USAID FROM THE AMERICAN PEOPLE

asar

eds environmental design solutions

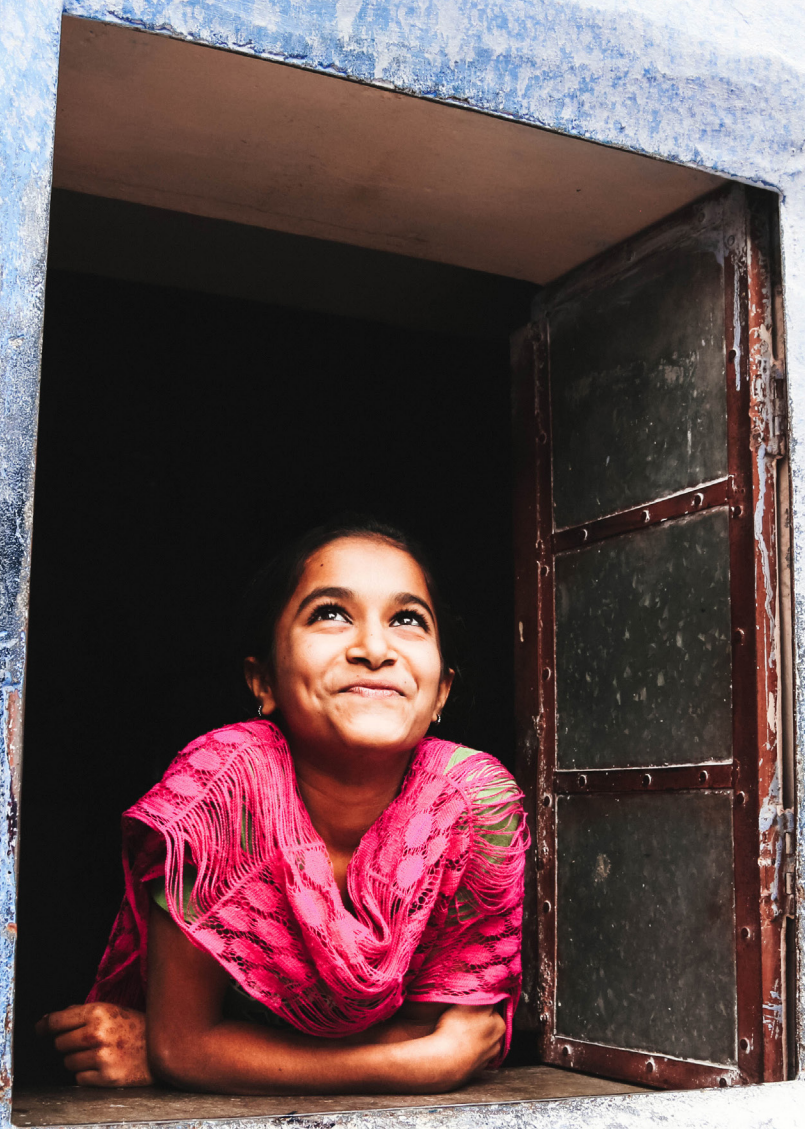
ELDF

Vital Strategies

CEEW THE COUNCIL

CLEANER **AIR** & BETTER **HEALTH** PROJECT

INNOVATING PATHWAYS TO SCALING SOLUTIONS



THE STATE OF AIR IN INDIA

Between 1998 and 2020, there has been a significant increase - from 40 per cent to 73 per cent, in the share of India's population exposed to air pollution levels higher than permitted by the National Ambient Air Quality Standards (NAAQS). With India's climate commitments to achieve net-zero emissions by 2070, there is also an impetus to address air pollution in the long run. Further, the economic cost of air pollution, is already at a staggering 3 per cent of the country's GDP, and can turn India's demographic dividend to a burden with the health toll it takes on our productive population.

The World Bank expects India to be among the fastest-growing economies in the Asia Pacific region (both aggregate and per capita GDP). It cites resilience in private consumption and investment, and robust growth in the services sector in India as the main reasons (India Development Update, April 2023).

With economic growth, the state of air too requires concerted efforts towards its improvement.

- Air pollution accounts for **9 per cent** of the national disease burden in India (Ministry of Health and Family Welfare, 2015).
- Between 1998 and 2020, there has been a significant increase - from 40 per cent to 73 per cent, in the share of India's population exposed to air pollution levels higher than permitted by the National Ambient Air Quality Standards (NAAQS).
- Air pollution in India costs Indian businesses **INR 7 lakh crore** every fiscal year, i.e., 3% of India's Gross Domestic Product (Dalberg, Confederation of Indian Industry and Clean Air Fund, 2021).
- Between 1970 and 2015, **PM2.5 emissions from large point sources like factories and power plants) in India grew 5.5 times** (CEEW, 2021).

GOVERNMENT LED INITIATIVES FOR CONTROLLING AIR POLLUTION

Several strategies for emissions control and management are being considered and frameworks are in place to meet environmental jurisprudence with the Air (Prevention and Control of Pollution) Act, 1981, Environment (Protection) Act, 1986, and the Commission for Air Quality Management Act, 2021.

There is enough evidence to show that the impact of air pollution is not uniform across geographies and populations, in India or globally. Thus there is a need to find opportunities to strengthen policy packages and create synergies among different sectors to implement them.

Government initiatives have made progress whether in providing access, or in creating an enabling system for it, some of which are:

- **National Clean Air Programme (NCAP), 2019:**
  India's flagship programme on reducing air pollution levels across the country.
- **Pradhan Mantri Ujjwala Yojana (PMUY), 2016:**
  National scheme for providing LPG connections to Below Poverty Line (BPL) households.
- **Faster Adoption and Manufacturing of Electric Vehicles (FAME), 2015:**
  India's flagship scheme to promote electric and hybrid mobility.

INDIA'S RESPONSE TO AIR POLLUTION

To meet its Nationally Determined Contributions (NDC), India is committed to reduce the emissions intensity of its GDP by 45 per cent by 2030, from 2005 levels. As part of this, about 50 per cent cumulative electric power installed capacity is expected to come from non-fossil fuel-based energy resources by 2030. Addressing climate change has clear co-benefits by way of air pollution mitigation because energy generation is a primary source of criteria pollutant emissions. The National Sustainable Habitat Mission (NSMH) and National Electric Mobility Mission (NEMMP) have all given impetus to improving quality of life and addressing exposure to pollution.

