DRAFT CONCEPT NOTE
National Workshop: Unlocking finance to support climate and clean air solutions in India

8-9 August 2024
Venue: Habitat Centre, New Delhi, India
Registration: https://lowcarbon.earth/pages/event.html

BACKGROUND

Polluted air is creating a health emergency. It also takes a heavy toll on the economy – with air pollution in South Asia costing 10.3 per cent of GDP, respectively, in 2019.[1] Exposure to air pollution can lead to stroke, diabetes, heart diseases, lung cancer, and respiratory diseases[2] –all of which could severely affect quality of life.

Cost-effective solutions to address air pollution exist and have been identified to address the major sources of air pollution. While contribution of each source may vary depending on location, fossil fuel emissions from coal burning for power and heat, transport, industrial furnaces, brick kilns, agriculture, domestic solid fuel heating, and the unregulated burning of waste are considered the main sources of air pollution. In Asia Pacific, report *Air Pollution in Asia Pacific: Science Based Solutions* by UNEP's Asia Pacific Clean Air Partnership (APCAP) and the Climate and Clean Air Coalition (CCAC) have identified 25 policy and technological solutions to address the five key sectors contributing to air pollution in Asia Pacific.[3]

Despite these multiple benefits, **clean air interventions and other air quality management elements have not been financed to their full potential**. Based on UNEP's analysis, a lack of resources has led to a limited uptake of measures to reduce emissions of pollutants across key economic sectors; an inability to invest in data analysis; and a lack of enforcement and implementation capacity[4]. There were similar findings in the *CERCA and UNEP 2023 Needs Assessment Report for Air Quality Management in India* which found funding for implementation-focused projects to improve air quality is disproportionate to the scale of the problem. It emphasizes that **financing clean air actions should be seen as an investment for health, social and economic benefits**.

Climate finance is one large untapped source of funding that can deliver cleaner air and a healthier environment. Unfortunately, only 2 per cent of international public climate finance intentionally tackles air pollution[5], which is the share of funding that contributes to achieving the Paris Agreement. One example of such a mechanism that could be explored to achieve co-benefits is Japan's Joint Crediting Mechanism (JCM). The JCM is a bilateral or multilateral framework designed to promote international cooperation in greenhouse gas emissions reduction projects. It enables developed countries to cooperate with developing countries in implementing emission reduction projects and to share resulting emission reductions as "joint credits."

Promising action and innovative technology and industry solutions are on the rise to address this health and environmental risk. Engagement of the industry and private sector will be critical for innovation and

[1]World Bank. 2022. The Global Health Cost of PM2.5 Air Pollution: A Case for Action Beyond 2021. International Development in Focus. Washington, DC: World Bank.
[2] Key Messages of the 2022 International Day of Clean Air for blue skies
[3]https://wedocs.unep.org/handle/20.500.11822/26861
[4] UNEP (2021). Actions on Air Quality: A Global Summary of Policies and Programmes to Reduce Air Pollution
[5] Clean Air Fund, 2023. State of Global Air Quality Funding 2023. https://www.cleanairfund.org/resource/state-of-global-air-quality-funding-2023/

transformative action. This will help shift public and private investments towards less polluting practices in high impact sectors, such as energy, industry, agriculture, transport, waste, and residential sectors. The National Productivity Council (NPC) has undertaken stakeholder consultations with industry representatives from six sectors (chlor alkaki, cement, pulp & paper, iron & steel, textile, and fertilizer) and has collected potential project ideas focusing on mitigation of air pollutant and GHG emissions (see box 1). The potential ideas include technological intervention, R&D measures, process modifications, energy efficiency measures etc. from various industry representatives.

