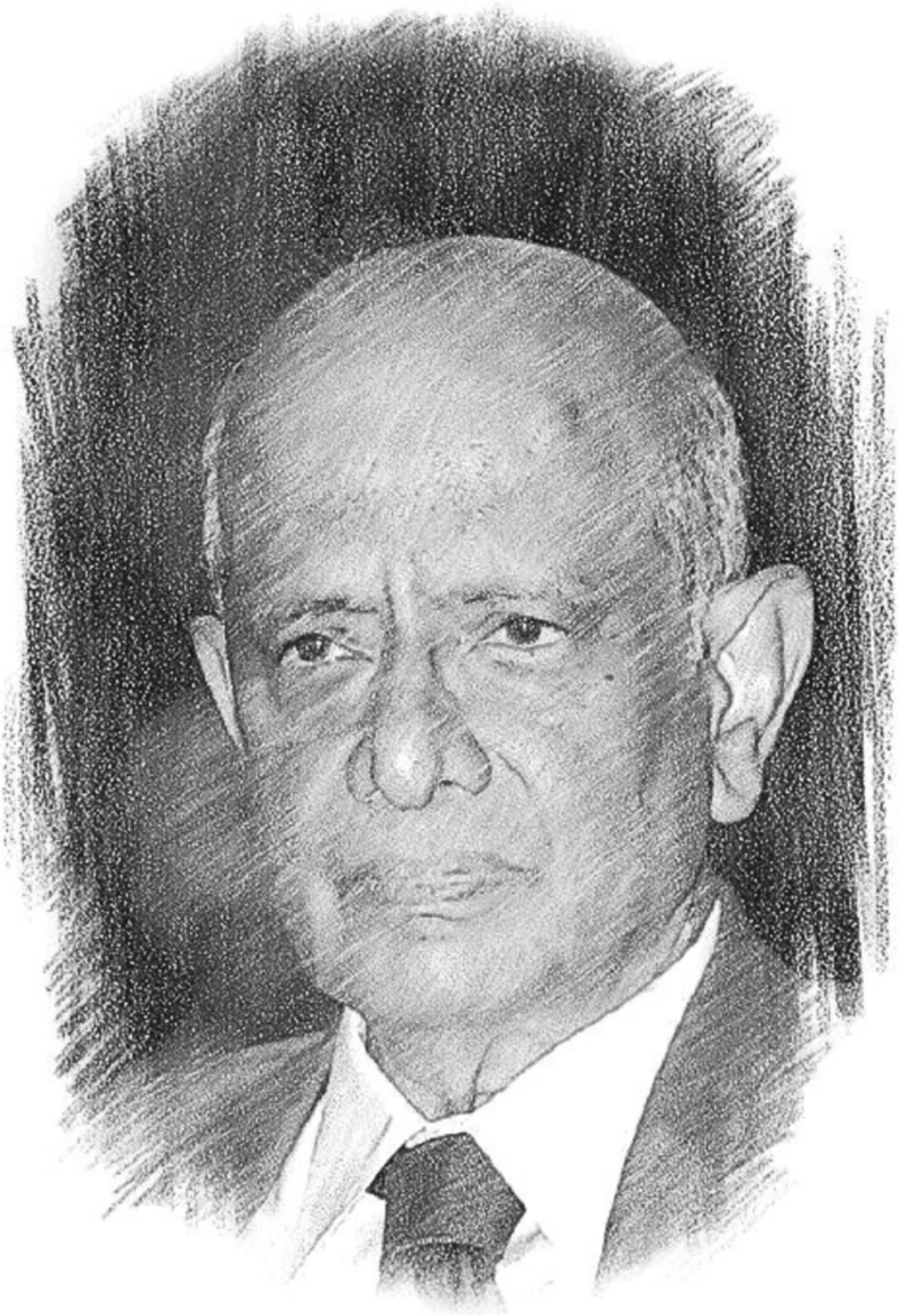
CSTEP
CENTRE FOR STUDY OF SCIENCE, TECHNOLOGY & POLICY


# ANNUAL REPORT 2023-24

# Catalyst for Change

## Annual Report 2023-24

Center for Study of Science, Technology and Policy



# In Memorium: Dr V S Arunachalam

Capturing the life and times of Dr V S Arunachalam (1935 to 2023)

# Note From the Chairman

**Dr Dipankar Banerjee**
Chairman, CSTEP

To our great sorrow, we lost our Founder-Chairman, Dr V S Arunachalam, this past year. CSTEP is a tribute to his extraordinary vision and institution-building capabilities. We endeavour to keep alive the spirit of innovation and forward thinking that characterised every phase of his life.

We are consolidating our work in areas such as clean energy transition, climate mitigation and adaptation, clean air for all, and digital transformation to meet the grand challenges of our time and ensure a sustainable and secure future. As we do so, we find our efforts rewarded with ever-increasing demands of inputs from those who shape our policies based on the expertise and reputation we have built in these areas. We hope to take forward several initiatives underlying our work in education, carry out in-depth analysis, and enhance public outreach in explaining the potential impact of emerging science- and technology-based systems on our society. We continue to examine all aspects of our organisational structure and functions to achieve effective performance.