There is also direct correlation between improving air quality and the achievement of multiple United Nations Sustainable Development Goals (UN SDGs). Household air pollution can be reduced through enhanced clean energy access (SDG 7.1); an increase in the share of renewable energy (SDG 7.2) and enhanced energy efficiency (SDG 7.3) can mitigate air pollution from the power and industrial sector; and overall air quality in cities (SDG 11.6) can improve with increased access to sustainable transport (SDG 11.2). Finally, measures to abate air pollution also reduce Green House Gas (GHG) emission (SDG 13).

The Government of India has placed a great imperative to improve air quality, and is mobilising action that also benefits the climate.

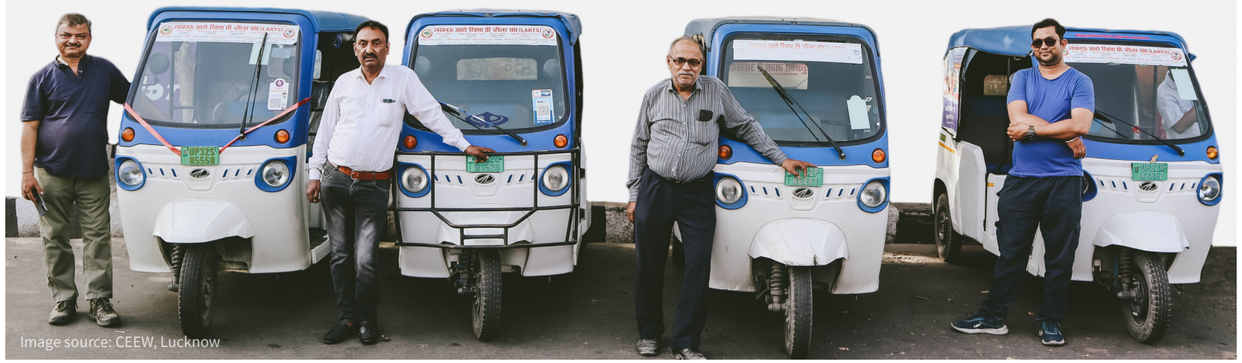


Image source: CEEW, Lucknow

National Clean Air Programme (NCAP) launched by the Ministry of Environment, Forest and Climate Change (MoEFCC) in January 2019 is a national response to improve air quality in India. NCAP identified and targeted air quality improvement in 131 non-aligned cities (NAC) that did not meet the national ambient air quality standards (NAAQS) for the period of 2011-15. Its emphasis is on comprehensive mitigation actions beyond the NACs to also include transboundary pollution sources.

NCAP has set an ambitious target -

40 per cent reduction in particulate matter (PM) by 2026.

By providing an overarching national framework, the NCAP has given an impetus to air quality action across the country. India is witnessing some progress in the 131 non-attainment cities since the launch of NCAP.

88 per cent increase
in installations of continuous ambient AQ monitoring stations (CAAQMS) – from 215 in 2019 to 400 in 20222

Over INR 8,939+ crore
have been released to the 131 cities under both the NCAP and the 15th Finance Commission for implementing actions stipulated under the city action plan

AQ improvement
in 49 cities / 131 cities in FY 21-22 compared to the previous year

36 cities
have utilised more than 70 per cent of funds under NCAP

113 cities
have developed an app for public grievance and redressal

Source: The Portal for Regulation of Air-Pollution in Non-Attainment Cities (PRANA)

CLEANER AIR AND BETTER HEALTH PROJECT

Cleaner Air and Better Health (CABH) is a five year (2021 to 2026) project supported by the United States Agency for International Development (USAID).

It aims to strengthen air pollution mitigation and reduce exposure to air pollution in India by establishing evidence-based models for better air quality management.

The project is being implemented by a consortium led by the Council on Energy, Environment and Water (CEEW) and includes ASAR Social Impact Advisors (ASAR), Environmental Design Solutions (EDS), Enviro Legal Defence Firm (ELDF), and Vital Strategies (VS).

Objectives

To strengthen air pollution mitigation and reduce exposure to air pollution in India.

Strategic approach

Create evidence-based, results-oriented solutions for air quality management and build a community of practice to implement the solutions at scale.

The project will support and accelerate the NCAP ambitions through

Creating an ecosystem that enables adoption of cleaner practices in multiple sectors, and strengthening co-operation between governmental and non-governmental stakeholders to help India meet its clean air goals.

IMPROVING AIR QUALITY THROUGH A FIVE-PILLAR APPROACH

ENABLING

monitoring and regulatory reforms

- Reducing emissions from the industrial and construction sectors by strengthening self-regulation, aided by credible data from continuous emission monitoring systems (CEMS) and ambient air quality monitoring systems.
- With improved CEMS data, facilitating wider adoption of an Emissions Trading System (ETS) that incentivises industries to reduce their emissions.
- Advancing 'healthy buildings' by establishing protocols on monitoring and management of indoor air pollution.

ENHANCING

use of data for decision making

- Facilitating a responsive data aggregation system to aid action (monitored and forecasted data, and hyperlocal source inventory).
- Generating evidence and collection of local health data to establish health benefits of air quality action.
- Strengthening the air quality decision support system (DSS) through partnerships with the government.

For strengthening air pollution mitigation

For reducing exposure to air pollution

ELEVATING

sectoral transition to clean energy through gender-responsive, socially-inclusive innovative solutions

- Improving access to clean-cooking fuel by boosting the LPG distribution system.
- Inducing transition to electric vehicles (EVs) by building a business viability case.
- Assisting energy transition in MSME industrial clusters by building custom furnaces to aid the transition from coal to natural gas.
- Promoting innovative and tested solutions for large-scale deployment of battery-powered wearable winter heating, green hydrogen cook stoves, and electrified mini-tractors for small farms.

