in a sustainable way, and in particular to realize the vision of “Eco-Village”, the Dayalbagh Educational Institute has ventured into 'total' solar electrification of its campus.

This decentralised model uses 7 Roof-Top Solar Photovoltaic (SPV) power plants together supplying 518.2 kW at present. This, when combined with two more plants under erection and the existing residential units will amount to about 1 MW capacity. It also uses solar thermal cooking systems in all the hostels. In addition to the above micro grid in the main campus at Dayalbagh, Agra, about 30 kW has been installed at various Distance Education Centers of DEI in different regions of the country. A 5kW Solar-Wind integrated system has been installed at its Melathiruvencatanathapuram (MTV Puram), Tirunelveli campus as a training test bed for the pioneering vocational stream on solar – wind electrification being launched in January 2014. This is relevant to the rural development of the region with abundant solar and wind energy. The renewable energy initiatives of Dayalbagh Educational Institute have demonstrated that Universities, building intellectual resources through teaching-learning and research, are perfect venues for establishing renewable energy microgrids.

In addition to sustainable development through clean energy technologies and self-sufficiency in energy, a university micro grid is an ideal test bed for conducting indigenous research and development through UG and PG projects and Ph.D. theses. This would ensure quality research with relevance as well as development of skilled manpower and intellectual property in the area. Universities can design and implement model curriculum for vocational diploma and certificate and higher courses in solar energy technologies, provide earn-while-you-learn schemes to the students and encourage entrepreneurial start-ups through incubation cells



c. Third Trip

i. Punjab Energy Development Agency – Roof Top Net Metering

<http://www.netmeteringpunjab.com/>

What is Net Metering?

Net metering is the process through which you attain a “dual-benefit “by installing a solar power plant on the roof, open space, walls of the building to generate electricity. Generated power is first used in the building as per the requirement and the surplus power is fed to the grid of utility (PSPCL).

Know the Dual Benefit?

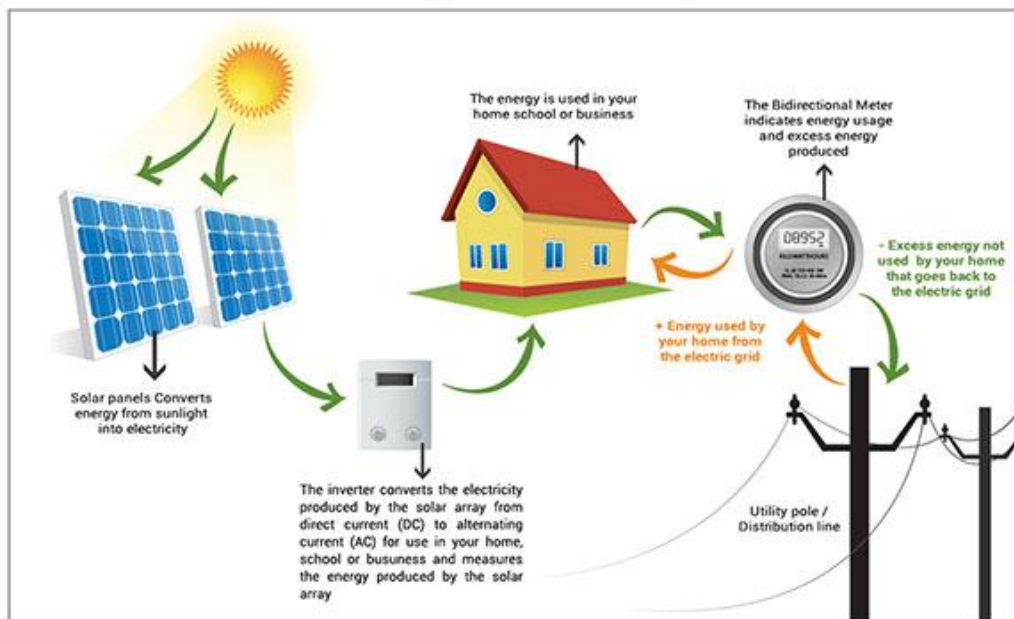
A bi-directional meter is installed in the supply line to register import and export of power. Net metering arrangements, thus, combine elements of captive power consumption and exchange of power with the utility. The bill is issued by utility after adjustment of import and export of power.

How does it work?

Under Net Metering policy, solar power plant is installed on the roof top of the building. During day time sun rays fall on solar panels to generate electricity. The generated power is used in the building for running electrical appliances and the surplus power is fed to the grid of PSPCL. In case the power requirement of the building is more than the power being generated, then extra power requirement is drawn from the grid. On the other hand, in case the power generated is more than the power requirement of the building, the surplus power is exported to the grid.

A Bi-directional Meter is installed in the supply line for reading the import and export of power and the bill is issued by PSPCL after the adjustment of import and export of power.

Net metering Solar Power System



5. Academic Tasks

Attendance in all sessions and field trips are expected.

3-minute thesis exercise and final competition

The 3 Minute Thesis Competition is held in every university in Australia and generates enormous excitement and enthusiasm – as well as developing oral presentation and communication skills for presenting an overview of a research project in 3 minutes.

The students will prepare a 3-minute presentation on their research using one PowerPoint slide. The exercise will be introduced on the opening day and students will prepare their talk over the course of the two weeks both in scheduled sessions and in ad-hoc spare time. Resource persons will attend these sessions and assist students to discuss/improve their presentations for the final competition that will take place on the final day of the school.

Group Work and Research Proposal

Group Work sessions will take place in the second week of the school and students will prepare a detailed research proposal based on knowledge acquired, discussions a field trips. Resource persons will assist students' discussion in the formulation of a research proposal with the theme to be selected by students based on lectures and field trips. Each group work session is based on a series of templates that will be shared with students at the 'research plan introduction' session.

Audio-visual materials

During the school, photos and interviews with students are planned and shall be used for publication and promotional purposes. If you are not comfortable with any of these, please inform the Secretariat beforehand, otherwise it is assumed that all participants are in agreement.

6. General Information

Accommodation

Red Fox Delhi Airport Hotel, Delhi, India

Address: Asset No.6, Aerocity Hospitality District, New Delhi - 110037

Phone: +91-(0)11-44232395

- Check in: From 14:00
- Check out: Until 12:00 (Noon)
- Hotel Access: 15 minutes by car from Delhi International Airport

In case you need any assistance, please contact:

Ms. Ruchira Ghosh: +91 9958064388

Mr. Vikas Bhati: +91 9873249925

Ms. Fawzia Tarannum: +91 9968875742

Reimbursement of Your Travel Expenses

- Terminal Expenses and Visa Processing Fee

You will receive the fixed amount of terminal expenses to cover your local transportation based on the regulations during your stay. Visa processing fees will be also reimbursed (if applicable). The expenses will be reimbursed upon submission of the original receipt to Ms. Fawzia Tarannum, TERI University at Registration on 1 February.

- Boarding Stubs

For those who are funded by UNU-IAS, please keep the boarding stubs (remaining part of the boarding passes) and submit them to Ms. Fawzia Tarannum at Registration on 1 February. For the return flight boarding stubs, please send a scanned copy of the stubs by e-mail (yrs@unu.edu) then keep the original. We might ask you to send the original stubs to UNU-IAS by post later.