OBJECTIVES

- **To facilitate identifying sector specific innovation and customized solutions**: Encouraging different industries to propose ideas on new technologies, processes, and solutions that can effectively reduce emissions. Different industries face different challenges when it comes to emissions reduction. The EOIs help identify and prioritize solutions that are tailored to the specific needs and circumstances of the concerned industry. The EOIs received shall be collated to have a diverse range of perspectives, leading to a broader pool of potential solutions.
- **To support the development of bankable projects**: To guide participants in developing bankable project proposals that are both economically and socially viable, with a focus on addressing air pollution from industries.
- **To understand funding schemes**: To enhance understanding of various funding mechanisms and explore an enabling environment necessary to secure the funding.
- **To foster collaboration**: Encouraging participation from various sectors shall foster collaboration and partnerships. This can involve collaboration between industries, research institutions, government agencies, and other stakeholders, leading to more comprehensive and effective solutions.

Box 1. Initial project ideas from stakeholder consultations

To obtain relevant project ideas NPC has undertaken stakeholder consultations with following sectors:

i.	**Chlor alkali**	**iv.**	**Iron and steel**
ii.	**Cement**	**v.**	**Textile**
iii.	**Pulp & paper**	**vi.**	**Fertilizer**

Some of the project ideas obtained from the stakeholder consultations include:

- Cost effective technology for conversion of small and medium scale coal based DRI plants to Gas based [Small scale < 0.05 MTPA; Medium scale (>0.05 MTPA and <0.15MTPA)]
- Alternative reducing agent in place of carbon in sponge iron manufacturing
- Appropriate technology to replace thermal energy consumed in sponge iron manufacturing and steel industry by renewable energy
- Appropriate technology for conversion of very old fertilizer (Urea) plants having undergone maximum energy conservation into a hybrid mode utilizing green hydrogen
- Appropriate technology for conversion of complex fertilizer manufacturing units with no access to waste heat recovery into renewable energy based plants
- Improved membrane technology for Chlor Alkali manufacturing plants
- Technology for high pressure (8-9 Kg) steam oven
- Waste Heat recovery system for HCl furnaces
- Energy efficient technology for caustic lye evaporation
- Installation of energy efficient equipment including pumps, chillers. Boilers etc.
- Installation of waste heat recovery systems
- Installation of solar PV system / roof top solar plants
- Installation of heat exchangers

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DAY 1 (8 August 2024)

Master of Ceremonies: Ms. Nikita, Deputy Director, Environment & Climate Action Group, National Productivity Council

Time	Agenda
9.00 – 9.30	Registration
9.30 – 9.40	**Welcome Address & Opening Remarks** • **S. Gopalakrishnan**, IAS, Director General, National Productivity Council (NPC) NPC's Mission has been to contribute to the sustainable, inclusive socioeconomic development of the country by enhancing productivity. Mitigating air pollution to achieve net-zero carbon emissions through sustainable development involves adopting renewable energy, enhancing energy efficiency, promoting green infrastructure, and implementing circular economy practices. These measures reduce emissions, improve air quality, and support sustainable economic growth, balancing environmental protection with societal needs.
9.30 – 9.50	**Inaugural Address/Remarks** • **Mr. Mozaharul Alam**, Officer-in-Charge, UNEP India Country Office and Regional Coordinator for Climate Action, UNEP Asia and the Pacific Office • **Ms. Mikiko Tanaka**, Director, Subregional Office for South and South-West Asia, ESCAP • **Mr. Yu Kamei**, Director, Office for International Cooperation, Environmental Management Bureau, Ministry of the Environment, Japan (MoEJ) UNEP's Asia Pacific Clean Air Partnership (APCAP), supported by the Ministry of Environment of Japan, and the Climate and Clean Air Coalition (CCAC),developed of an integrated air quality and climate assessment called "Air Pollution in the Asia Pacific: Science-based Solutions" which identifies a portfolio of 25 clean air measures that if implemented, could substantially improve air quality and deliver benefits for climate. The Government of Japan leads the efforts for mitigating air pollution with co-benefits of GHG emission reduction.
9.50 – 10.05	**Address by Chief Guest** • **Secretary**, Ministry of Environment, Forest & Climate Change/Chairman, Central Pollution Control Board (TBC) India's action plan includes the National Clean Air Programme, expanding renewable energy, promoting electric vehicles, enhancing energy efficiency, afforestation, waste management, and stringent industry regulations. Committed to reducing emissions intensity by 45% by 2030, India aims for net-zero carbon emissions by 2070.
10.05 – 10.35	Tea Break
10.35 – 11.00	**Introduction: Asia Pacific Clean Air Partnership and developing bankable projects for air pollution reduction** • **Ms. Kakuko Nagatani-Yoshida**, UNEP Global Coordinator for Chemicals and Pollution Action Subprogramme / Global Coordinator for Finance and Economic Transformations Subprogramme, a.i.