EQUIPPING

institutions with relevant capacity for informed decision making

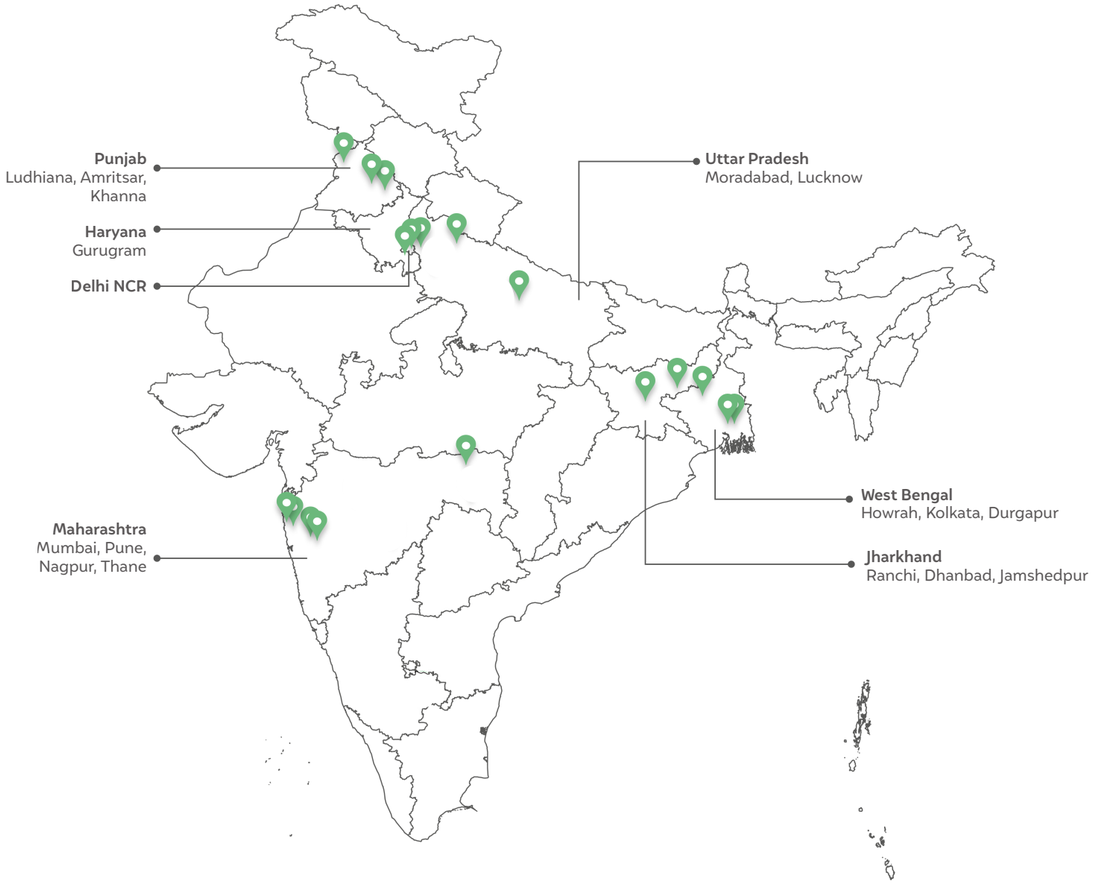
- Providing the health sector with data and tools to integrate clean air as a strategy for health promotion.
- Engaging government to improve sustainable transportation and city planning.
- Guiding development and adoption of airshed management approaches.
- Deploying pollution mitigation technologies to manage construction dust.
- Empanelling and guiding pilot projects with the private sector and project developers to improve indoor air quality (IAQ).

EMPOWERING

citizens through outreach and awareness

- Activating clean air action hubs in Non-Attainment Cities (NAC).
- Increasing capacity of health workers with data and awareness to minimise exposure and health impacts of air pollution.
- Engaging and supporting ASHA workers to lead AQ awareness in communities.
- Training media professionals to improve quality of reportage on air pollution.
- Implementing behaviour change interventions to encourage clean air practices (e.g., adoption of clean fuels, clean construction and demolition practices).

INNOVATING SCALABLE SOLUTIONS



THE CABH PROJECT CONSORTIUM

Council on Energy, Environment and Water (CEEW) leads on emissions mitigation, market-based approaches, and nudge experiments. It leads the Project's overall management.

ASAR Social Impact Advisors leads on empowering communities through outreach and awareness initiatives.

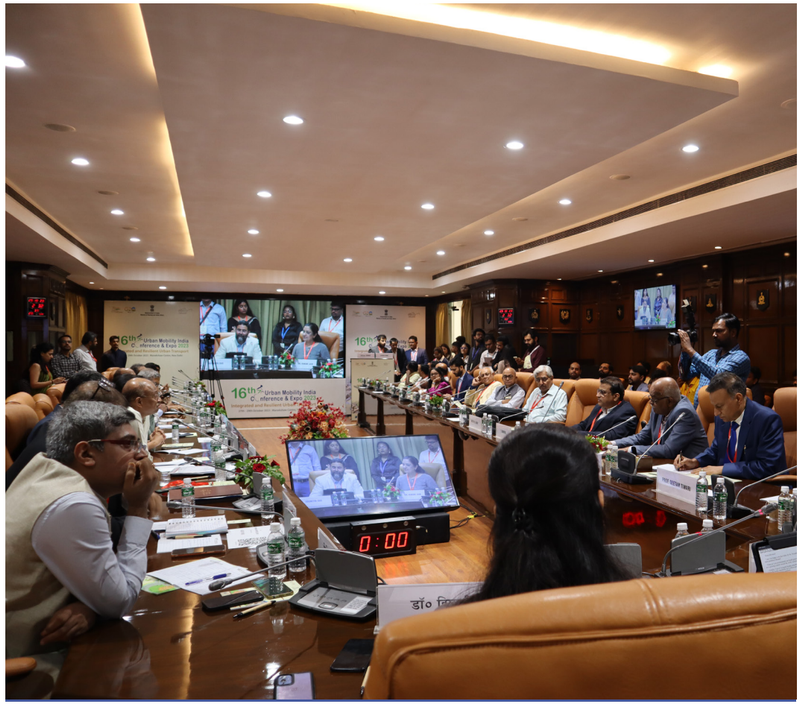
Environmental Design Solutions (EDS) leads on reducing exposure through IAQ solutions.