[Mailing address]

United Nations University Institute for the Advance Study of Sustainability (UNU-IAS)
ProSPER.Net Secretariat, ESD Programme (c/o Ms. Ryoko Suzuki)
5-53-70 Jingumae, Shibuya-ku, Tokyo 150-8925 JAPAN

Currency

The currency exchange rate as of January 2016 for Indian Rupee is approximately INR 66.4 to USD 1.00. We recommend you to have some Indian Rupee in cash upon your arrival to India.

Transportation

- **Getting to Hotel from the Delhi Airport**

Pick up is organized for every participant from the airport by TERI University. Cars will be arranged depending on the time at which you arrive. You may have to share the car if we have two to three participants arriving at the same time. Please look for your name on the placard at the exit of the airport.

In case you need any assistance, please contact:

Ms. Ruchira Ghosh: +91 9958064388
Mr. Vikas Bhati: +91 9873249925
Ms. Fawzia Tarannum: +91 9968875742

- **Getting to the Delhi Airport from Hotel**

Drop off at the airport shall be organized by TERI University depending on your flight timings.

Immigration Requirements

We request that you check with the embassy or consulate of India in your area about visa requirements. Travellers requiring an entry visa are advised to apply early for it, since it may take two weeks or more to obtain it. Please submit the receipt of the visa application fee (if any) to Ms. Fawzia Tarannum on 1 February.

Travel Insurance

Please make sure to have your travel insurance covering your whole stay in India. UNU- IAS, ProSPER.Net Secretariat and TERI University will not be able to provide this and are not responsible in case any medical emergency happens. ProSPER.Net Secretariat and TERI University will be happy to assist participants in any need they might have, but medical related expenses shall be covered by individual travel insurance.

Meals

- Breakfast: Provided at Red Fox Hotel between 0730 hrs - 1000hrs. Please try to finish your breakfast by 0830hrs
- Lunch: Provided at TERI University between 1230 to 1400 hours
- Dinner: Provided at Red Fox Hotel between 1930 hours to 2230 hours

Internet Access/ Wi-Fi

Available in Red Fox Hotel and at TERI University (password will be provided upon arrival/check in).

SIM Cards

For assistance on purchase of SIM Cards contact:

Mr. Vikas Bhati
Assistant Administrative Officer, TERI University
+91 9873249925
vikas.bhati@teriuniversity.ac.in

Local contact

Should you have any concerns or problems, please do not hesitate to contact:

Mr. Sandeep Arora

Addl. General Manager (Administrative Services), TERI University
+91 9811799046
sandeepa@teri.res.in

Mr. Vikas Bhati

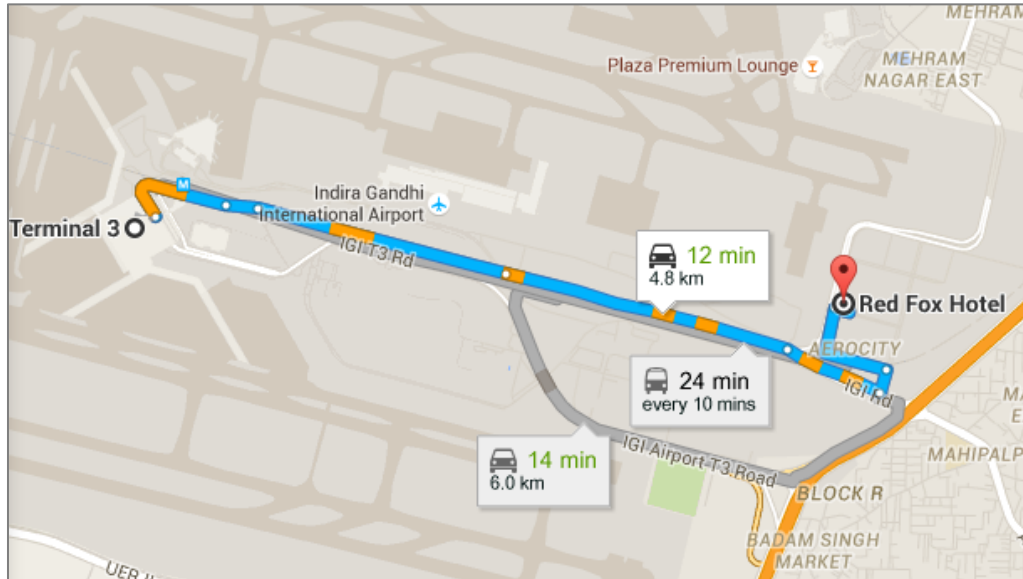
Assistant Administrative Officer, TERI University
+91 9873249925
vikas.bhati@teriuniversity.ac.in

Ms. Fawzia Tarannum

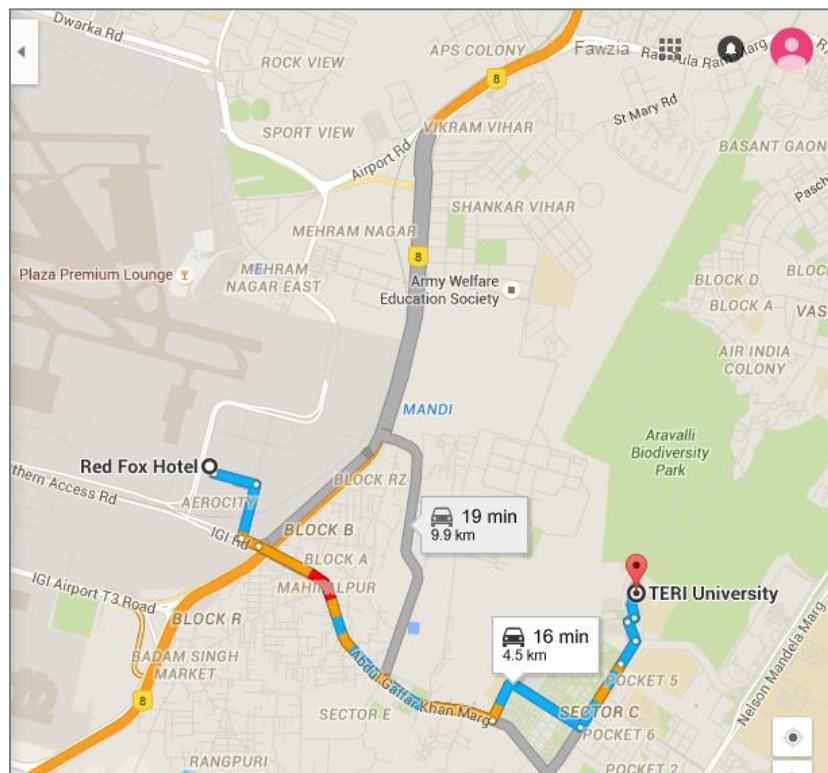
Lecturer, Coca-Cola Department of Regional Water Studies
TERI University, New Delhi
+91 9968875742
fawzia.tarannum1@teriuniversity.ac.in

Maps

- Map to Red Fox Hotel from Delhi Airport:



- Map of the YRS's venue



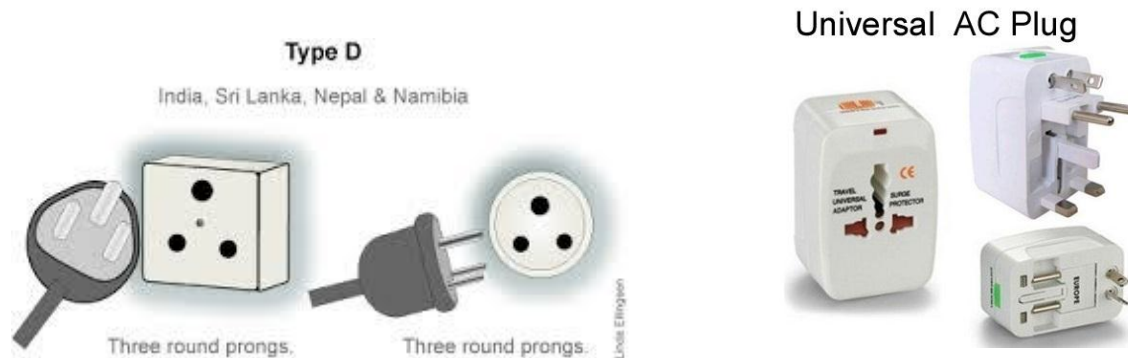
➤ **Fast facts for traveling to Delhi, India**

Time

Local time is GMT +5:30 hours.

Electricity

The voltage used throughout India is 220 - 240 volts, A.C. The frequencies used in India are 50 Hertz. If you bring electrical appliances that are not compatible with the voltage, you will need a transformer to convert the voltage. The Indian power points are round. You will require an adaptor to use them.



Tipping

Tipping is customary in India. In case you wish you can tip the staff assisting in carrying your luggage in the hotel. Please do not tip anyone else. The tipping amount could be around INR 50.00 and not more than that.

Weather

Weather in February:

- Average maximum temp: 24 C
- Average minimum temp: 10 C

February is generally cold in India. Kindly make sure to bring warm clothes with you.

Emergency contact

Police 100 / Fire Department 101 / Medical Emergency 102

7. Short Biographies

7.1. Resource Persons

Dr Christopher Doll (UNU-IAS)



Christopher Doll is a research fellow at the United Nations University Institute for the Advanced Study of Sustainability. He has a broad range of research interests with a focus on urban areas and geospatial technologies. His recent work has explored how cities can shift local development patterns to more sustainable pathways in various different sectors such as transport, energy, waste and biodiversity. To support this, he developed a number of tools that consider both the quantitative and qualitative elements of urban development and is expanding this approach to look at urban health issues. His latest project involves looking at the transfer of low-carbon technology and how to build cooperation in this area. Dr. Doll is originally from the United Kingdom and holds a bachelor's degree in geography and mathematics from Royal Holloway, University of London, MSc and PhD degrees in remote sensing from University College London. Prior to joining UNU, he has held academic positions at Columbia University in New York (CIESIN) and the International Institute for Applied Systems Analysis (IIASA) in Laxenburg, Austria.

Dr Unnikrishnan Payyappallimana (UNU-IAS)



Unnikrishnan Payyappallimana completed his Ph.D. in International Development at the Yokohama National University and is a Research Coordinator in the Education for Sustainable Development Programme at the United Nations University Institute of Advanced Studies (UNU-IAS). He is also an associate fellow at the UNU-International Institute of Global Health based in Malaysia. He has an undergraduate degree in medicine (specialized in Ayurveda – the traditional medicine of India) from Bharathiyar University, India and holds a master's degree in Medical Anthropology from the University of Amsterdam, the Netherlands. He is also an adjunct faculty at the Transdisciplinary University, Bangalore, India. His research interests are traditional knowledge, biodiversity, public health and sustainable development.

Mr Daniel Powell (UNU Media Centre)

Daniel Powell is a Communications Specialist with the United Nations University (UNU) Office of Communications (Tokyo) and co-editor of the UNU web magazine, Our World. Before joining UNU in Tokyo he spent eight years based in Southeast Asia working with development and research projects covering topics ranging from agriculture, biodiversity and water to civil society and migration. Prior to his years in Asia, Daniel was a biologist with the United States Forest Service. He holds a Bachelor of Science (specializing in forest biology) from The Evergreen State College (USA) and a Master of Arts in Sustainable Development from Chiang Mai University (Thailand).

Prof Mario T. Tabucanon (UNU-IAS)

Dr. Mario T. Tabucanon is Visiting Professor at the United Nations University Institute for the Advanced Study of Sustainability (UNU-IAS) and Emeritus Professor at the Asian Institute of Technology (AIT) in Thailand. At UNU-IAS, he is affiliated with the Education for Sustainable Development Programme involved in the promotion of Regional Centres of Expertise on ESD and in the alliance of higher education institutions in the Asia-Pacific region known as the Promotion of Sustainability in Postgraduate Education and Research Network (ProSPER.Net) under the auspices of UNU-IAS. He is also involved in capacity building initiatives of UNU-IAS including the annual ASEAN-plus-Three Leadership Programme on Sustainable Production and Consumption. Before joining UNU-IAS, he served in senior administrative positions of AIT including provost and president. He is currently President of the International Society of Environmental and Rural Development.

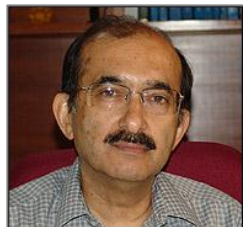
Ms Ryoko Suzuki (UNU-IAS)

Ryoko Suzuki is an Administrative Programme Associate for the Education for Sustainable Development Programme at the United Nations University Institute for the Advanced Study of Sustainability (UNU-IAS). Prior to joining UNU-IAS, she worked as an intern at the Education Policy and Reform Unit, UNESCO Bangkok Office for six months. She also has several years of working experience at a research institute in Japan and the Japanese Embassy in the UK. She obtained her MA in International Education and Development from the University of Sussex in the UK.

Dr Ajay Mathur, DG Designate, TERI

Ajay Mathur is DG Designate, TERI and Director General of the Bureau of Energy Efficiency, and a member of the Prime Minister's Council on Climate Change. As Director General of BEE, Dr. Mathur coordinates the national energy efficiency programme, including the standards and labelling programme for equipment and appliances; the energy conservation building code; the industrial energy efficiency programme, and the DSM programmes in the buildings, lighting, and municipal sectors. Prior to joining

BEE, Dr. Mathur has worked on energy research, financing, and implementation. He has headed the World Bank's Climate Change Team in Washington, DC; and the Energy Engineering Division of TERI in New Delhi; and has also been President of Suzlon Energy Limited. Dr. Mathur received his Bachelor's degree in Chemical Engineering from the University of Roorkee, and PhD from the University of Illinois. He received the Outstanding Alumni Award of the University of Illinois in 2002. Dr. Mathur is the coauthor of three books, and has been a lead author of several reports of the IPCC including the IPCC Special Report on Technology Transfer.