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	The Asia Pacific Clean Air Partnership (APCAP), initiated by UNEP, aims to improve air quality across the Asia-Pacific region. By fostering regional cooperation, sharing best practices, and promoting sustainable policies and technologies, APCAP addresses air pollution challenges, enhancing public health and supporting global climate goals. Developing bankable projects for air pollution reduction involves identifying feasible initiatives such as renewable energy adoption, clean transportation, and waste management. These projects require robust financial models, stakeholder engagement, and risk assessments to attract investment and ensure effective implementation, leading to tangible improvements in air quality and public health.
11.00 – 11.30	**Co-benefits approach: Air pollution and climate change** • **Ms. Yumi Yasuda**, Deputy Director, Ministry of Environment, Japan • Representative from Ministry of Environment, Japan MOEJ is promoting the co-benefit approach on air pollution and climate change to many countries including India by introducing Joint Credit Mechanism (JCM). Introducing appropriate Japanese technology to India is a "key" for this bilateral cooperation.
11.30 – 12.30	**Fireside chat: Air pollution, its sources, and solutions** • **Ved Prakash Mishra**, Director, Hazardous Substances Management Division, Ministry of Environment, Forest and Climate Change • **Dr. Prashant Gargava**, Director, National Clean Air Programme (TBC) • **Professor Mayank Kumar**, Indian Institute of Technology, Delhi • **Mr. Dinesh Kulkarni**, Bharat Kisan Sangh (TBC) Air pollution in India stems from vehicular emissions, industrial discharges, construction dust, and agricultural residue burning. Rapid urbanization and population growth worsen the issue, leading to severe health impacts. Addressing this requires stricter regulations, cleaner energy adoption, and increased public awareness to reduce pollution and protect health.
12.30 – 13.00	**Air Quality Action Forum (AQAF): Introduction of AQAF and Findings of the Needs Assessment Report for Air Quality Management in India** • Representative from UNEP India Country Office In 2021, UNEP together with partners launched the Air Quality Action Forum (AQAF) - a groundbreaking platform bringing together stakeholders from diverse sectors, including the corporate sector, expert institutions, international development agencies, philanthropic organizations, and the UN system, to support the Government of India in its efforts to improve air quality and management. The AQAF aims to collectively address the challenges posed by air pollution and pave the way towards a cleaner, healthier future. In 2023, CERCA and UNEP developed an assessment of the challenges and needs for more effective air quality management in India focusing on Science, Technology, Capacity building and Outreach activities, Finance, and Policy.
13.00 – 14.00	Lunch Break
14.00 – 15.30	**Panel Discussion: Understanding potential project ideas on climate and clean air mitigation measures in various industrial sectors** **Moderator: Dr. Shukla Pal**, Director, Environment & Climate Action Group, NPC **Panellists:** • **Dr. Ashwani Kumar Dixit**, Scientist – F, Central Pulp & Paper Research Institute (CPPRI) (paper and pulp) • **Dr. S.K Chaturvedi**, Joint Director and Head of Center, National Council for Cement and Building Materials (NCCBM) (Cement) • **Mr. Manish Goswami**, Chief (Technical), Fertilizer Association of India (FAI) (fertilizer)