Enviro-Legal Defence Firm (ELDF) leads on identifying regulatory reforms, developing the legal structure for an emissions trading system (ETS) or other market-based mechanisms.

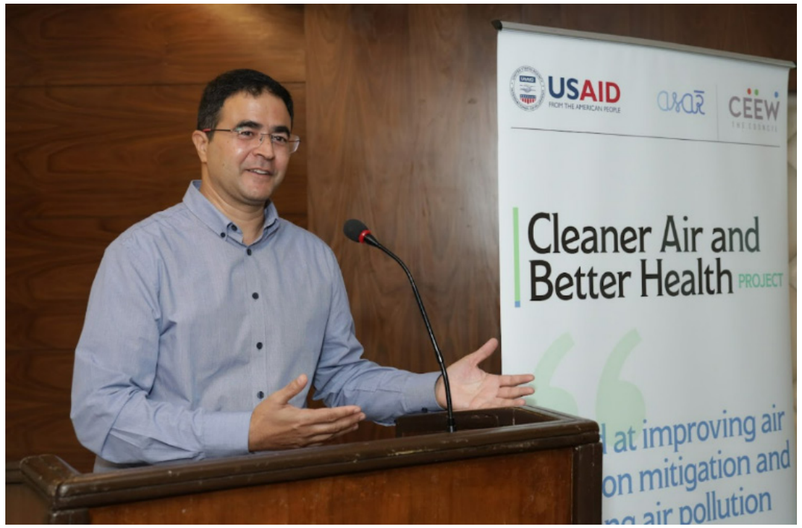
Vital Strategies leads on health sector engagement and capacity building, as well as integrated use of exposure and health data to measure impacts.

INTERVENTIONS TO BUILD A COMMUNITY OF PRACTICE FOR CLEANER AIR AND BETTER HEALTH

CEEW deploys pollution mitigation technology at a clean construction pilot site in Gurugram in partnership with Signature Global (real estate developer).



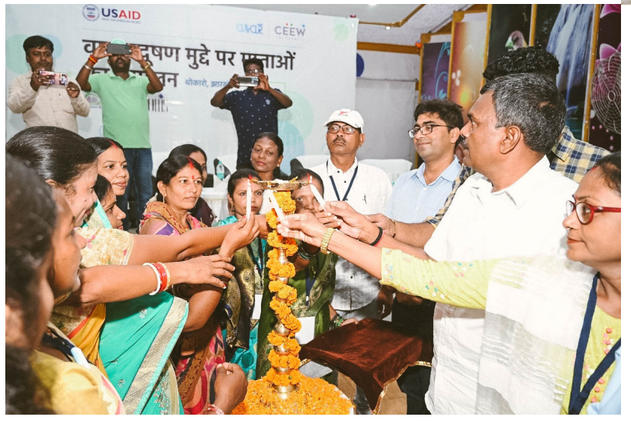
USAID and CEEW hosted a roundtable on 'Alternate Mobility Solutions to meet Paratransit Demand' at the 16th Urban Mobility India Conference and Expo 2023, organised by Ministry of Housing and Urban Affairs.



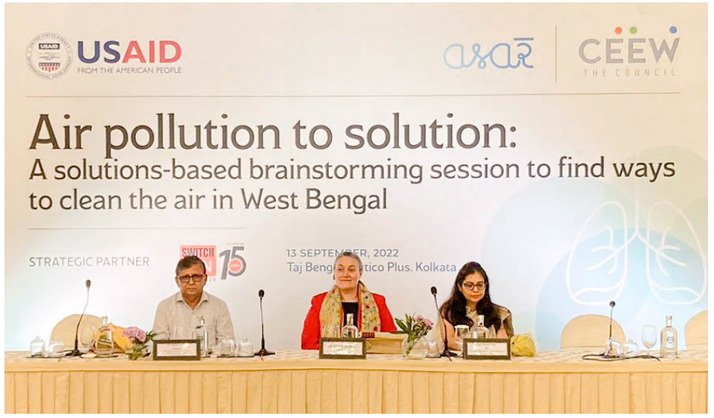
USAID's Soumitri Das inaugurates the Punjab state-level convening in Chandigarh.

Focus group discussions with hyperlocal delivery workers conducted by CEEW to understand their perceptions on how EVs can improve their livelihoods.

CEEW meeting with self-help group (SHG) members in Betul, Madhya Pradesh to explore if SHGs can act as micro-distributors to ensure last-mile delivery of LPG refills.



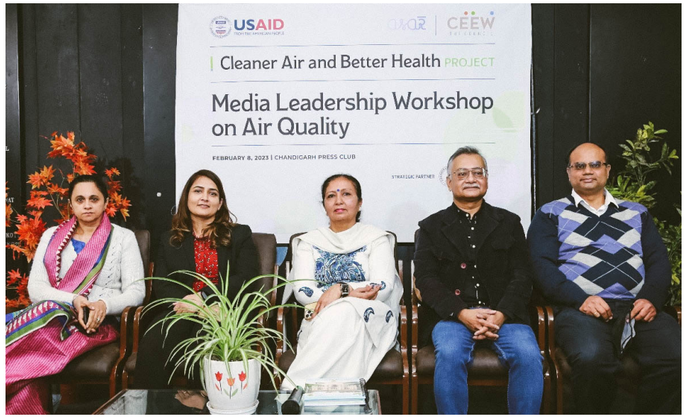
Women share their experiences with ASAR on biomass burning and associated health concerns at the 'Conference of Mothers on Air Pollution' held in Bokaro, Jharkhand.



Dr Kalyan Rudra, Principal Secretary, Chairperson of West Bengal Pollution Control Board (WBPCB), and Melinda Pavek, Consul General, US Consulate General, Kolkata, alongside Ms Roshni Sen, Principal Secretary, Department of Environment, West Bengal at a West Bengal state convening facilitated by ASAR. It was a solutions-focused session to mitigate air pollution in West Bengal.