Dr Rajiv Seth (Acting Vice Chancellor – TERI University)

Dr Rajiv Seth is an Aerospace Engineer by training. He has a B Tech from the Indian Institute of Technology, Kanpur and an M Tech from the Indian Institute of Technology, Madras. Thereafter, he has done his Ph D in Business Administration (Finance) from the Aligarh Muslim University. Having spent 27 years in the Indian Air Force, he has worked on various types of aircraft and aero engines and has

been involved in technical evaluation, field testing and technology transfer. Over the last fourteen years, he has been associated with the conceptualization and the growth of the TERI University. He has held positions as the Registrar and Dean (Admin) of the University. He is a Professor of Finance in the Department of Business Sustainability. He has been deeply involved in an international consortium of universities in the Asia-Pacific, which is led by the United Nations University, and which focuses on the integration of sustainable development in higher education. He is a Board Member of this international consortium. His research interests are in the areas of financial derivatives, risk management and green aviation.

Shri Upendra Tripathy (IAS), Secretary, MNRE

Mr Upendra Tripathy, a 1980 batch IAS officer of Karnataka cadre, has been appointed as new secretary at the Ministry of New and Renewable Energy (MNRE). An alumnus of Jawaharlal Nehru University, Delhi and Carleton University, Ottawa, Canada, Dr Tripathy has a rich administrative experience working with local, state and union governments spanning over three decades. Immediately before joining Ministry of New & Renewable Energy, he was Adviser (Trade) in the Indian Embassy in Brussels. He held the post of Additional Secretary, Cabinet Secretariat, Joint Secretary, Minority Affairs and Deputy Secretary, Ministry of Petroleum & Natural Gas in the Central Government. In the State of Karnataka, he has worked in several areas Revenue Administration, Agriculture & Horticulture, Rural Development, and Environment & Transportation.

Prof Arun Kansal, HoD, Department of Regional Water Studies, TERI University

Prof. Arun Kansal is the Head of Coca-Cola Department of Regional Water Studies at TERI University, India and a visiting Professor in `Natural Science? at University of Derby, UK. He received his Ph D in Environmental Engineering from Indian Institute of Technology, Delhi after completing his M.Tech and B.Tech degree in Civil Engineering. He has over 20 years of research/consultancy/teaching experience in the areas of water resource management, waste management with a focus on resource recovery and recycling, urban environment, and energy- environment - climate linkages. In his academic career, Prof Kansal has been a visiting Professor (as ICCR Chair Professor from Government of India) to Freie University, Berlin, Germany during 2010-11, an Honorary Senior Research Fellow at the University of Birmingham, UK (2011-14), Visiting Professor at the University of Derby in Natural Sciences (2015-2018) and Key Technology Partner Visiting Fellow at the University of Technology Sydney (UTS), Australia. He also served as a Lead Author for IPCC 5th Assessment Report WGIII.

Amit Kumar, Dean (Distance and Short-term Education), Department of Energy and Environment, TERI University

Mr. Kumar is a Mechanical Engineer with specialization in thermal engineering from University of Roorkee (now Indian Institute of Technology, Roorkee) where he was awarded the University Gold Medal. Till recently, before he moved to TERI University as Adjunct Professor (Sustainable Energy), Mr. Kumar was leading research activities in the fields of renewable energy and resource efficient process technology applications in TERI. He has been working on the development and diffusion of cleaner and renewable energy resources based technological solutions in India for over 32 years. His experience ranges from policy and programme formulation, through project implementation, to the design and development of renewable-energy technologies, as well as manufacturing of solar energy devices. His exposure combines different facets of renewable energy industry as well as research domain. He is actively involved in taking forward South - South cooperation in Africa and the Pacific Island countries. In his capacity as the Regional Programme Advisor, REEEP (Renewable Energy and Energy Efficiency Partnership) South Asia Secretariat; he oversees REEEP activities in the region. He has travelled widely as an invited expert. Mr Kumar is also coordinating SE4All Capacity Building Hub; one of the global hubs of the UN supported Sustainable Energy for All initiative (SE4All).

Mr. Raghunath Mahapatra, Vice President & Head Strategy, Welspun Renewables

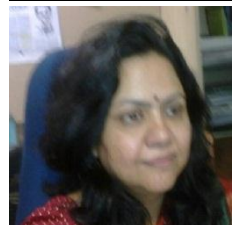
Raghunath Mahapatra is the Vice President and the head of strategy at Welspun Renewables. He has over 24 years of experience with companies of repute. Prior to joining Welspun he has worked with Ernst & Young and Trident Business Solutions - ERP Vertical of Mazars India. He was the co-founder of Verve Consulting Limited and has also worked in Vizag Steel Plant. He is an electrical engineer by training and MBA in finance and marketing from XLRI, Jamshedpur. He also has a Master's degree in Strategy and International finance from ENPC School of International Management, Paris.

Dr P C Maithani, Director, MNRE

Dr. P. C. Maithani is currently working as a Director in the Ministry of New and Renewable Energy. During his professional career he has worked on different aspects of renewable energy programmes and policies. Dr. Maithani was Visiting Fellow with TERI for a year in 2006 and also visiting Faculty at TERI University in 2013. He holds a doctorate in Physics and Post Graduate Diploma in Public Policy and Management from Indian Institute of Management, Bangalore. He has contributed to many papers and articles and authored several books like 'Renewable Energy in the Global Context' and 'Achieving Universal Energy Access in India: Challenges and the Way Forward'.

Mr Debajit Palit, Associate Director, Social Transformation, TERI

Mr Debajit Palit works in the field of clean energy access, distributed generation, rural electrification policy and regulation, solar photovoltaics, and biomass gasification. Mr Palit joined TERI in 1998 and has been since working on projects related to technology adaptation, resource assessment and energy planning; project implementation; policy and regulatory studies; monitoring and impact assessment; and capacity building. He has vast national and international experience working in projects for UN organisations, the World Bank, Asian Development Bank and National Governments across India, Bangladesh, Bhutan, Cambodia, Myanmar, Nepal, Philippines, and Thailand in Asia; and Ethiopia, Kenya, Liberia, Sierra Leone, and Uganda in Africa. He has authored a book on rural electricity distribution franchisees, edited various books, contributed around 30 technical papers in peer-reviewed journals and conference proceedings, and has participated in more than 30 national and international conferences and workshops. He is also leading the 'Lighting for All' Working Group under the Energy for All Partnership of Asian Development Bank. Mr Palit holds a Masters' degree in Physics and has completed post graduate diploma in Non-Conventional Energy Technology.

Ms Disha Banerjee, Director- Policy and Communications, Smart Power India

Dr. Disha Banerjee is a specialist in the policy and regulatory affairs sector with special focus on policy advocacy stakeholder engagement, managing new initiatives and communication strategy. During her career span of 24 years, Disha has played a critical role in public relations strategies and stakeholder engagement across a multitude of platforms ranging from leading business chambers, corporate houses and PR firms.

Dr Ritu Mathur Associate Director, Modelling & Economic Analysis Division, TERI

Dr Ritu Mathur is currently the Associate Director of the Modelling & Economic Analysis Division at TERI. She is an economist by training and has a Ph.D. in Energy Science from Kyoto University, Japan. Dr Mathur has used various modelling and analytical tools such as the MEDEES-ENV model, the LEAP framework, the IEA-MARKAL model, Input-Output models and Generalised Algebraic Modeling Systems (GAMS) for developing national and sectoral level energy models at TERI for examining the prospects of future energy use patterns and their implications on the economy and environment.

