

CREATING INNOVATIVE SOLUTIONS FOR A SUSTAINABLE FUTURE



CLIMATE AND AIR



ENERGY



INDUSTRIAL
BIOTECHNOLOGY



GREEN PORTS
AND SHIPPING



SOCIAL TRANSFORMATION
AND STRATEGIC ALLIANCE



SUSTAINABLE
AGRICULTURE



SUSTAINABLE
INFRASTRUCTURE



WASTE, WATER, AND
NATURAL RESOURCES



THE ENERGY AND
RESOURCES INSTITUTE

Creating Innovative Solutions for a Sustainable Future

WHO WE ARE

The Energy and Resources Institute (TERI) is an independent, not-for-profit, knowledge-driven institute dedicated to advancing transition towards a cleaner and sustainable planet.

The Institute has been steadfastly pursuing the path of ecological sustainability from a time when 'climate change' was largely an unknown entity. Founded in 1974 by the visionary CEO of TATA Chemicals, Mr Darbari Seth, TERI broadened its reach from the field of energy to environment, agriculture, biotechnology, climate change, forestry, transport, habitat, and a whole range of sustainable development issues.

TERI contributes to society with its cutting-edge research in the field of biotechnology, renewable energy technologies, and innovative solutions in the water and forestry sector, design and rating of buildings for their carbon footprint and resource use efficiency, and a range of policy-based research for corporate and government agencies on issues such as climate change and other subjects at the local, national, and international level.

In a bid to prepare our future citizenry towards environmentally conscious behaviour, TERI engages with youth in co-creating evidence-based learnings and empower them to combat climate change.

Today, TERI is an organization with over 700+ professionals, who are working together to achieve sustainable development and environmental governance.

TERI in Action

In its 50 years of existence, TERI's innovative solutions and initiatives have built an enduring legacy. Some of our key accomplishments include:

Policy to Ensure a Greener India

Nationally, TERI's influence on government policy making is evident. The Institute played an active role in drafting major policy documents like the National Environmental Policy for the Ministry of Environment and Forests (now Ministry of Environment, Forest and Climate Change).

TERI's work on green federalism was used by the 13th Finance Commission of India to introduce sustainability criteria in fiscal transfers from the centre to the states. TERI worked on India's Environment Policy, 2006 and

WORK WE DO

With a global vision and a local focus, TERI makes sure its on-field research gets translated into technology products, technical services, as well as policy advisory and outreach for the common good.

To ensure sustainable development reaches different regions of India, the Institute established regional centres and campuses in Gurugram, Bengaluru, Guwahati, Mumbai, Panaji, and Nainital.

We take immense pride in our exemplary work which gained attention and enormous support from independent funding agencies, bilateral and multilateral donors, and various government bodies.

Some of the key TERI programmes and areas include:

- Energy
- Climate Change and Air Quality
- Industrial Biotechnology
- Waste, Water and Natural Resources
- Sustainable Infrastructure
- Sustainable Agriculture
- Green Shipping
- Social Transformation and Strategic Alliance
- Council for Business Sustainability
- Centre for Sustainable Development Research and Leadership