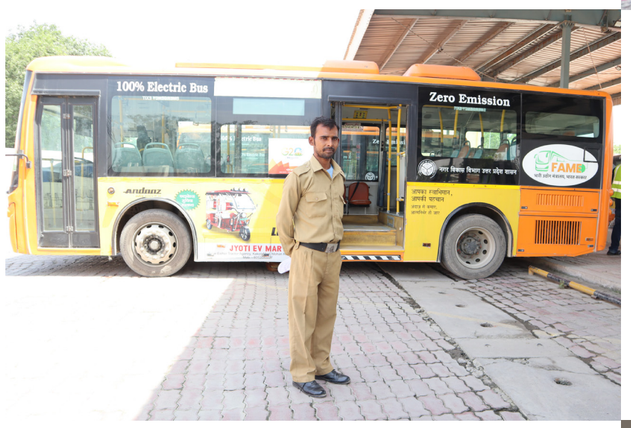
Vital Strategies facilitates a pilot training for over 40 ASHAs workers along with the Chief Medical Health Officer at the Regional Health and Family Welfare Training Centre, Indore. The training was to equip ASHAs to engage communities about air quality and health and prepare them to incorporate the promotion of clean air as a preventive strategy into their ongoing activities.

CEEW interaction with Mr M.P. Singh, Additional Commissioner of Bhopal Municipal Corporation, discussing challenges and interventions that Bhopal has taken to improve waste management.



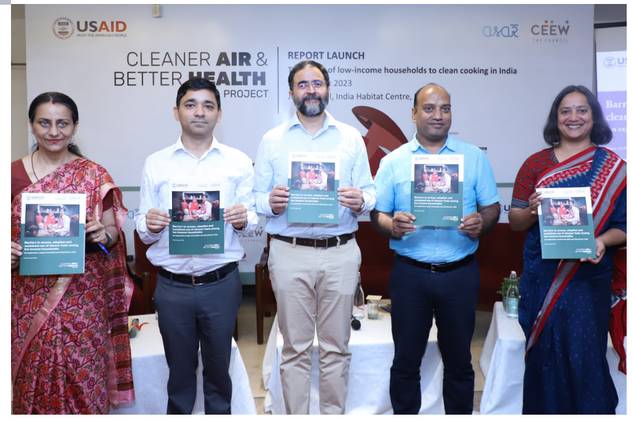
Academicians, journalists, senior scientists, and experts at a Media Leadership Workshop in Punjab organised by ASAR discuss the media's role in raising awareness around AQ and commitment towards forming an AQ media group. 60 journalists and 20 civil society members participated.

Vital Strategies convened over 25 health and climate focused journalists from across six states for a two-day workshop to enhance the use of data in reporting on air pollution.

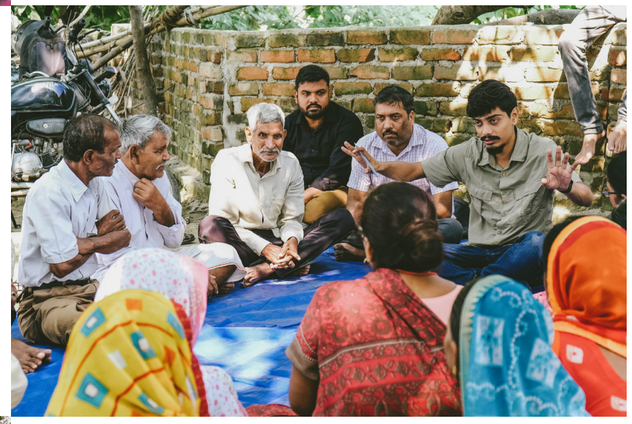


CEEW is working with the Directorate of Urban Transport, UP, to enhance the fleet size and services of e-buses across the state. This zero-emission shared mobility is promoted to enhance public transport usage, thereby reducing the share of air pollution caused by private vehicle use.

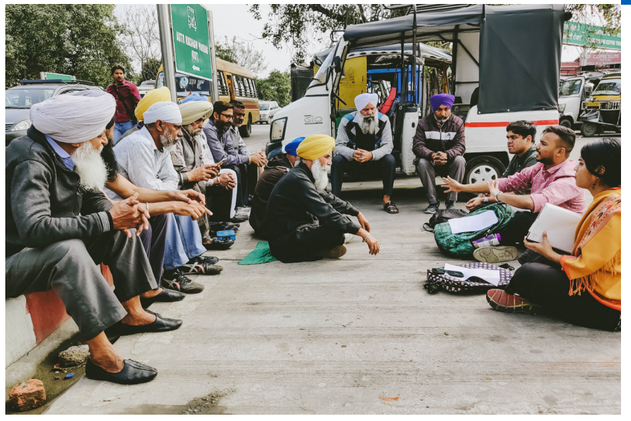
Report launched by ASAR on 'Barriers to Access, Adoption, and Sustained Use of Cleaner Fuels Among Low-Income Households: An Exploratory Study in Jharkhand and Delhi'



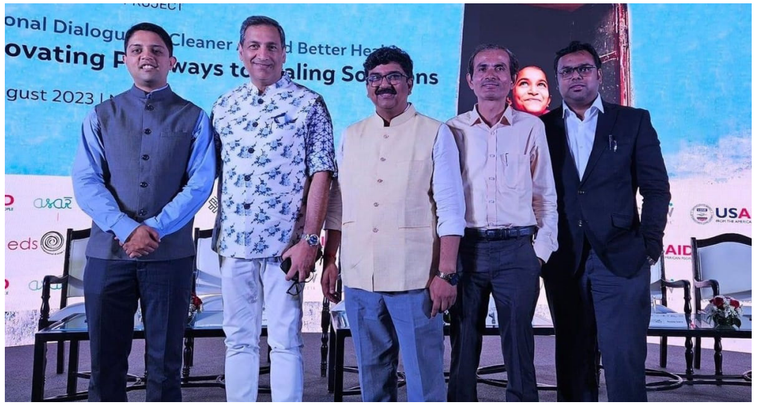
Perception study by ASAR and Vital Strategies was carried out with ASHA workers on air pollution and health in six states to ascertain level of knowledge and perceptions of air pollution, and their role in enabling community awareness and action on air pollution and its health implications.