Over the last 17 years, she has led several projects with interdisciplinary teams, and applied techno-economic analysis and quantitative modelling techniques to examine various cross-cutting issues such as energy pricing, environmental implications of energy use, examining mitigation options and potential for the country to combat climate change, etc. She has authored several papers, reports and books related with energy use and its implications on the environment at the local and global levels in order to inform and influence various stakeholders in decision making. Dr Mathur is a member of the Expert Group on Low Carbon Economy for Inclusive Growth and of the Modeling Sub-Group of the Ministry of Environment and Forests, Govt. of India, and a Lead Author in WG III of the IPCC AR5.

Shri Anil Kumar Jain (IAS) Advisor, NITI Aayog, Government of India

Shri Anil Kumar Jain is a member of the Indian Administrative Service of the Government of India (IAS/ Madhya Pradesh/1986). Shri Anil Kumar Jain holds a BA (Honours) in Economics, an MBA, and a Diploma from the Indian Institute of Foreign Trade. He has published a number of papers and articles on the energy sector, including a book on natural gas policy framework in India (OUP, Oxford). He is also a Visiting Senior Research Fellow at the Oxford Institute for Energy Studies, Oxford. Shri Jain has over two and a half decades of administrative experience at the field and policy formulation levels in various

Ministries/Departments in the state and central governments. Between 2003 and 2008, as Director and Joint Secretary in the Ministry of Petroleum and Natural Gas, he was closely involved with policy formulation and implementation on the upstream and downstream development of the gas sector in India, including on exploration, the award of acreages, and the pricing and distribution of natural gas. Shri Jain is presently Adviser (Energy, Climate Change and Overseas Engagements), NITI Aayog (former Planning Commission), Government of India.

Mr Martand Shardul, Associate Fellow, Social Transformation, TERI

Martand is a Computer Engineer by training and a Global MDP alumnus. He works with the Lighting a Billion Lives (LaBL) initiative and the UN SE4ALL's Capacity Building Hub hosted at TERI, New Delhi. He has over 3 years of experience in the areas of technology development, technology commercialization, social mobilization, awareness generation, fund raising, project monitoring and market creation for energy access. He has worked in the IT sector as Java developer and has also interned with CARE India and Husk Power Systems. He is the Representative for South-Asia at Youth Assembly of UN Sustainable Development Solutions Network (SDSN). He is also the Member of the Leadership Committee of Students and Alumni Advisory Council (SAAC) at Global MDP (hosted at MDP Secretariat, The Earth Institute, Columbia University).

Smriti Das, Assistant Professor, Dept of Policy Studies, TERI University

Dr Das's research pertains to institutions, policies, politics of resource management and issues pertaining to rural development in India. Her interdisciplinary training and experience in implementation of development projects has given her research an edge especially in the area of managing natural resources. While, at CISED and ATREE, she looked extensively at the issue of diversion of forestland for non-forest use (from a political economy perspective) and the implementation of Forest Rights Act of 2006. She is interested in continuing the latter, given the complex interplay of interests that is evident in its implementation. In future, she would also like to incorporate the dimensions of climate change in the overall governance framework for her research.

Papiya Guha Mazumdar, Assistant Professor, Dept of Policy Studies, TERI University

With a background in Geography and Demography and doctoral research in the latter, Dr. Papiya Guha Mazumdar shares her research interests in understanding linkages between space and people. Through her research for over a decade, Papiya has maintained a close interface with government health departments and development partners in different states across India and advised in formulating evidence-based policy making in health sector. As a former faculty at the International Institute of Population Sciences, she has been involved in teaching theoretical demography and application of software packages in quantitative and qualitative analysis apart from contributing in developing courses for development professionals enrolled in the Diploma in Population Studies programme.

Mr Girish Sethi, Senior Director , IEE, TERI

Mr Sethi leads and manages the programme on promoting efficiency in the industrial sector, encompassing both large industries and Small and Medium Enterprises (SMEs). He has more than 23 years of experience in the field of energy conservation and environment improvement in the industrial sector and has been with TERI for the past 15 years. Aside of providing strategic direction and coordinating the activities related to industrial energy efficiency, he has lead multidisciplinary research teams in action research projects involving development/ adaptation of energy efficient and environmentally benign technologies. Mr Sethi is presently managing a large program funded by a bilateral organization that focuses on holistic development of few energy intensive small-scale industry sectors in India. He is also involved in matters related to inventorization of corporate level GHG emissions and aspects related to transfer and promotion of low carbon energy technologies in the context of climate change. Mr Sethi is a Chemical Engineer with Masters in Energy Studies from IIT, New Delhi. He has also completed a multi-disciplinary Masters course on “Technology in the Tropics” from University of Applied Sciences, Cologne, Germany.

Mr. Saurabh Diddi, Energy Economist, Bureau of Energy Efficiency, Government of India

Mr. Saurabh Diddi is an Energy Economist with Bureau of Energy Efficiency, Government of India. He has over 15 years of consulting experience in all aspects of power sector, energy efficiency & conservation and energy management. He has direct experience in energy audits and development of policy documents. Prior to joining Bureau of Energy efficiency, he has worked as a Senior Consultant with PricewaterhouseCoopers India and as Assistant Director with National Productivity Council. He holds a Mechanical Engineering degree from Punjab Technical University and MBA Finance from Faculty of Management Studies, University of Delhi.

Mr. Rakesh Kumar Choudhary, Deputy Director, MSME

Mr. Rakesh Kumar Choudhary is Deputy Director at MSME. He joined Ministry of Micro, Small and Medium enterprises (MSME) in June, 1999. Along with providing techno-economic and managerial consultancy, common facilities and extension services to MSMEs, he has also been involved in policy formulation for the promotion and development of MSMEs. He has also served at National Manufacturing Competitiveness Council (NMCC), under Ministry of Commerce and Industry on deputation from September, 2006 to August, 2010 as Deputy Chief. NMCC was created for Policy formulation at highest level for manufacturing sector. He was also responsible for

implementation and monitoring of Energy Efficient Technology under Technology and Quality Up gradation scheme by selecting appropriate technology in a given cluster in coordination with various financial institutions for disbursement of subsidy. He has also been instrumental in co-ordinating with multilateral agencies viz. GEF, UNIDO, World Bank etc. for MSME development particularly in respect of Energy Efficiency intervention. He is a Master's in Business Management and holds an M.Tech degree.

Mr. Rakesh Kacker, Director, India Habitat Centre & Former Secretary, Government of India



Rakesh Kacker took over as Director of India Habitat Centre on 1 September 2014. A Master's in Economics from the Delhi School of Economics, he taught in Delhi University for three years before joining the Indian Administrative Service in 1977. As a civil service officer, Kacker has worked in the Government of Tamil Nadu and the Government of India. He retired from the Government of India as Secretary, Ministry of Food Processing. He has also worked in The Energy Research Institute (TERI) and in the Indian Wind Energy Association (INWEA). As Senior Fellow at TERI, he was project advisor for Integration of environmental policy in the Sectoral Policies of the Asian Development Bank. He has also been part of various commissions and review committees dealing with natural resources, energy and power. His work in the Government has been towards promoting better environmental compliance, solving problems relating to environmental management in the power sector, and increasing the contribution of renewables through the use of economic instruments.