As our organisation grows, we have made changes in our governance structure by diversifying our board. We welcomed Shri Ashank Desai and Dr Harini Nagendra. From the bottom of our hearts, we thank Shri Praful Anubhai, a founder board member who has contributed immensely to CSTEP for almost a decade but has now decided to call it a day. We have also changed our ownership structure to a trust, and we are delighted that Shri Anubhai, Prof. V S Chandrasekharan, and Mr Sohail Shikari will continue to be associated with us as trustees.

Let me end by quoting Dr Arunachalam's vision for CSTEP: 'Shape India's development story by bringing science and technology to the heart of policymaking'.


Punjab
Uttar Pradesh
Assam
Jharkhand
Madhya Pradesh
Chattisgarh
Maharashtra
Andhra
Pradesh
Karnataka
Pondicherry
Tamil Nadu
Kerala
Our footprint in 2023–24

# From the ED's Desk

**Dr Jai Asundi**
Executive Director,
CSTEP

The passing of our Founder-Chairman, Dr V S Arunachalam, last year, has made us reflect on his unique vision for CSTEP. He always believed that India should bring more science and evidence into policy- and decision-making, which would drive development and ensure inclusivity. He has left behind a legacy that we strive to carry forward.

Our decision to work on clean energy transition, clean air for all, and sustainable and secure future for all stands largely vindicated as they remain the dominant challenges of our time. Though the uncertainties associated with the challenges are many, there are myriad solutions. We continue to be the catalyst for change by conducting analysis, building tools to support decision-making, and developing innovative approaches to problems. We have come to realise that there is no substitute for high-quality analysis and communication. Research must be impartial, objective, data-driven, peer-reviewed, and it must stand up to public scrutiny. Communication needs to be concise, clear, and crisp.

By making sure our work is supported by a diverse group of funders, we uphold our independence, free from any agenda. Additionally, because of the nature of our work, it is important that we adopt an ecosystem approach. We work with partners from academia, CSOs, industry, and the government to ensure that our work is not only vetted by peers but also adopted by entities downstream who are more likely to implement our ideas. This ensures we always keep the impact on society in our minds.

Internally, we are preparing for the future by creating an empowered mid-level leadership who has a say in the future of the organisation. All our mid-level leaders underwent exhaustive leadership training last year. We have also established robust internal processes to run the organisation smoothly and propel it for growth. Through these efforts, we are sure that the future leaders emerging from CSTEP will be bold, confident, and capable of using their voices to create impact.

All these efforts would not have been possible without the collective will of our team. I must appreciate Mr Munish Sapra, Director, Strategy and Corpus Generation, and the Management Committee for putting the proverbial shoulder to the wheel. I would also like to thank our new Chairman, Dr Dipankar Banerjee, for his wise counsel and support as we build CSTEP to become the institution Dr Arunachalam envisioned.

# Board of Directors

Dr Dipankar Banerjee
Padma Shri, Chairman,
CSTEP

Shri Suresh Prabhu
Former Member of Parliament
and PM's Sherpa to G7 & G20
Summits; Former Minister of
Environment & Forests,
Government of India

Shri Prafull Anubhai
Educationist and
Corporate Advisor

Mr Rajat Gupta
Senior Partner,
McKinsey & Company

Ms Soumya Rajan
Founder, MD & CEO,
Waterfield Advisors

Dr Harini Nagendra
Director of Research Centre,
Azim Premji University

Shri Ashank Desai
Founder and
Chairman, Mastek

Dr Jai Asundi
Executive Director,
CSTEP

# Our Supporters

Rohini Nilekani Philanthropies

Rainmatter Foundation

Oak Foundation

Bloomberg Philanthropies

Open Philanthropy

International Sustainable Energy Foundation

Clean Air Task Force

Google LLC

Department of Science & Technology

International Institute for Sustainable Development

The Nature Conservancy

Clean Air Fund

Bill & Melinda Gates Foundation

United Nations Development Programme

Shakti Sustainable Energy Foundation

Tata Trusts

Narotam Sekhsaria Foundation

Shri Sivasubramaniya Nadar Educational and Charitable Trust

WIPRO

Agence Française de Développement

British High Commission

Children's Investment Fund Foundation

Climate Parliament

Environmental Defense Fund

European Climate Foundation

European Union

German Corporation for International Cooperation (GIZ)

Good Energies Foundation

IBM

International Development Research Centre

MacArthur Foundation

Next Generation Infrastructures

Overseas Development Institute

SED Fund

Sequoia Climate Foundation

The Global Green Growth Institute

The World Bank

United Nations Democracy Fund

United States-India Educational Foundation

William and Flora Hewlett Foundation

Incorporated under Section 25 of the Companies Act, 1956 (equivalent to Section 8 under Companies Act 2013)

Registered under the Foreign Contribution (Regulation) Act, 2010

Registered as a wholly charitable trust under Section 12A(a) of the Income Tax Act, 1961