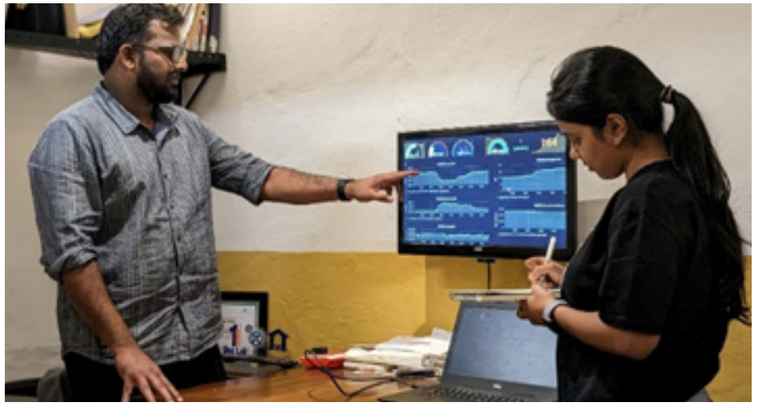
CEEW conducts a focused group discussion with users of non-motorised transport (NMT) to understand challenges faced by them in terms of quality of NMT infrastructure, safety and accessibility.



CEEW conducts a focused group discussion with diesel auto owners at the Amritsar railway station to assess barriers to the adoption of electric-autos.



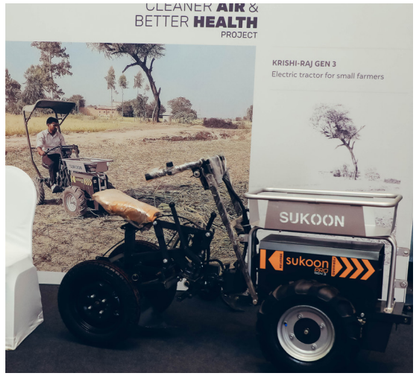
Mr. Sanjay Upadhyay (ELDF) with ELAN-CABH members from state pollution control boards - **Mr. Anirudhh Kulkarni** -Advocate and Counsel (Maharashtra SPCB), **Mr. Sujeet Kumar** - Advocate, C&S Law Offices and **Mr. Akash Vashishtha -** Advocate (Uttar Pradesh) and **Mr. Subhashis Rasik Soren** - Advocate, Jharkhand and empaneled Counsel for the Union of India.

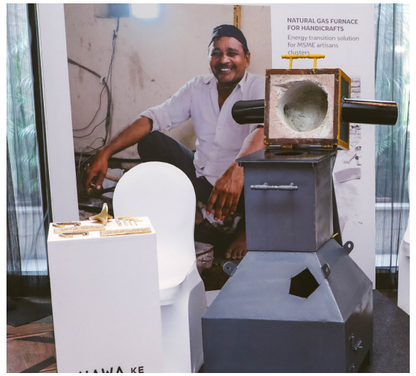


EDS developing a dashboard for indoor air quality monitoring.

CEEW pilots the first-of-its-kind furnace. The furnace of small-batch brass-melting using piped natural gas provide artisans a cost-effective alternative to coal.

Ideator Fellowship students with key speakers and panellists from the CABH project consortium at the CEEW-USAID national dialogue, Cleaner Air and Better Health: Innovating Pathways to Scaling Solutions, New Delhi, 31 August 2023

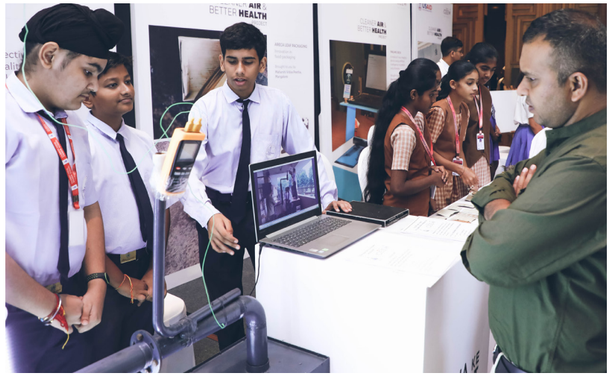




Hawa Ke Saathi (Friends of the Air) exhibition showcased prototypes of clean air solutions and interventions developed under CABH project. Some of the innovations featured included battery-powered wearable heating solutions, natural-gas furnace for handicrafts, electric crop residue management machines, green hydrogen cookstove, and the five schools' technology solutions under the Ideator Fellowship.

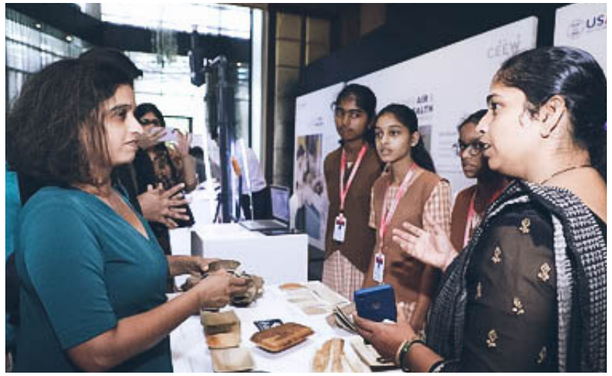
Panel discussion on ''Clean Air and Quality of Life - A Symbiotic Relationship"

From L-R: **Dr Mukesh Khare**, Professor Emeritus, Civil Engineering Department, IIT- Delhi; **Ms Rhea Singhal**, Founder, Ecoware Solutions, Member of CEO Forum for Clean Air; Panel Chair **Shri Ved Prakash Mishra**, Director, Ministry of Environment, Forest and Climate Change; **Shri A K Gupta**, Additional Director, Regional Centre For Urban And Environmental Studies (RCUES) and Directorate of Urban Transport, Government of Uttar Pradesh; **Dr Randeep Guleria**, Chairman, Institute of Internal Medicine & Respiratory and Sleep Medicine and Director Medical Education at Medanta, Ex-Director, AIIMS Delhi; and moderator **Ms Sumi Mehta**, Vice President, Vital Strategies.