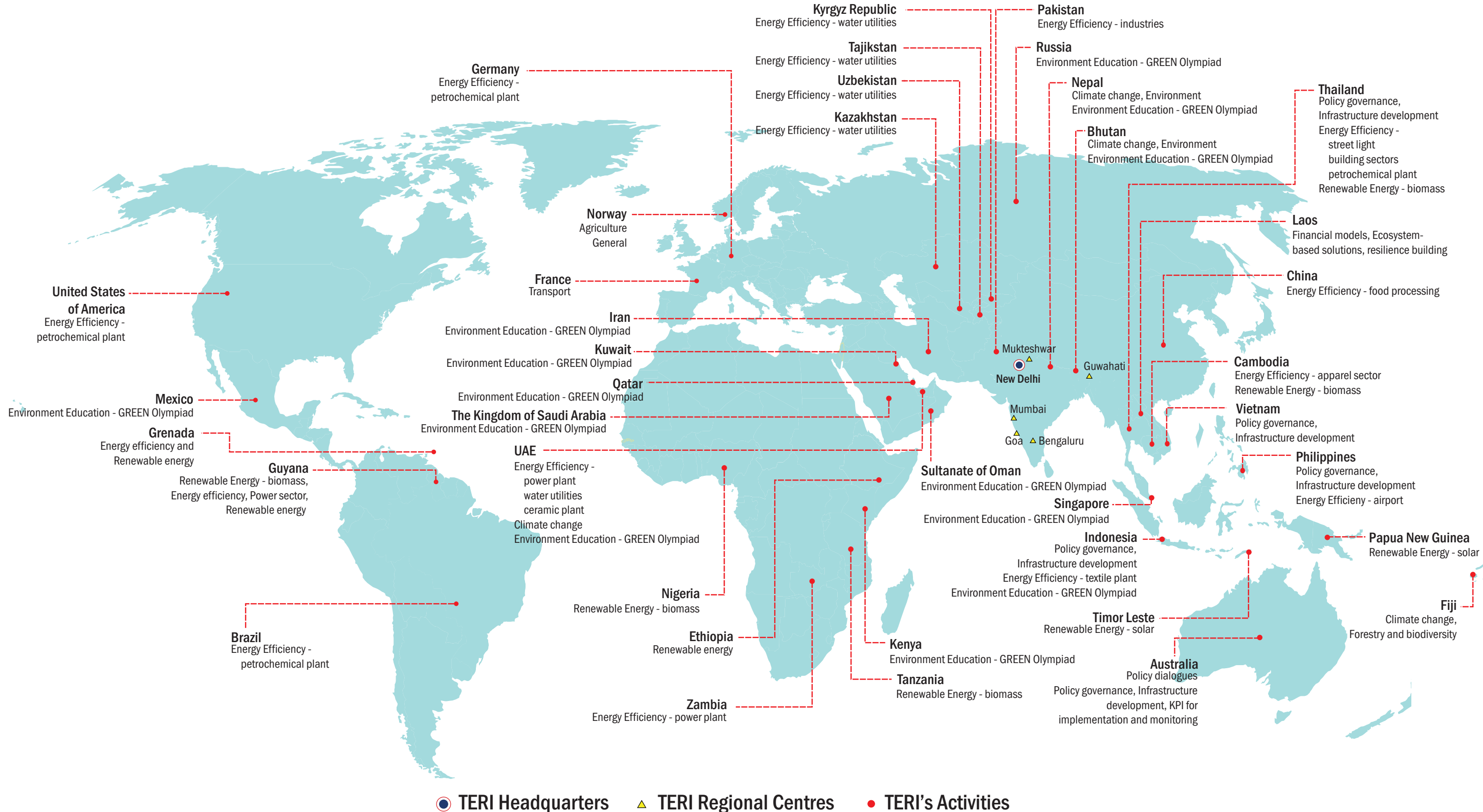
provided the necessary inputs for India's negotiating position at the United Nations Framework Convention on Climate Change, Convention on Biological Diversity, and World Trade Organization.

TERI has also provided inputs to India's Integrated Energy Policy, formulating the National Action Plan on Climate Change, and has been actively engaged in the policy discourse on vehicular standards and air pollution.

TERI initiated the journey towards green budgeting in 2012, when it entered an MoU with the state of Punjab. Building on the framework developed for Punjab, TERI with local partners, played a pivotal role in assisting Bihar and Puducherry in embracing green budgeting through capacity building, stakeholder consultations, and a participatory approach to budget analysis.

Our growing commitment to a sustainable future

Research and outreach activities in over 40 countries



Institute of Energy Transition (IoET)

TERI is, particularly, proud to set up Institute of Energy Transition (IoET) in Hyderabad, Telangana with support from the Ministry of Power and the Ministry of New & Renewable Energy (MNRE), Government of India.

The IoET, under TERI's leadership, aims to pioneer scalable solutions for decarbonization, energy efficiency, and achieving net-zero emissions. Its mission is to become a leading force in South Asia by driving interdisciplinary research and fostering collaborations with industry, academia, government, and civil society for a sustainable energy future

Resource Efficiency

Over the years, TERI has undertaken numerous policy research and consultancy assignments for the government, international organizations, and industry on the benefits assessment of resource efficiency in key economic sectors, sustainability and security implications of trade in natural resources and the governance of natural resource revenues, among others.

National Centre of Excellence on Green Ports and Shipping

The National Centre of Excellence on Green Ports and Shipping (NCoEGPS) is a unique partnership between the Ministry of Ports, Shipping and Waterways (MoPSW), Government of India, and TERI that was constituted in November 2022.