Atul Kumar, Associate Professor, Dept of Energy and Environment, TERI University



Dr Atul Kumar holds a Master's degree in Physics from H.N.B. Garhwal University and Ph.D. in the area of Energy Policy and Planning from Indian Institute of Technology (IIT), Delhi. With over sixteen years of professional experience, Dr Kumar has led several studies on energy sector assessment, climate change mitigation, energy-economy-environment interaction modelling using various modelling and analytical tools etc. for numerous national and international agencies and organizations at various levels. These include Ministry of Environment, Forests & Climate Change, Planning Commission of Government of India, UNDP, International Energy Agency (IEA) etc. His recent research includes leading a multi-disciplinary team for integration of energy technology, emission inventory, air quality, health impact and crop loss modelling for India

Ms.Soma Dutta, Programme Coordinator, ENERGIA

Soma Dutta is the Programme Coordinator with ENERGIA, the International network on Gender and Sustainable Energy. Soma works on cross cutting issues of gender, poverty and development in the context of energy access and on efforts that contribute to women economic empowerment through energy access. In the area of energy access, Soma has supported policy makers, practitioners, governments, NGOs and international organizations in project planning; socio-economic, institutional and policy analysis; and capacity building. In ENERGIA, she works with a multi-country and multi-partner programme portfolio focused on providing technical and financial support to energy programmes, gender and energy research and evidence based advocacy. She currently leads ENERGIA's Scaling up Energy Access through Women's Economic Empowerment (WE) programme. The WE programme, through its partner organisations in Africa and Asia, supports micro and small energy enterprises run by women, building their capacities through business development trainings, hand held support and technical assistance.

Dr Suneel Pandey Director, Green Growth and Resource Efficiency Division, TERI

Dr Suneel Pandey is presently Senior Fellow and Director, Green Growth and Resource Efficiency Division. In addition, he is also working as Adjunct Faculty and Head for Centre for Regulatory & Policy Research of TERI University. He has more than 25 years of consultancy/ research experience in the areas of municipal, industrial and hospital waste management, waste-to-energy issues, impact assessment, air, water and soil quality monitoring, site assessments, performance evaluation of ETP and institutional strengthening and capacity building. He has obtained his Ph. D. degree in hazardous waste characterization from Nagpur University while working as Project Fellow at NEERI, Nagpur. He has MSc, Analytical Chemistry, Banaras Hindu University, India and did his BSc, Chemistry from Banaras Hindu University, India. Prior to joining TERI, Suneel has worked for ERM India as Consultant for two years where he was working on projects related to hazardous and hospital waste management, environmental site assessments and institutional strengthening and capacity building. Suneel has also worked as Research Assistant at Hong Kong University of Science and Technology on development of landfill liner for containment of land disposed hazardous waste and University of Hong Kong on deriving material balances and associated environmental pollution for Hong Kong region as part of Post-Doctoral Research.

Cristina Rumbaitis del Rio, Regional Programme Manager ,Action on Climate Today

Cristina Rumbaitis del Rio is the Regional Programme manager for Action on Climate Today, a \$ 50 million UK AID supported climate change programme that seeks to mainstream climate change resilience into development planning and budgeting at the national and sub-national level in India, Pakistan, Nepal, Afghanistan and Bangladesh. As programme manager she manages an implementation team of approximately 40 people across the programme locations. Dr. Rumbaitis del Rio worked at The Rockefeller Foundation in New York from 2007-2015. As a Senior Associate Director, Dr. Rumbaitis del Rio helped develop the Foundation's initiatives regarding building resilience for poor and vulnerable people who will be affected by climate change, as well as initiatives related to water management, small scale fisheries, and preservation of ecosystems and the services they provide to humankind. Prior to joining the Foundation, Dr. Rumbaitis del Rio was a post-doctoral fellow conducting research on sustainable development at Columbia University's Earth Institute. She also did policy research for the United Nations Environmental Program, the U.S. Department of State, and other institutions. She was a recipient of the 1996 National Harry S. Truman Scholarship for Public Service and a Mass Media Fellow of the American Association for the Advancement Science. Rumbaitis del Rio received a Bachelor of Arts degree from Columbia University. She also has a Doctoral degree in Ecology from the University of Colorado. She currently lives in New Delhi, India.

Dr Mahendra Sethi, NIUA

Mahendra Sethi is a part of the research faculty and editor at the National Institute of Urban Affairs (NIUA), India. He has over a decade of experience in development research and practice. On leave from NIUA, Sethi was associated as a PhD Fellow with the United Nations University – Institute for the Advanced Study of Sustainability (UNU-IAS) in Sustainable Urban Futures Programme at Tokyo where his research explored the role of sustainability at the interface of global environmental change and local governance, with a focus on energy and emissions in developing countries. Prior to joining NIUA, he was involved in research studies, development consultancy, appraisals and formulation of urban, regional and environmental plans for national governments, statutory bodies, and international/ multilateral funding organizations, including the World Bank and WWF. Sethi has been a guest faculty in postgraduate courses and has supervised dissertation and thesis students. He has been invited as a jury member to international competitions and academic defences, and as reviewer in peer-reviewed publications. In addition to inquiries of environment and sustainability within the developing world, he has keen

research interest in green growth, environmental resources, low-carbon and energy planning, green habitat, megacities, sustainable transport, optimization models, climate resilience, evolution of settlements, and ecological development in mountain and hill areas. He is a recipient of the coveted international UNU-IAS PhD Fellowship, Ministry of Human Resource Development Scholarship and was offered a Liverpool University Scholarship.

7.2. Participants

Haitham Alkhalaf (Keio University)



I am Syrian, born and brought up in Aleppo city. I got my Bachelors' degree at Aleppo University on October 2004 as a Mechanical Engineer. After graduation, I worked for five years in several private companies and Tobacco public company as a Maintenance Engineer. In May 2010, I moved to Malaysia to get a masters' degree. I attended a masters' course on Building Services Engineering, where I carried out my thesis about the Earth-Air Heat Exchanger system in Malaysia's climate. The main reason to choose this department was because of my interest about sustainability science, especially within building sector. I got my masters' degree on August 2014. Thereafter, I applied for a doctoral degree in Global Environmental System Leaders (GESL) program - Media and Governance School of Keio University. Currently, I am in my second year and I am working on prediction model to estimate the energy consumption of commercial buildings in Japan, since it is a very critical point to get the sufficient data of energy consumption of different types of commercial or residential buildings. Therefore, the prediction model is expected to overcome this lack of data using some learning machine techniques. This model will enhance the ability of policy makers and other stakeholders to understand the current and future trend of Building energy consumption, either through improving the current regulation or through increasing the sharing of renewable energy. On the personal front, I am married with two kids. And I am looking to improve my skills in terms of sustainable development either in energy sector and other global issues.

Jihane Assaf (RMIT University)



Jihane has a background in electrical engineering and has graduated from the American University of Beirut in 2002. She worked in various roles in the electrical and power field in the Middle East. Jihane is interested in renewable energy systems, their hybridization, and economics, and she is currently doing her PhD in RMIT, Australia, on an integrated solar-hydrogen / solar-thermal combined heat and power system that can be applied for standalone household applications in remote areas.