# Our Collaborations

Asian Institute of Technology

Atria Power

BRAC University

Carnegie Mellon University

Centre for Policy Dialogue, Bangladesh

CEPT University

Clean Air Task Force

CEEW

The Center for Strategic and International Studies

Ecole Polytechnique Federale de Lausanne

EMPRI

Forge Accelerator, Coimbatore

Indian Institute of Science

IIT Bombay

IIT Guwahati

IIT Kanpur

IIT Mandi

Institute for Social and Economic Change

Institute for Social and Environmental Transition-Nepal

Integrated Research and Action for Development

International Institute of Information Technology Bangalore

Karnataka State Pollution Control Board

M.S. Ramaiah University of Applied Sciences

Pacific Northwest National Laboratory

PLR Chambers

RAND Corporation

Royal Society of Netherlands

Shell India

St. John's Institutions

Tata Consulting Engineers

TERI

The University of British Columbia

The University of Texas

University of Agricultural Sciences, Bangalore

University of California, Berkeley

University of Pennsylvania

University of Washington

Urban Emissions

Vellore Institute of Technology

Approved under Section 80G of the Income Tax Act, 1961

Recognised as a Scientific and Industrial Research Organization (SIRO) by the Ministry of Science and Technology


INDIA CLEAN AIR SUMMIT (ICAS) 2023
#ICAS 2023
5th Edition
INDIA CLEAN AIR SUMMIT 2023
Clean Air for Sustainable Development and Mission LiFE
23-25 August, 2023 | Venue: Radisson Blu Atria, Bengaluru


# Air Quality

Since the establishment of the Centre for Air Pollution Studies (CAPS) at CSTEP in 2018, our work in the realm of air pollution control has been driving change across the country. In July 2023, CAPS was expanded into the new Air Quality sector that now works on three specialised sub-areas: policy development and assessment, atmospheric composition modelling, and atmospheric composition observations.

The sector's work towards clean air for all has brought about real change on the ground. While the scientific evidence gathered on identifying local sources of air pollution is informing city-level Clean Air Action Plans (CAAPs) across the country, the India Clean Air Summit (ICAS), the flagship event that stimulates purposeful dialogue and collaborative action, has entered its sixth year. ICAS is recognised today as India's premier event on air pollution, bringing together scientists, community-led organisations, policymakers, and influencers to leverage the latest scientific research and technology to better policies and actions for reducing air pollution.

Over the years, CSTEP has developed high-resolution emission inventories for over 80 non-attainment and million-plus cities, which has helped us identify targeted air pollution reduction measures. Our research uses air quality modelling and techno-economic assessments, along with a mix of monitoring and measurement technologies such as low-cost sensors, mobile monitoring, and satellite mapping. This has enabled us to make comprehensive recommendations to decision-makers for preparing state- and city-level CAAPs.

Recognising the opportunities presented by sensor technology, we have set up an air pollution lab at the CSTEP office in Bengaluru to test and calibrate low-cost sensors. We are working with government and industry bodies to develop protocols for standardising sensors to ensure greater accuracy in the collection and use of data from low-cost sensors.

Moving beyond the world of $PM_{2.5}$, our studies are also targeting super pollutants such as black carbon and methane. These studies can be used at multiple levels of governance and in industries to improve air quality and reduce climate footprint.

# Impact Story

CSTEP's work on assessing the performance of low-cost sensors manufactured in India is being used by Google for Project Air View. As part of the research, CSTEP tested the performance of 50 air sensors from six Indian manufacturers by comparing their data against that of reference-grade monitors. The tests were conducted over a period of 6 weeks at the India Sensor Evaluation and Training Center (Indi-SET) set up at CSTEP. The study looked beyond $PM_{2.5}$ measurements to trace gases as well. Using the data from this study, we developed our own calibration model, employing machine learning algorithms to improve the accuracy of the sensor data. We also established a multi-pollutant low-cost sensor network across the city of Bengaluru, informed by satellite estimates of surface air pollution, land-use attributes, and identification of various point-of-interest areas. The data from the sensors is shared with Google every 15 minutes, which is then used to provide almost real-time information on pollution levels in the city.

**197**
**Media mentions**

**8** Articles

**3**
**Capacity-building sessions**

**13**
**Publications**

**4** Events


INDIA CLEAN AIR SUMMIT (ICAS) 2023
#ICAS 2023
5th Edition
INDIA CLEAN AIR SUMMIT 2023
Clean Air for Sustainable Development and Mission LiFE
23-25 August, 2023 | Venue: Radisson Blu Atria, Bengaluru
Summary of the Day and Conclusion
5th Edition
INDIA CLEAN AIR SUMMIT 2023


MEZUS 20
NOx Analyzer
NO 10.0
NO2 1.9
NOx 11.9
KIMTEK


STEP
ab State-Level
erence on
ollution Governance
Meridien Amritsar, Punjab


STEP
CASE FOR AC
LACK CARBON


AIRLAB

# Energy and Power

Energy and power is one of the first areas of research that CSTEP embarked upon way back in 2009. Over the years, the sector has evolved into its current form in response to India's developmental and climate needs and challenges. The sector seeks to address the grand challenge of clean energy transition. Though we have been working on energy issues since 2009, the sector took its current form only in 2019.