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	• **Mr. Deependra Kashiva**, Director General, Sponge Iron Manufacturer India (SIMA) (iron and steel) To attain clean air and net-zero carbon emissions in Indian industry, essential infrastructure and technologies include renewable energy integration, energy-efficient manufacturing processes, carbon capture and storage systems, waste-to-energy facilities, and sustainable transportation solutions. Additionally, investing in green infrastructure, such as green buildings and eco-friendly manufacturing practices, is crucial. These measures can mitigate emissions, enhance air quality, and promote sustainable industrial development aligned with climate goals.
15.30 – 16.00	Tea Break
16.00 – 17.00	**<u>Panel Discussion: Strengthening engagement of corporate in air pollution and GHG emission mitigation</u>** **Panellists** • **Mr. Tejinder Miglani**, Partner, Climate Angels (TBC) • CSR Head Varun Beverage (TBC) • **Ms. Pamela Tikku**, Vice President & Head - Auto Group Public Affairs, Mahindra Group (TBC) • **Mr. Prasanna Singh**, Managing Editor, Saur Energy International (TBC) The panel discussion featuring corporate CSR and policy experts will address how to engage corporations in air pollution and GHG emission mitigation efforts. These specialists will discuss effective strategies for integrating environmental initiatives into corporate social responsibility programs and policy frameworks. The session will explore successful case studies, regulatory incentives, and the impact of corporate involvement on sustainability goals.

DAY 2 (9 August 2024)

Master of Ceremonies: Ms. Nikita, Deputy Director, Environment & Climate Action Group, National Productivity Council

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9.00 – 9.30	Registration
9.30 – 11.00	**Session: Perspectives on solutions to address emissions from open burning of agricultural crop residues and future sustainability** **Moderator: Ms. Mikiko Tanaka**, Director, Subregional Office for South and South-West Asia, ESCAP **Panellists** • **Ms. Sunderam Rukmani**, Joint Secretary, Ministry of Agriculture and Farmers' Welfare • Representative from Punjab Agricultural University, Ludhiana, Punjab (TBC) • **Mr. Karan Dhillon**, Bharti Kissan Union, Sidhupur, Punjab (farmers union in Punjab) • **Mr. Raspinder Singh Grewal**, Kheti Virasat Mission, Ludhiana, Punjab (farmers organization promoting sustainable agriculture) • **Dr. Sukhmeet Singh**, CEO, A2P Energy Private Ltd., Chandigarh, Punjab Implementing sustainable farming practices like agroforestry and organic farming, alongside conservation agriculture techniques, can reduce greenhouse gas emissions and improve soil health. Additionally, utilizing agricultural waste for biogas production can mitigate methane emissions, while promoting renewable energy sources for cooking and heating in rural areas. As innovative solutions for crop residue management emerge and develop, it is also important to address the dilemma of economic viability and environmental sustainability of agriculture more holistically.
11.00 – 11.30	Tea Break
11.30 – 13.00	**Session: Data Matters – Atmospheric Environment Network** **Panellists** • **Dr. Sachiko Hayashida**, Research Institute for Humanity and Nature (RIHN) • **Dr. Akie Yuba**, Asian Center for Air Pollution (ACAP) • **Mr. Takeshi Kobayashi**, Japan Environment Technology Association (JETA) • **Mr. Hiroki Hashimoto**, Shibata Kagaku As research on the impact of air pollution on our lives progress, there is a concurrent need to take further measures. There is now a question raised on how precisely we know our air quality, and how accurate data is necessary in obtaining all pertinent information. In this session, we aim to introduce the concept of efficient air quality data collection, regarding the concept of developing an air quality monitoring network including low-cost sensors.
13.00 – 14.00	Lunch Break
14.00 – 15.30	**Session: Life Matters: Unlocking finance by introducing multiple benefit approach** **Moderator**: Dr. Archana Walia, India Director Clean Air Asia (CAA) • **Dr. Kamal Vatta,** Punjab Agricultural University (PAU) • **Ms. Maria Katherina Patdu**, Associate Programme Officer – APCAP, United Nations Environment Programme (UNEP)