Akanksha Balha (TERI University)

I am a PhD Scholar at TERI University, New Delhi, India. I have a background in Environmental Sciences and Geospatial tools (Remote Sensing and GIS). I have done projects on watershed prioritization to study soil erosion using derived Cartosat DEM at RRSC (C) ISRO, Nagpur and studied of impacts of climate change using Earth observational satellite data on ecosystem structure of Assam at RRSC (E), ISRO, Kolkata. I have also done an independent research work on Evaluation of Land Surface Temperature on temporal basis using Landsat TM data. I am highly inclined to pursue PhD research work in Water Resources and I would like to merge my background knowledge with PhD research.

Meenakshi Chaudhary (TERI University)

My name is Meenakshi Chaudhary and I am a PhD scholar at TERI University. I have done my Master's (MTech) from Banasthali Vidhyapeeth (2012-2014), wherein I have done masters' thesis at the IIRS (ISRO), Dehradun campus. The research topic was "Fuzzy Based Classification Algorithm Based on Kernel Method". I have also done my Masters' in Computer Applications from UP Technical University, India.

Saad Faruqui (TERI University)

My name is Saad Faruqui. I was born on 1st of August, 1989, at Dehradun, India. My father is Hakeem Ishrat Husain Faruqui and my mother is Ms. Nasreen Faruqui. My father is a doctor and has rich experience of more than 4 decades, and my mother is a house wife. I was born and brought up in an environment filled with scientific temperament. There was a great emphasis on morality, ethics, and values too. We were taught to check the veracity and authenticity of whatever we observe. I did my schooling from the Heritage School, with deep roots in academic proficiency and pedagogic wisdom. The school provided me a platform to sharpen my logical skills and lead to a pedantic journey in the realm of scientific paradigm. I developed a propensity for science and mathematics and was bedazzled by the wonder our books revealed. By the time, I reached high school in 2006, I was unequivocally convinced that my life would be dedicated to the world of science and technology. I finished high school from the Heritage School in 2006. Soon in 2008 I completed my intermediate from the Marshall School. In the same year, I joined U.T.U for pursuing B.Tech and got selected through AIEEE and graduated in Electrical &

Electronics Engineering (EEE) in 2012. Thereafter, I got selected for M.Tech in “control system” at GEU for two years, and successfully completed the course in 2014. I successfully presented research paper on “Transformerless FPGA controlled 2-stage isolated grid connected PV system” in IEEE conference at Bangalore in March, 2014 and won accolades from my professor and mentors. Besides, two research papers were also sent for publication to different journals. In the meantime, I also attended workshop on MatLab conducted by Mathworks. Presently, I am pursuing PhD program from TERI University in Solar Photovoltaic System.

Maja Gajic (RMIT University)



I am a PhD candidate from RMIT University, Melbourne Australia. I have a bachelor of electrical engineering and am currently undertaking a PhD in the field of concentrating solar energy. My primary research involves developing a low cost simple solar concentrator that can collect diffuse sunlight, called a luminescent solar concentrator (LSC). A luminescent solar concentrator is composed of a low cost acrylic plastic and dye. The plastic waveguide edges are surrounded by solar cells that generate electricity. I am also passionate about the role solar energy can play in developing countries and am involved with several not for profits. My work includes helping to design standalone PV systems and assisting with capacity building and delivering workshops. My secondary research interest is to do with low cost wind turbine manufacturing. Along with a Masters of Engineering student we are investigating 3D printing of wind turbine blades. A project I am supervising in collaboration with Engineers Without Borders (EWB) Australia. My interest in this area started after I completed an internship at a small wind manufacturing workshop in Auroville, Tamil Nadu, India. Since returning to Australia I have started a group called the RMIT Wind Turbine team. We are currently building a small open source wind turbine for use as an educational module.

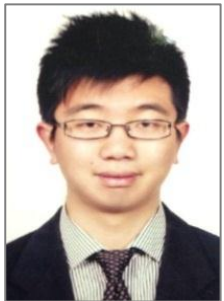
Ram Kumar Singh (TERI University)



I am a person, who takes care for others, and enjoys every moment of life. My academic background includes B.E. and PGD from India. At present, I am pursuing Ph.D. in the Department of Natural Resources, TERI University, India. My research is based on the field of food security and I am looking forward to be a part of ProSPER.Net school program.

Karishma Kashyap (RMIT University)

I am a Permanent Resident of Australia and currently enrolled in second year of Doctor of Philosophy programme at RMIT University, Melbourne. My field of study is Sustainability in Built Environment and research focus is on “closing the loop between occupant satisfaction and role of management to help Victorian academic institutions perform better in terms of overall energy efficiency. My research aims to provide sustainable solutions and best practice model for academic solutions with cooperation between the building users and management. I have successfully completed my Confirmation of Candidature in July 2015. I have completed my Bachelor’s and Master’s degree in Environmental Studies and Resource Management in India and was a University & College topper all three years in the Bachelor’s degree. I have previous work experience as Research Assistant and Intern at RMIT University and United Nations Industrial Development Organization (UNIDO).

Haixing Meng (Tongji University)

Mr. Meng now is pursuing his PhD study on Urban Planning at College of Architecture and Urban Planning, Tongji University, which started from September, 2015. He obtained his Bachelor Degree on Ecology from Ocean University of China in 2009, Master Degree on Systems Ecology in the State Key Laboratory of Estuarine and Coastal Research, East China Normal University in 2012. He worked at the Pacific Northwest National Laboratory under U.S. Department of Energy as a visiting scholar for 6 months on costal ecosystem research. Before his PhD study, he served as a programme coordinator at the UNEP-Tongji Institute of Environment for Sustainable Development. In 2013, he worked for a year at the Regional Office for Africa, UNEP headquarters for coordinating the UNEP-China-Africa Cooperation Programme on the Environment.

Mazlina Zaira Mohammad (Asian Institute of Technology)

Mazlina Zaira is a PhD Candidate in Construction, Engineering and Infrastructure Management (CEIM) at Asian Institute of Technology, Thailand. Her research topic is related to sustainable construction safety management. She graduated Diploma in Civil Engineering major in construction (2009), Bachelor in Civil Engineering major in environment (2011) and Master in Business Administration (MBA) fast track (2012) from Universiti Teknologi MARA (UiTM), Malaysia. She is under Young Lecturer Scheme in Construction Business and project Management

(CBPM) in the Faculty of Civil Engineering UiTM since 2013. Previously, she worked for Land Public Transport Commission Malaysia as a Special Project and Technology Executive. The big national project Bus Rapid Transit (BRT) was under her scope of work to monitor and engaged with the stakeholders. Currently active as a CIMB Wealth Advisor (CWA) representative, a freelance financial consultant specialty in unit trust investment since June 2014 in Malaysia. Her hobbies are travelling, photography editing, designing and cooking a healthy food.