One of the earliest activities that we undertook was related to the Perform Achieve and Trade scheme of the Bureau of Energy Efficiency. Simultaneously, we explored new photovoltaic and concentrating solar power technologies for the Indian and American contexts under the SERIIUS project, in collaboration with IIT Bombay and IISc, Bengaluru. Over time, our portfolio has expanded and our network of partners has grown.

Learnings from many projects have led us to recognise the importance of mini-grids. However, far-reaching changes such as the integration of various grids into one single national grid, 100% village electrification, and utility-scale renewable energy projects across the country have turned our attention to grid planning. More and more power from renewables will need a sturdy, flexible, and efficiently managed grid. In this scenario, we have started focusing on elements that will make the grid robust, such as storage (batteries or pumped hydro). This is achieved through intricate modelling of the grid and playing out scenarios that may emerge.

We have also invested heavily in technologies such as rooftop solar—mapping of rooftops across cities, calculating the potential of power generation, and identifying the orientation of the panels. When the PM Surya Ghar Muft Bijli Yojana was announced earlier this year, we were already well equipped and uniquely placed to meet the challenge.

As more states focus on meeting India's commitment to developing 500 GW of non-fossil capacity by 2030, we have been actively collaborating with many states, including Karnataka, Andhra Pradesh, and Kerala, to devise their renewable energy plans for the future. It is important to note that when we approached state power departments to prepare a plan for 2030, many were keen on taking it a step further and planning for 2036, 2040, and beyond, according to their vision.

> ***The research and technical guidance provided by the Center for Study of Science, Technology and Policy has been helping the Energy Management Centre of the Government of Kerala's in shaping its policies towards Kerala's green energy transition.***
>
> – Energy Management Centre, Government of Kerala

# Impact Story

CSTEP is assisting the Kerala state government in its plans to become a net-zero state by 2050. Exploring ways to enable a higher uptake of renewable energy (RE) in the state, our study put forth an energy transition roadmap for Kerala. The key recommendations relate to utilising decentralised RE through community-centric rooftop photovoltaic systems, boosting RE deployment through hybrid technologies, and strategising the development of 4 GW of energy storage systems. The study also advises the state to develop programmes that reward citizens for efficiency in energy consumption and incentivise energy-efficient appliances and home upgrades. After the launch of the report, CSTEP was invited to join the sub-committee that is working on Kerala's Energy Policy and is now also a knowledge partner for the Energy Management Centre.

**21** Articles

**128**
Media mentions

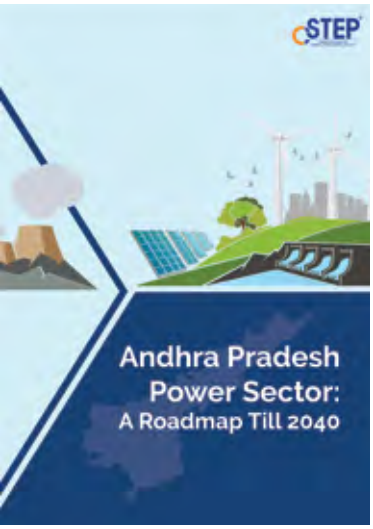
**9**
Publications

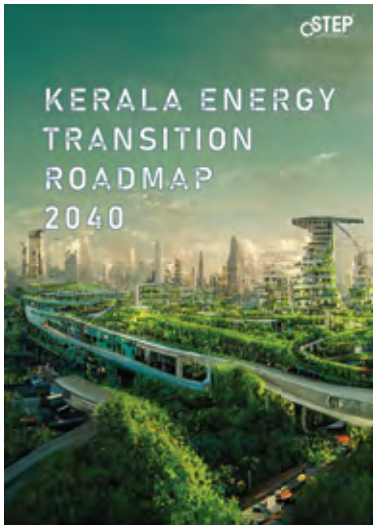
**1**
Capacity-building session

**1** Event


NATIONAL
WORKSHOP
ON AGRIPV
STATUS AND
OPPORTUNITIES
IN INDIA
March 20, 2024
Lecture Hall,
NASC Complex,


Renewable Power-to-X Training
on Green Hydrogen and
Derivatives in India


STEP
Andhra Pradesh
Power Sector:
A Roadmap Till 2040


STEP
KERALA ENERGY
TRANSITION
ROADMAP
2040


SEW
Trilliant
GE VERNOVA
NEDO


SESSION CHAIR

# Climate, Environment and Sustainability

The sector remains dedicated to advancing empirical policymaking in the areas of climate change mitigation, adaptation, and circular economy.

The mitigation team has developed SAFARI, or the Sustainable Alternative Futures for India model. Grounded in systems thinking, the model simulates long-term decarbonisation scenarios, in line with India-specific Sustainable Development Goals (SDGs) benchmarks. Notably, SAFARI is one of the youngest models included in the IPCC Assessment Report (AR6) database. Moreover, through economy-wide modelling and sectoral deep dives into sectors such as buildings, transport, and agriculture, SAFARI is furthering the importance of systems thinking in long-term forecasting and informing the policy discourse.