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	• **Ms. Yumi Yasuda**, Deputy Director Ministry of the Environment, Japan By hearing from multiple agencies, including the relevant funding organizations, it aims to offer representatives of government agencies, related industry groups, local governments, private companies, and others who seek technical cooperation, an opportunity to brainstorm and support developed collaborative efforts. **<u>Session: Technology Matters – Available technology solutions</u>** **Moderator: Ms. Yumi Yasuda**, Deputy Director Ministry of the Environment, Japan • **Dr. Sachiko Hayashida**, Research Institute for Humanity and Nature (RIHN) • **Mr. Masahiro Nochi**, System Engineering Service Co., Ltd • **Dr. Minoru Fujii,** The National Institute for Environmental Studies (NIES) • **Dr. Chandran Remi**, Remote Sensing Technology Center of Japan (RESTEC) By introducing examples of technologies related to air pollution and climate change countermeasures in especially South Asia, it aims to provide business matching opportunities: "issues to be solved" and "solutions that can be provided".
15.30 – 16.15	**<u>LowCarbon.Earth: Clean Air Innovation through Green Startups</u>** **<u>Panel Discussion: Investment opportunities in the domain of air pollution and GHG emission mitigation solutions</u>** **Panellists** • **Mr. Mudit Narain**, Vice President – Investments, Blume Ventures (TBC) • **Ms. Ruchira Shukla**, Co-Founder and Managing Partner, Synapses • **Ms. Vinutha Raju**, Vice President of Investment, Climate Angels • **Ms. Anita George**, Ex-Senior Director Energy, World Bank The panel discussion featuring investors will focus on the investment opportunities in air pollution and GHG emission mitigation solutions. These experts will discuss the growing market for environmental technologies, the criteria for funding innovative projects, and the potential returns on investment. The session will highlight successful case studies and explore the future landscape of sustainable investment.
16.15 – 16.30	Tea Break
16.30 – 17.00	**<u>LowCarbon.Earth: Clean Air Innovation through Green Startups</u>** **<u>Panel Discussion: What will it take to solve air pollution?</u>** **Panellists** • **Mr. Akshay Singhal**, Founder @ Log9 (TBC) • **Ms. Vasudha Madhavan**, Founder & CEO, Ostara Advisors (TBC) • **Mr. Guru Inder Mohan Singh**, Founder & CEO, Carbon Circle (TBC) • **Mr. Kartikey Hariyani**, Founder & CEO, ChargeZone • **Mr. Raghav Arora**, Founder & CTO, Statiq • **Mr. Punit Goyal**, Founder, BluSmart The panel discussion will bring together startup founders to address the critical question: What will it take to solve air pollution? These entrepreneurs will share their innovative approaches and solutions

Time	Agenda
	aimed at combating air pollution. The session will explore the challenges and opportunities they face, the role of technology, and the potential for impactful partnerships.
17.00 – 17.30	**Donor landscape for addressing air pollution** • Representative from Asian Venture Philanthropy Network (AVPN) • Member for AVPN's Network Startups in India offer innovative solutions to tackle air pollution and achieve net-zero carbon emissions. Leveraging technology and entrepreneurship, these ventures focus on renewable energy, clean transportation, waste management, and green infrastructure. Supported by diverse funding sources, startups play a crucial role in driving sustainable development and environmental stewardship.
17.30 – 18.00	**Showcase: Featuring selected startups working to address air pollution** • Paddy straw as replacement for wood panel • Straw as a source for packaging • Starw as source for bio – CNG • Paddy straw for Biochar
18.00 – 18.15	**Closing Remarks and Vote of Thanks** • **Ms. Mihoko Nagai**, First Secretary, Embassy of Japan to India • **Mr. Shombi Sharp**, UN Resident Coordinator for India • Representative from CPCB • **Mr. Sh. Khanendra D. Bhardwaj**, Regional Director & Head, Regional Directorate – Delhi, NPC
18.15	**Cocktail and networking dinner (by invitation)**