The Centre is supported by major ports in India including—(i) Cochin Shipyard Limited, (ii) Deendayal Port Authority, (iii) Paradip Port Authority, (iv) V.O. Chidambaranar Port Authority.

The Centre undertakes various research activities around policy and regulation supporting green ports, green shipping and blue economy, alternate technologies and Detailed Project Reports (DPRs) that will foster carbon neutrality and circular economy (CE) in shipping sector in India.

Crusading against Climate Change

Working on climate change from the perspective of a developing country, TERI is playing a major role at the Conference of the Parties (CoP) to the UN Framework Convention on Climate Change (UNFCCC).

The Institute has undertaken research to design policies in the face of an uncertain future and is exploring the role of market mechanisms, as urgency for adaptation to climate change increases.

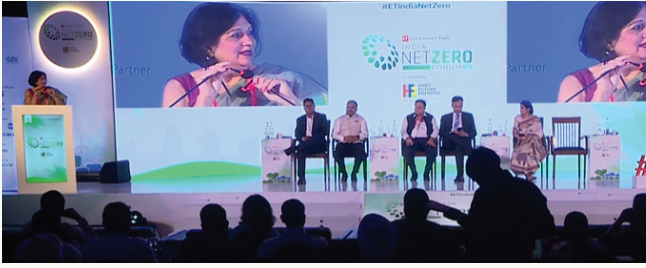
Ensuring Energy Access

Through its global campaign, Lighting a Billion Lives (LaBL), TERI made concerted efforts towards addressing the challenge of providing clean lighting to energy-starved populations by adopting a localized bottom-up approach. The initiative reached nearly 4.5 million people with poor or no access to energy services, across 24 states in India and 12 countries in South Asia and Africa.

Additionally, the institute supported by the IKEA Foundation, has undertaken a unique multi-year programme, 'Sustainable energy in Micro-enterprises for Income & Livelihood Enhancement (SMILE)', with the principal objective to promote the use of renewable energy and energy-efficient technologies in micro-enterprise clusters for improving productivity and enhancing the income of entrepreneurs.



► Empowering weavers in micro-enterprise clusters through income and livelihood generation



► Dr Vibha Dhawan, Director General, TERI delivering an address at ET India Net-zero Forum 2024

TADOX® for Swachh Bharat Mission

Driven by the ambition to craft tailor-made solutions for various industries for wastewater treatment, TERI researchers have done rigorous assessment and analysis to not only reduce wastewater issues but also help industries comply with government's discharge regulations and norms.

The hard work resulted in our patented technology, TADOX® (TERI's Advanced Oxidation Technology) that treats municipal and polluted industrial wastewater having 89 issues of high colour, COD (chemical oxygen demand), BOD (biological oxygen demand) and dissolved organics which cause environmental and health hazards.

The treated water quality is also cost effective, reducing 30–40% capital expenditure (CAPEX) and operational expenditure (OPEX), fostering a win-win situation for both businesses and the environment

Developing Integrated Energy–Economy–Environment Modelling Frameworks

TERI develops and uses a suite of tools, frameworks and models to analyse the interlinkages across sectors and resources at different levels of spatial disaggregation.

Apart from an integrated national-level energy demand–supply optimization model (MARKAL), Input–Output modelling frameworks, computable general equilibrium models, air quality models, spatially disaggregated soil and water analysis models, and regionally downscaled climate models are deployed to inform policy solutions.

Nanofertilizers for Climate-smart Agriculture

Realizing the need of 'nano intervention in agriculture', TERI with support of the Department of Biotechnology, Government of India, developed biogenic nanofertilizers. These nanofertilizers are extremely efficient and a great substitute for conventional fertilizers.

Till date, TERI has developed three nanofertilizers— nano-Urea (from conventional urea), nano-DAP (from conventional DAP), and nano-Phosphorus (from low-grade rock phosphate).

GRIHA for Sustainable Buildings

GRIHA was incubated as an indigenous green building evaluation system exclusively tailored to the Indian climatic and geographical contexts. Conceptualized by TERI, GRIHA was adopted by the Ministry of New and Renewable Energy in 2007 as the national green building rating system for the country.

Some of the iconic projects associated with GRIHA in India and abroad include the Central Vista project, the Supreme Court of India, and Bharat Mandapam.