The adaptation team is actively engaged in assessing changes in climate at the district level. This analysis has been used to build awareness on the need for mainstreaming climate information into planning across the line departments of Karnataka. For evaluating potential climate risks, extreme climate/hazard information was combined with socio-economic and demographic factors to represent vulnerability and biophysical factors to represent exposure. This approach was applied in examining climate risks to renewable energy assets in four Indian states. Additionally, the team's pioneering work in West Bengal—that culminated in the development of a climate co-benefits framework—has established the importance of measuring the climate co-benefits of development programmes such as the Mahatma Gandhi National Rural Employment Guarantee Scheme. Through collaborative engagement with State Climate Change Cells and organisations such as the Environmental Management and Policy Research Institute, Centre for Environment Education, Bengaluru Sustainability Forum, and Climate Asia, the team has conducted several workshops and training programmes to build awareness and capacity for integrating climate information into decision-making.

The growing recognition of the role circular economy can play in fostering sustainability led us to form our sustainability team. We have developed a PAN-India recycling framework for end-of-life photovoltaic (PV) waste, which is being disseminated to industry partners for uptake, in collaboration with the National Solar Energy Federation of India. This work has garnered attention, and CSTEP was invited to be a member of the committee, drafting the vision, strategy, and action plan for circular economy by the Department of Telecommunications, Government of India. The team was invited by the Directorate of Industries of Maharashtra to contribute to the development of the circular economy policy for the state. The team is also exploring the rural economy through big data to create visualisations that tell a story and offer an understanding of the opportunities for regenerating it.

> ***Our organisation focusses on women and child welfare. This climate accelerator programme has shown us how involving women in managing natural resources helps to build community resilience against climate extremes.***

– Farah Qazi, Programme Coordinator,
Lucknow Mahila Sewa Trust

# Impact Story

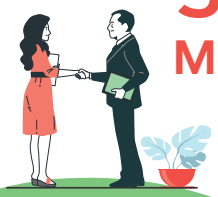
The district-level climate atlas for India and the basic modules on climate change and climate action are tools created by the adaptation team to raise awareness and enhance the capacity of various stakeholders, including journalists, educators, students, line department officials, and civil society organisations (CSOs) in the states of Uttar Pradesh, Bihar, Jharkhand, Odisha, and Karnataka.

The training for CSOs introduced them to the climate science angle in social development work, giving them the confidence to write internationally competent proposals for climate funding. Further, by demystifying and providing climate tools for urban adaptation projects, the training equipped them to be on a par with external partners. CSOs have demonstrated significant progress towards integrating climate perspective into their social development project goals and methods, strengthening their project planning for climate extremes, and enhancing their visibility.

**9**
**Publications**

**36**
**Media mentions**

**5**
**MoUs**



**29**
**Articles**

**2**
**Tools developed**

**12**
**Capacity-building sessions**

**7** Events

**2**
**Climate action plans**


KARNATAKA STATE POLICY AND PLANNING COMMISSION


NATIONAL
CONFERENCE


Towards a
Pathways to Steer
Buildings Sector Tow


sustainiti
National Seminar on Sustainable Development
in an Unequal World: Public Policy Paths 2024
5th - 6th JUNE 2024
6TH JUNE 2024
VALEDICTORY : AB 4 AUDITORIUM


Pathways to Steer India's
Buildings Sector Towards a


NSEFI
PV CYCLE
SolarPower Europe
ys for Solar Waste Management in India
CEEW


PRODUCTION
MONTHLY GENERATION
5,425,489.25 kWh
6,000,000 kWh
5,000,000 kWh
4,000,000 kWh
3,000,000 kWh
2,000,000 kWh
1,000,000 kWh
0 kWh
1
2
3
4
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6
7
8
9
10

# Digital Transformation

The challenges of clean energy transition, clean air for all, and climate action are complex and dynamic. But effective solutions can be developed when multiple stakeholders from the government, the private sector, NGOs, and other civil society organisations work together. This ecosystem approach is key to implementing solutions whose benefits can be sustained over time.

Digital transformation is an opportunity for stakeholder groups in the ecosystem to reconceive possibilities and realise exponential change. The use of data, digital technologies, advanced analytics, and automation has the potential to empower people with knowledge and insights to improve efficiencies and make better decisions for a sustainable future.

The AI and Digital Platforms (AIDP) sector has been developing digital tools to catalyse the clean energy transition, enable air quality management, and facilitate climate action. The Rooftop Solar Explorer (RTSE) tool enables consumers to assess rooftop solar potential and equips solar developers to set up rooftop systems, thereby accelerating the clean energy transition. The digital tools for air quality management, currently under development, can make it more efficient to manage low-cost sensor data, extract insights about hyperlocal air pollution, and provide knowledge and insights to the ecosystem for improving air quality. Another tool being developed—the Climate Risk Assessment Tool (CRAT)—will enable authorities and communities to understand the risks posed by hazards, boosting resilience to climate change.