Madhuri Nanda (TERI University)



I am an environmental professional who worked in the field of climate change, water, energy, environment impact assessments, ecological surveys, health & safety, social accountability and other related issues. While working on these areas, I gained experience with diverse organizations, viz. consulting agency, research organization, corporate entities and certification bodies over a period of 14 years. While mostly I worked in India, around 4 years of my professional experience was in Germany, working on climate change with a certification body. This was the most enriching experience for me, not just because of the exciting work, being the regional manager for South-East Asia, but also because of diverse cultural exposure with colleagues coming from different nationalities. Now a mother of two, I do not wish to take a full-time job, rather decided to undertake doctoral research on a subject that has been close to my heart for a long time, sustainability and food security. During this program, in addition to the course content, I look forward to meeting researchers with diverse background working in the field of sustainability.

Napapat Permpool (King Mongkut's University of Technology Thonburi)



Napapat Permpool was born in the Angthong province of Thailand where she also did her primary education. She later moved to Bangkok for further studies. She is currently a PhD student and researcher at the Joint Graduate School of Energy and Environment (JGSEE), King Mongkut's University of Technology Thonburi, Thailand. Her PhD research concerns assessing the feasibility of biofuels for substituting diesel in Thailand using a life cycle sustainability assessment approach. Her Masters' degree was also from JGSEE where the topic of her research was on the Implications on GHG emissions of land expansion for palm biodiesel production based on the energy policy target in Thailand. She has also been working on research projects related to sustainability and competitiveness of the palm oil and sugarcane industries of Thailand. She is an ardent

enthusiast of sustainability issues and would like to be an educator in the future. She is very keen to use the knowledge she gains from her research and apply it to real life situations and solve actual problems that afflict humankind. In her part time, she enjoys reading and practicing yoga. She is also a regular volunteer for local social activities.

Manisha Singh (TERI University)



I am a Ph.D. scholar in TERI University. I have done my Master's (M.Tech.) from Banasthali Vidhyapeeth (2012-2014) and during my masters, I have done my one year internship program (June 2013 - May 2014) from RRSC (ISRO), Kolkata. The thesis was satellite-based estimation of instantaneous radiative fluxes over continental USA and has been published in Journal of the Indian Society of Remote Sensing. I have completed my B.Tech. (Electronics & Communication) from Mangalayatan University and did my schooling from A.M.U (Aligarh Muslim University). I have also worked in a corporate sector in companies such as I-Energizer, Next – Sapience, HCL.

David Grant Sparks (Queensland University of Technology)



I am a researcher and PhD student based in Brisbane, Australia. Since 2009 I have worked with a research group called 'The Natural Edge Project' (TNEP) - a collaborative partnership for research, education, and policy development on innovation for sustainable development. TNEP's mission is to contribute to and succinctly communicate leading research, case studies, tools, policy and strategies for achieving sustainable development across government, business and civil society. Within this role I have contributed to a variety of projects across TNEP's research portfolio, including research projects on energy and water efficiency, commercial green buildings, and developing engineering education resources for teaching sustainability. I completed a Bachelor of Engineering (Environmental Engineering) in 2011 and was awarded First Class Honours and the University Medal. I made the decision to embark on a career in engineering so that I could contribute in some way to a sustainable transformation of our world. I am currently undertaking a PhD on rapidly transforming the building sector to emit less carbon. My PhD research explores how public procurement can be harnessed to facilitate the transition to a low-carbon development model. The research focuses particularly on the context of the building sector, which is responsible for enormous flows of energy and resources, contributing significantly to anthropogenic climate change and

other environmental pressures. Additionally, I tutor a variety of engineering and urban development courses at the Queensland University of Technology.

Ranaporn Tantiwechwuttikul (University of Tokyo)



Ranaporn obtained a B.Sc. (Hons.) in Chemistry from Chulalongkorn University where her early research was in organic chemistry (particularly in natural products). Right upon her graduation, she was selected as a Young Researcher from Thailand to participate in the 59th Meeting of Nobel Laureates (dedicated to Chemistry) in Lindau, Germany. This lifetime experience not only did broaden her view in applied chemistry, but also inspired her to pursue MSc in Sustainable Energy Futures at Imperial College London. For two consecutive years, Ranaporn was selected to join the Falling Walls Conference in Berlin, German (under the Einstein Young Scholars programme in 2010 and awarded an A.T. Kearney Scholarship for the Falling Walls Lab in 2011). During 2011 to 2013, she gained work experience from both multinational company (as an Analyst in Growth Project Management, PTT Global Chemical PCL) and local business (as a Management Trainee, Suthep Motor Sales 1993 Co., Ltd.) with similar roles towards companies' sustainable growth. Impressed with an experience from the 39th Ship for Southeast Asian Youth Programme (SSEAYP) in 2012, Ranaporn decided to further her PhD study under the Japanese Government (Monbukagakusho: MEXT) Scholarship. Currently, she is enrolled in the Graduate Program of Sustainability Science – Global Leadership Initiative (GPSS-GLI), University of Tokyo.

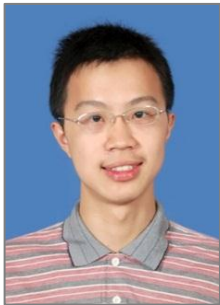
Panu Thainiramit (Prince of Songkla University)



Panu Thainiramit was born in Songkhla, Thailand, 1982. He graduated from Walailak University, Nakorn-sri-thammarat, Thailand, in 2008 with a degree in Computer Engineering. In 2009 to 2010, he was a research assistant at NANOTEC Center of Excellence, Prince of Songkla, Thailand. In 2012, he received the M.S. degree in Physics at Prince of Songkla University, Songkhla, Thailand, with a research topic of Energy Harvesting Using Piezoelectric Method. In 2012 to present, he is currently working at Center of Excellence in Nanotechnology for Energy (CENE), Prince of Songkla University, Songkhla, Thailand, as a research assistant and concurrently studying the Ph.D. in Environmental Management in Prince of Songkla University, Songkhla, Thailand. His research topic is Energy Harvesting for Remote Monitoring of Environmental Parameters. His research interests are in the field of Ambience-vibration energy harvesting (AVEH), electrical circuit for energy management,

piezoelectric materials and properties for harvested structure in AVEH, wireless-sensor network for environmental management, the modelling of AVEH system, and low-power electrical devices for environment parameters and self-power system monitoring.

Rui Wu (Institute of Applied Ecology - Chinese Academy of Sciences)



Rui Wu is a second-year PhD student of Chinese Academy of Sciences (CAS). He graduated from Nanjing Normal University in 2012. He is currently studying in ecology (known as industrial ecology) at Institute of Applied Ecology, CAS. He spent his first year studying master degree's courses including ecology, environmental economics, resource economics and etc. at University of Chinese Academy of Sciences in Beijing. Since 2013, he has been working for Industrial Ecology and Circular Economy Center as a research assistant. He participated in a research project about functional transition of brownfield in Tiexi District, Shenyang and did some field research. In 2014–2015, he visited Japan 3 times for academic exchange with researchers from National Institute for Environmental Studies. He also attended 10th and 11th Asia-Pacific Eco-Business Forum and visited the eco-industrial park in Kawasaki. Thanks to these activities he improved his communication and cooperation skills. He specializes in consumption-based CO₂ emission accounting and related emission reduction policy and is skilled in input-output analysis and geographic information system (GIS). He has published several journal papers about this topic, e.g., CO₂ emissions embodied in China-Japan trade. In addition to his jobs and research tasks, he is interested in doing sports such as basketball and tennis and also likes taking photos in leisure time.



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