'Oilzapper' Technology

With the state-of-art pilot scale fermentation facilities, TERI has successfully developed an indigenous sustainable bioremediation technology, 'Oilzapper'



► The new Parliament building, under India's Central Vista Redevelopment Project, is registered with GRIHA and aspires to achieve a 5-star GRIHA rating



► *Cleaning oil spills and sludge by TERI's patented technology, Oilzapper*

for broad-scale implication in cleaning up oil spills and treatment of oily sludge.

Oilzapper has been successfully used by various oil companies across India as well as abroad.

More than one million tonnes of oil-contaminated soil have been treated by Oilzapper till date.

Integrated Production of Algal Biofuels and Biocommodities

Since climate change and sustainable development is at the core of TERI's vision and activities, it began research on renewable transport fuels.

The institute collaborated with organizations such as Indian Agricultural Research Institute (IARI), Indian Institute of Technology Guwahati and Transtech Green Power Ltd, for this initiative. The project started in 2018, and marine (isolated and domesticated) production started in 2019 onwards in the 100,000-litre scale specially designed sunlight distributed algal photobioreactor, commissioned at TERI Mumbai, Airoli.

Carbon Finance for Sustainable Livelihoods

TERI is at the forefront of integrating carbon finance with sustainable livelihoods, working closely with farmers and forest-dependent communities to generate dual benefits—environmental protection and socio-economic upliftment.

TERI is currently implementing about 40 projects in the fields of ARR and REDD+ carbon finance within the AFOLU sector. These projects promote biodiversity conservation and empower local communities to sustainably utilize natural resources.

Creating a Network of Environmentally Conscious Youth

TERI's work with students and youth involves enhancement of knowledge and skills, leading to best sustainability driven practices. We cater to over 3.5 million children and youth through our projects and activities related to Education for Sustainable



► *Students appearing for GREEN Olympiad, TERI's annual written examination on environment and sustainable development*

Development (ESD). Currently, we cover all states and UTs of India and 32 other countries at a global scale.

One of our leading projects, GREEN Olympiad, is endorsed by Ministry of Education (MoE), Ministry of Environment, Forest and Climate Change (MoEFCC), and University Grants Commission (UGC). The Olympiad enriches interdisciplinary knowledge, skills, and eco-values necessary for achieving sustainable development.

Our International Collaboration

TERI, India and Deakin University, Australia are actively engaged in nanotechnology-based research on agriculture, material science, food storage and safety. Considering the importance and relevance of joint research platform, TERI-Deakin Nanobiotechnology Centre (TDNBC), Gurugram, India and Institute of Frontier Materials (IFM), Deakin University, Australia, in association with the Department of Biotechnology, Government of India, has created "DBT -TDNBC - DEAKIN – Research Network Across continents for learning and innovation (DTD-RNA)".

The network aims to serve as a training and capacity building hub to foster and facilitate multi-disciplinary collaborative research in nanotechnology.

Our Academic Establishment

The TERI School of Advanced Studies is a deemed university that offers not only world-class education, but an environment that enables its students to develop fresh perspectives on their subjects of study.

Our Annual Flagship Event: World Sustainable Development Summit

The World Sustainable Development Summit (WSDS) is the annual flagship multistakeholder event organized by TERI. Instituted in 2001, the Summit series has a legacy of over two decades for making sustainable development a globally shared goal.

We Are Connecting Communities: Tune in to Kumaon Vani

While working with the farming community in the Kumaon region, TERI realized a lack of access to information, especially in the remote parts. In March 2010, Kumaon Vani, a community radio station (90.4 MHz), was set up in the Supi village of Nainital district in Uttarakhand, India, imparting knowledge to locals.

Our Initiative for Farmers in Supi Village

Since 2003, Supi village has been home to TERI's initiative TRISHA (TERI's Research Initiative at Supi for Himalayan Advancement). It has been supporting the local farmers in the livelihood generation through the use of sustainable agricultural practices.

It resulted in the brand 'Supi Sugandh' which represents pure and natural products grown in several villages and processed by local farmers. These products are the result of this link between TRISHA and the local farmers around Supi. TERI has provided continuous



► Launch of 'TERI's Solutions for Sustainable Development' during WSWS 2024

guidance and supervision for skill development of these communities. It also facilitates the market linkages for farmers by arranging a buy-back of the produce.

What We Promise

For the last 50 years, TERI's founders and members have worked tirelessly to push the discourse towards a just, equitable, and climate-friendly world.

As a premier knowledge institute, TERI is committed to resolving environmental challenges and keep the focus on sustainable development with a never dying hope that more will join in, too.

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