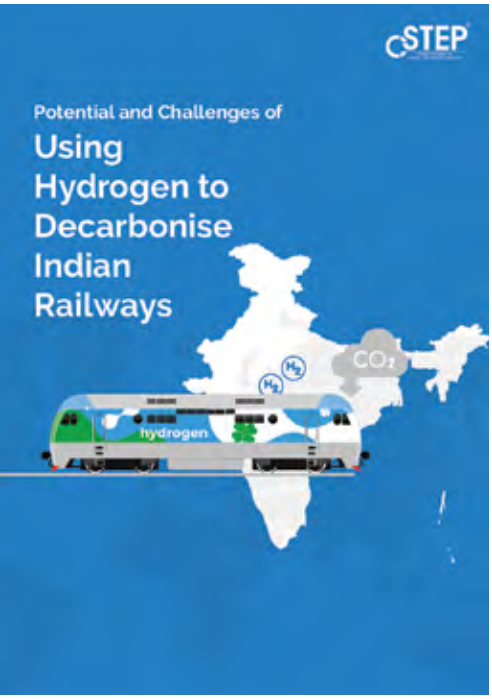
The AIDP sector is also looking at the role of digital public goods (DPG) and digital public infrastructure (DPI) in catalysing the development of innovative solutions for societal problems. There are tremendous opportunities for the ecosystem to work together, and the sector is engaging with various stakeholder groups and organisations to build and implement solutions for a secure and sustainable future.

## Impact Story

Our Rooftop Solar Explorer (RTSE) is an advanced web-based tool that can help consumers to precisely evaluate their rooftop photovoltaic (RTPV) potential. The tool's ability to make precise estimates comes from the use of high-resolution imagery, 3D modelling, and a robust methodology for calculation that accounts for potential shading from nearby trees, buildings, and other structures.

This precision in estimating RTPV potential has made RTSE the preferred tool for several distribution companies (DISCOMs) in the country. It was first piloted in Bengaluru in 2021 and subsequently launched in 2023 in several cities in Madhya Pradesh, such as Bhopal, Jabalpur, Indore, and Gwalior. The tool has also been implemented in cities in Chhattisgarh such as Bilaspur, Korba, Durg, Raigad, and Raipur. The DISCOMs in these cities are using the tool to assess ward-wise solar rooftop potential. Plans are underway to reimagine the tool for implementation at a national level.


SAEINDIA
IEEE
TECINDIA 2023
eAMRIT – Accelerating e-Mobility Revolution for India's Transportation
BEST PAPER AWARD
ON
Standards, Regulations, Policies & Circular Economy


STEP
Potential and Challenges of
Using
Hydrogen to
Decarbonise
Indian
Railways
hydrogen


ATIONAL
FESTIVAL
ALA 2024


Bengaluru Science & Technology Cluster


# Strategic Studies

The Strategic Studies sector was established with the vision of creating a think tank within a think tank. Our aim was to identify, develop, and nurture new research themes and domains focussed on trends that address the grand challenges of creating a secure and sustainable future. The sector has four groups: green mobility, hydrogen, strategic initiatives, and technology watch.

Over the years, the green mobility group has expanded to provide solutions through a variety of technologies, policies, and practices aimed at developing a more sustainable and efficient transportation system. The group is currently examining the transition challenges within the freight segment, concerning the adoption of low-carbon technologies.

With hydrogen emerging as a leading solution for decarbonising hard-to-abate segments, our hydrogen group is currently focussed on its application in the steel and cement industries, utilising it both as a reducing agent and as a thermal fuel. Additionally, we are working on developing a comprehensive hydrogen ecosystem (H2 Valley) for various applications. The team has acquired skills in modelling and analysis of hydrogen systems, published multiple reports and briefs on these topics, and is in the process of establishing connections with key forums in the domain.

It is widely acknowledged that achieving net-zero goals without carbon capture is challenging, and our strategic initiatives group has been making significant progress in this area. During our exploration, we had the opportunity to contribute to the safety and standards mechanism for carbon capture, utilisation, and storage (CCUS) systems for a committee established by the NITI Aayog. We continue to engage and support this initiative while also deepening our understanding of carbon markets for CCUS and exploring the valorisation of carbon captured in some specific industries.

## Impact Story

We have engaged with leaders in the electric mobility sector, including Ashok Leyland and Mahindra & Mahindra, fostering collaboration to drive innovation and sustainable practices. Our association with the Society of Automobile Engineers (SAE) culminated in the creation of a comprehensive professional development programme focused on e-mobility. This programme equips industry professionals with a holistic knowledge of electric vehicle technology, infrastructure development, and policy frameworks, ensuring they are well prepared to meet the evolving demands of the electric mobility landscape. By integrating insights from industry leaders, the programme also aims to accelerate the transition to a cleaner, more efficient transportation future.


r Sundeep Rao

# Communication and Policy Engagement

For an empowered society, science needs to reach every doorstep. The Communication and Policy Engagement (CPE) team has been working on increasing scientific literacy by making science accessible and relatable.

At CSTEP, science does not stop with publishing research outputs. To heighten public engagement with science, research findings are disseminated through articles in the media in reader-friendly language while ensuring that the science is not lost on the audience. Interestingly, our media mentions touched an all-time high of 514 this year. These include 52 mentions of CSTEP studies in reputed print and digital media and 45 opinion pieces written by our researchers on a wide range of topics.