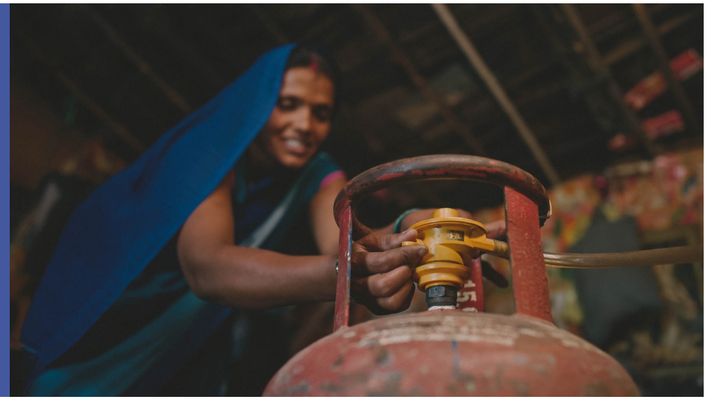
Encouraging youth through the Ideator Fellowship since 2022 to spark innovation and entrepreneurial spirit in unconventional problem areas surrounding air pollution. Students and teachers from five schools across the country were chosen to develop and exhibit innovations to mitigate air pollution.

- **Lilawati School (Delhi)** developed EnviroShield, a first-of-its-kind cost-effective solution for improving air quality in small factories.
- **Birla Shishu Vihar (Pilani, Rajasthan)** developed PneumoDeck, a medical X-ray imaging device that uses artificial intelligence and lung X-ray scans to diagnose and highlight the chances of pneumonia.
- **Aiswarya Public School (Kollam, Kerala)** developed a natural air filter, a potential cost-effective and environmentally friendly alternative to synthetic HEPA filters).
- **Sri Vyasa Maharshi Vidya Peetha Kilpady (Karnataka)** developed Areca Nut based packaging solution for food delivery services.
- **Sunbeam School (Mau, Uttar Pradesh)** developed a Waste Audit, a comprehensive kit to standardise waste management.



Ms Veena Reddy, Mission Director, USAID in conversation with students at the exhibition.

PROJECTED IMPACT FROM CLEANER AIR AND BETTER HEALTH PROJECT

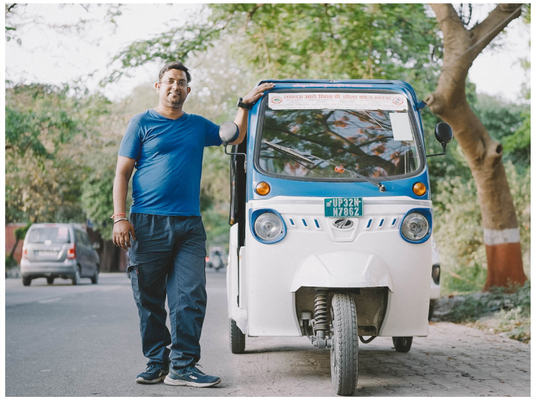


80% of the Indian households sustain use of clean cooking fuel

14 sentinel surveillance sites strengthened for reporting disease data attributed to poor AQ

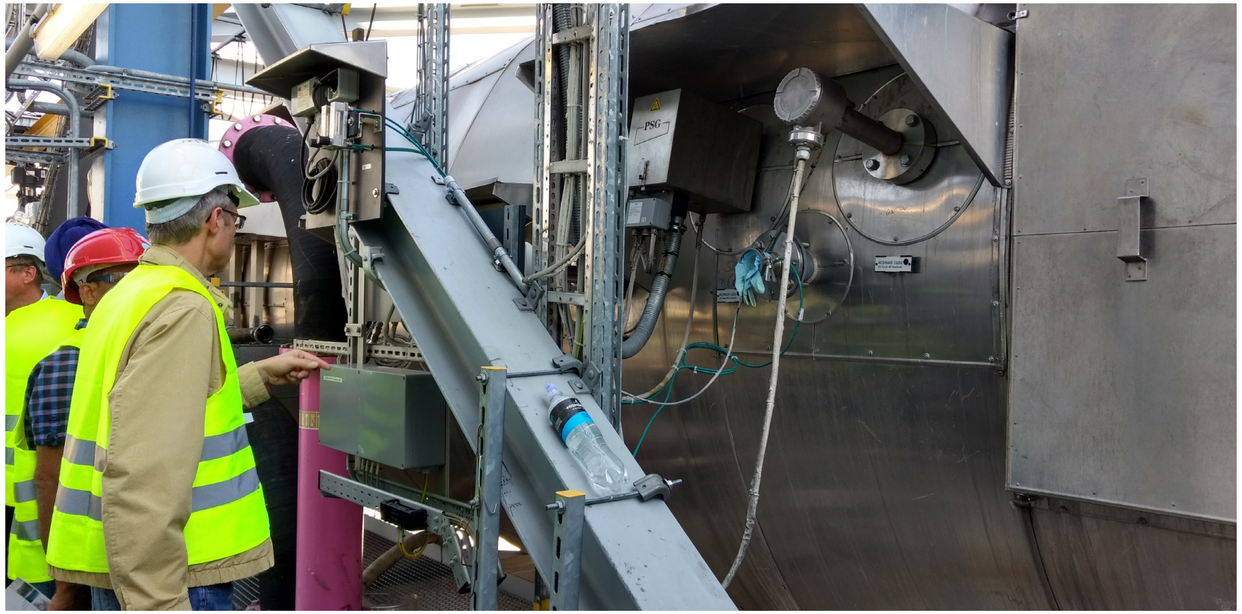
7,500 new electric vehicles deployed leading to reduction of 6.2 tonnes of PM2.5 and 471.4 tonnes of NOx

- 5000 ULB practitioners' capacity built from 800 towns in a state in urban transport and planning.
- Accelerating inclusive EV transition with formation of 4 Self-Help Groups under NULM for electric auto adoption by women



40% reduction in particulate matter (PM) at pilot construction dust management site

- First CAPEX & OPEX estimate built for C&D waste recycling facilities



Successful demonstrations for scale of

- **Decision Support System** (air quality forecasting and emission inventories)
- **First zero waste audit intervention** in schools
- **Feasibility** of winter heating technology
- **SHGs as micro-distributors of LPG** for improved home delivery
- **Enterprise promotion and innovations** with green financing and risk capital enabled models in green hydrogen cookstoves, and electric tractors

7 buildings with solutions and strategies for design and retrofit for improved indoor air quality

» "**Breathe-In Dialogues**" platform engages stakeholders on scaling built environments in India with good indoor air quality

14 sentinel surveillance sites strengthened for reporting disease data attributed to poor AQ