As a starting point towards connecting science and society, the team profiles different audience groups. Over the years, our stakeholder mapping exercise has enabled us to understand the priorities of each audience group and mould the message accordingly. For instance, CSTEP's visually-led policy briefs cut through the clutter to deliver policy insights from our studies in a concise format. Acknowledging the busy schedule of policymakers, they have been designed to provide an instant peek into policy recommendations and solutions without the need to flick through pages of scientific content.

In fact, CSTEP has something for everyone, including students. We believe in catching them young via our Insta Reels. Through 60 seconds of audio-visual sensory indulgence, these reels provide a gateway to scientific concepts. The team has also been running several capacity-building programmes to equip researchers with the necessary skills to engage with a non-technical audience.

eARTh, the team's latest initiative, explores the medium of art to nudge behavioural change towards climate action. This is a natural progression of the team's belief that science can be an important decision-making tool not only for policymakers but also for the public. For an informed citizen, switching to public transport or electric vehicles, installing rooftop solar systems, and shifting to millets for daily meals can become natural choices. When put together, these individual actions that reduce carbon footprint can influence climate trends favourably. The Initiative invites artists into the world of climate science and public policy to figure out how science and citizens can be brought together for climate action.

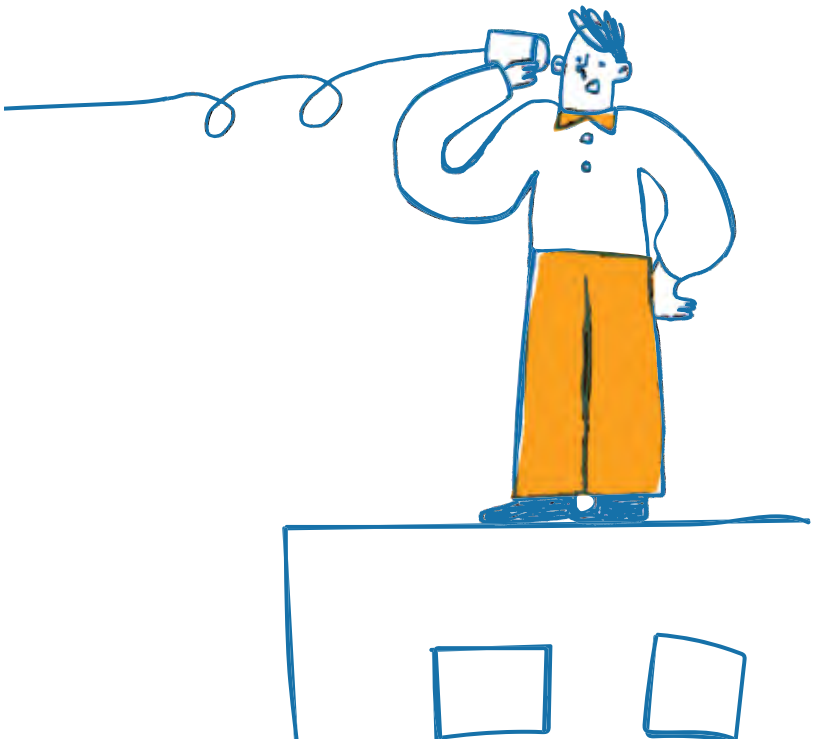
# Impact Story

Putting art at the heart of climate action, the eARTh Initiative debuted in October 2023. The Initiative includes an annual flagship event, the eARTh climate fellowship, an artists' collective focussed on climate art, and a coffee-table book featuring climate artists and art that can inform public attitudes and behaviour. Through these activities, eARTh is building an ecosystem of people and communities, which can communicate the urgency for climate action and nudge behavioural change through art.

Under the year-long eARTh climate fellowship, this year, four young artists are learning how human activities influence climate and creating art that reflects climate dilemmas. They are being guided by our mentors—well-known climate-conscious artists—who are also a part of our artist collective.

***The eARTh fellowship has given me a nurturing space to hone and practice my skills whilst making me create art that has the potential to be something more than just personal expression. The opportunity to grow as an artist while working on a noble social justice goal is something that I truly appreciate as a young artist and designer.***

– Rishabh Shetty, eARTh Climate Fellow



***Art in a given time and space reflects the environmental and socio-political concerns around us. The eARTh initiative has allowed us to once again prove that art can effectively function as one of the innovative tools to address climate change awareness.***

– Mamta Sagar, eARTh Mentor,
Poet and Translator,
Founder-Director of Kaavya Sanje


Guests


Writing like a pro!


MEDIA RELATIONS

# Human Resources

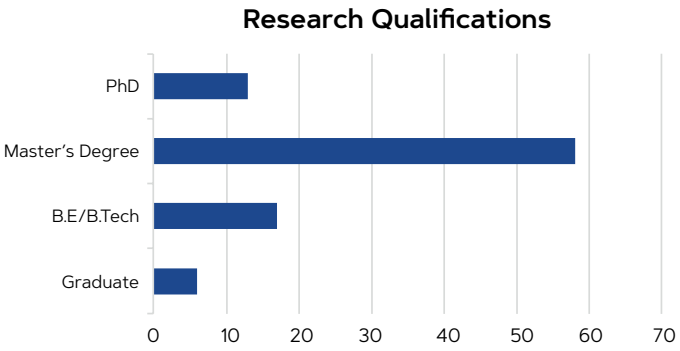
Since the pivotal transition to a hybrid work culture in 2020, CSTEP has embarked on a journey of continuous evolution. Adaptability has become our hallmark, enabling us to attract and retain top-tier talent across sectors by offering the flexibility of remote work. This flexibility not only enhances productivity but also promotes a healthier work–life balance, sparing our employees the exhaustion of unnecessary commutes.