» Support to National Centre or Disease Control (NCDC) and health departments to implement air quality and health-related activities in state action plans climate change and human health

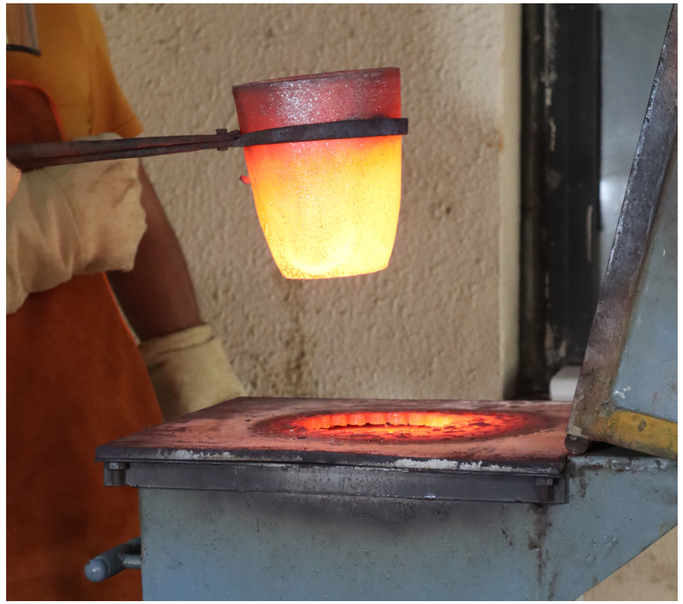
5 State Pollution Control Boards (SPCBs) with improved capacities on implementation of legal and judicial decisions

» First-of-its-kind national portal and platform 'Vayulex' developed to empower individuals to navigate law and policy instruments for informed and impactful actions

60% reduction in criteria emissions from 150 units in an MSME cluster

» Successful test bed of first-of-its-kind furnace for energy transition

12 active Clean Air Action Hubs established in non-attainment cities to empower communities



"USAID's air quality programming aims to mitigate and reduce ambient and household air pollution to reduce adverse health impacts, advance climate change mitigation and adaptation, and promote inclusive, sustainable development."

SOUMITRI DAS

Project Management Specialist (Environment)

United States Agency for International Development (USAID)

"The CABH project is working with the best available science on air quality, designing interventions with domain experts to mitigate air pollution at scale, and communicating actively with citizens and CSOs to help drive cogent responses from policy makers and regulators."

KARTHIK GANESAN

Fellow and Director - Research Coordination, Council on Energy, Environment and Water

Expertise: Research planning and execution

"Knowledge of law and policy environment across stakeholders is key to the success of the CABH project. Our endeavour is to steer the project successfully within the framework of law on air pollution through innovation and reform to meet new challenges to air pollution prevention and mitigation."

SANJAY UPADHYAY

Advocate, Founder, Enviro Legal Defence Firm

Expertise: Enviro legal research and strategy

"To solve the air pollution crisis in our cities we need an all-hands-on-deck approach and greater alignment between civil society and implementing agencies. The CABH project enables us to convene and create a supportive context through our city action hubs."

VINUTA GOPAL

Director, ASAR Social Impact Advisors

Expertise: Strategies for social change

"Our goal is to enhance the health sector's capacity to address air quality, through awareness raising and strengthening evidence, to achieve accelerated and measurable health benefits."

SUMI MEHTA

Vice President, Vital Strategies

Expertise: Epidemiology and impact assessment

"Health risks related to indoor air quality are a concern as we spend the majority of our time indoors at home or at work. CABH will help develop empirical evidence linking air pollution and indoor air quality, and provide solutions to improving it. This will enable occupants to take informed decisions about their health and well-being."

TANMAY TATHAGAT

Executive Director, Environmental Design Solutions

Expertise: Integrated program design & implementation

About USAID

The US Agency for International Development (USAID) is the US government's premier international development agency and a catalytic actor driving development results across the world. USAID works to help lift lives, build communities, and advance democracy. Its work advances US national security and economic prosperity, demonstrates American generosity, and helps countries with their development journey. In India, USAID is collaborating with the country's growing human and financial resources through partnerships that catalyse innovation and entrepreneurship to solve critical local and global development challenges.

www.usaid.gov/india | @usaid_india

About CEEW

The Council on Energy, Environment and Water (CEEW) is one of Asia's leading not-for-profit policy research institutions and among the world's top climate think tanks. The Council uses data, integrated analysis, and strategic outreach to explain — and change — the use, reuse, and misuse of resources. The Council addresses pressing global challenges through an integrated and internationally focused approach. It prides itself on the independence of its high-quality research, develops partnerships with public and private institutions, and engages with the wider public. CEEW has a footprint in over 20 Indian states and has repeatedly featured among the world's best managed and independent think tanks.

www.ceew.in | @CEEWIndia

About ASAR

ASAR Social Impact Advisers (ASAR), created the National Clean Air Collective in 2017 to get organisations, individuals, and groups working on air pollution to collaborate, complement each other's work, and to align on strategy and implementation.

www.asar.co.in

About EDS

Environmental Design Solutions (EDS) has a wide range of experience in the design, development, and implementation of large-scale programmes both in terms of project investments as well as bundled initiatives for energy efficiency and climate change measures.

www.edsglobal.com | @EDSglobal

About ELDF

Enviro Legal Defence Firm (ELDF) is India's first environmental law firm, and has dealt with multiple landmark environmental cases that have shaped the course of air quality management across India. ELDF has a wealth of experience on legal and policy dimensions of air pollution including judicial precedents.

www.eldfindia.com | @ELDFINDIA

About Vital Strategies

Vital Strategies has programs spanning 70 countries and has worked with India's Ministry of Health and Family Welfare, and Ministry of Environment, Forest and Climate Change, local advocates for clean air, and clinicians to promote clean air and health benefits of scaling clean household energy.

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Disclaimer: This publication is made possible by the generous support of the American people through the United States Agency for International Development (USAID). It has been prepared under the Cleaner Air and Better Health (CABH) Project [Cooperative Agreement 72038621CA00010]. The contents do not necessarily reflect the views of USAID or the United States government, or the consortium.

Cover image: Alamy

Layout and Design: Twig Designs

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