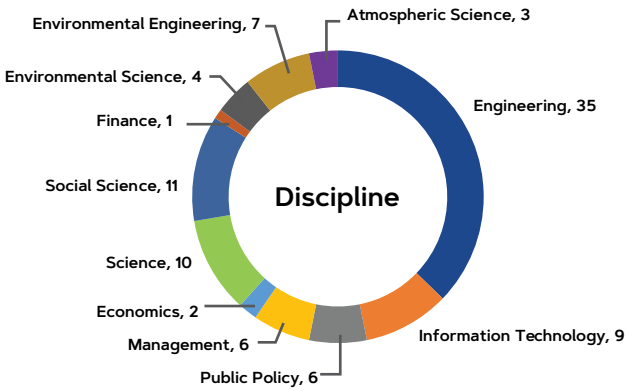
Central to our growth has been the development of a proprietary performance assessment methodology. Designed to align researchers with organisational goals, the system empowers individuals to hone their strengths and identify areas for growth. By encouraging meritocracy and healthy competition, we nurture an environment of continual improvement, ensuring that our teams remain at the forefront in their respective areas of research.

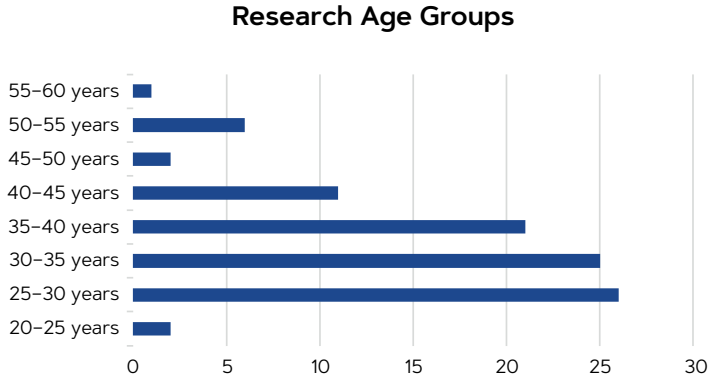
Our talent pool comprises individuals drawn from esteemed academic and research institutions, and we recognise the importance of providing them with a platform to showcase their impactful work. By providing an environment where research flourishes, we retain top talent and contribute meaningfully to our community and beyond.

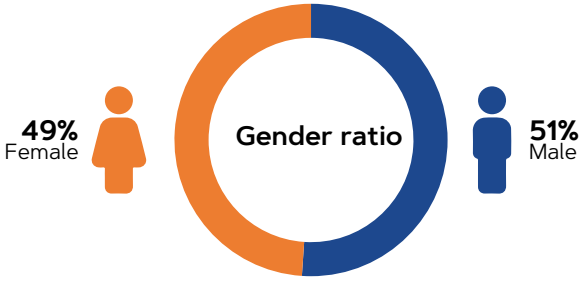
We are committed to building capacity internally through extensive internal and external training initiatives. The trainings conducted in the past year were as follows:

1. Introduction to the QC process
2. Writing workshop
3. Communications workshop
4. Media sensitisation workshop
5. Training for new IC committee (POSH)
6. Learning series on life cycle assessment (LCA)
7. Policy analysis
8. Python course – Learning series
9. Leadership training for middle managers
10. Spoken Pro – Spoken Kannada



# IT

From augmenting the IT infrastructure for a hybrid work model to performing periodic upgrades for ensuring an agile and reliable workflow, the IT team has been prompt in anticipating change and responding to it. It has adopted best practices and played a key role in ensuring the availability, security, and reliability of the IT infrastructure.

Over the years, various research groups at CSTEP have had to deal with large amounts of data and a need to process them quickly for insights. The IT team addressed these needs by adding storage clusters and high-performance central processing unit (CPU) and graphics processing unit (GPU) clusters. The team has also been proactive in carrying out cyber security threat assessments and implementing new tools to monitor and manage associated risks.

In the last year, the IT team has continued to boost efficiencies and improve the IT infrastructure, enabling researchers to work with stakeholders and deliver projects that drive sustainable change in the ecosystem. The key changes include:

Addition of 200 TB storage to manage and support air-quality data analytics.

Addition of a high-performance GPU cluster with 40 teraflops capacity to speed up projects that involve advanced computations.

Implementation of tools such as Trellix and Microsoft Endpoint Detection and Response (EDR) to enhance network security and reliability.

Upgrades for MS Office and laptop hardware for enhanced efficiency and productivity.

Addition of printers and improvement in video-conferencing capabilities for quality communication with collaborators and stakeholders.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