NEWSWATCH

INDIAN ENVIRONMENTAL ASSOCIATION

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From the President's Desk:





Dear friends and members of IEA, **the Indian Environmental Association**
Greetings from me and the entire IEA Board

We are entering November and it is a month of Festivals. WISH ALL IEA MEMBERS AND WELL WISHERS A HAPPY DIWALI AND PROSPOROUS NEW YEAR as per Hindu calender.
Hope the October heat subsides and winter will bring in fresh and cool breeze.
IEA will actively participate and will be a major partner in the upcoming Exhibition by Envirotech at CIDCO exhibition hall Navi Mumbai. If you all recollect, IEA had held a round Table Conference last year in association with Envirotech on the subject of CETP. This year, apart from Round Table we can plan for more activities, if you come up with any suggestions. The event is a full three day event on 4th , 5th and 6th February 2027. IEA is likely to hold a Round Table on 5th February 2027.
Based on the suggestions of members, following topics have been shortlisted for IEA is Round Table.

1. Sludge treatment including drying

2. Application of Solar Energy for large ETP / CETP and ZLD plants

3. Environmental Infrastructure

I request all of you to provide suggestions for any more topics of oncoming Round Table.

IEA has been invited as a supporting organization at the upcoming Envirotech Exhibition at CIDCO.
Do take the advantage of this exhibition, which has been wholeheartedly been supported by IEA.
Of course IEA members get special preference and heavy discounts.
IEA Round Table is free for all members.
Many of you must be knowing the famine that affected Maharashtra, especially Marathwada region happened in 1972. some of the young colleagues may not know. Now the scenarios is almost repeating in 2026 after 54 years. The rains were scanty this time. Forget about water for agriculture, there is no water for cattle and at a few places, even for drinking and human consumption.
Kindly suggest how we can help the farmers of Maharashtra. Continuous research is required in this field in the quest of newer Water and Wastewater Treatment Technologies which is the need of the hour.
Do contribute to the NewsWatch on current Environmental issues. You may e-mail the articles, and newspaper cuttings to indenvassociation@gmail.com
To cover the cost of the NewsWatch publication, we have decided to accept advertisements related to the Environmental field in the NewsWatch. Do enquire for the same on the above e-mail ID

Yours truly

M A Naik
President IEA



Newswatch at a glance

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Climate change is killing hundreds of thousands — a kidney specialist's concerns

The health consequences of climate change are escalating, with 71% of 2023's 710,000 heat-related deaths attributed to human-caused warming



by Peter Stenvinkel

Professor of Nephrology, Karolinska Institutet

Summary

- Climate change is causing significant health impacts, with heat-related deaths reaching 710,000 in 2023, largely due to human-caused warming.
- Chronic kidney disease is particularly vulnerable, as extreme heat disrupts the body's balance.
- While global leaders discuss climate less, national policies and local actions like cleaner energy and urban cooling offer immediate health benefits.

The evidence that climate change threatens human health has never been stronger. Yet a new report suggests that world leaders are giving less attention to its health consequences in international political debate.

The 2026 Lancet Countdown report estimates that heat was associated with 710,000 deaths worldwide in 2023, with around 71 per cent attributable to human-caused climate change. Researchers calculated this by comparing estimated heat-related deaths at the temperatures actually experienced with those expected in a world without human-caused warming. The difference represents the additional deaths associated with climate change.

Heat can cause fatal heatstroke and worsen existing conditions, including heart and kidney disease. The figure is a statistical estimate of the additional deaths caused by warming, rather than a count of individual deaths directly identified as resulting from climate change.

Meanwhile, the proportion of countries whose leaders discussed the relationship between climate change and health during the United Nations General Debate fell from 66 per cent in 2021 to 26 per cent in 2025. The General Debate is the annual gathering at which world leaders address a broad range of international issues.

Europe's record-breaking heatwaves during the summer of 2026 brought the consequences of rising temperatures into sharp focus. Research examining 854 European cities estimated more than 50,000 heat-related deaths that summer, with around two-thirds attributable to human-caused warming. Using a similar approach, researchers compared the estimated death toll under actual temperatures with the number expected without the additional warming caused by human activity.

Climate change competes with more immediate political concerns, including energy prices, economic pressures and international conflicts. The health benefits of cutting emissions may take time to become visible, while governments face pressure to respond to events unfolding today.

But fewer mentions in UN speeches do not necessarily mean that governments are doing less. The same Lancet Countdown analysis found that 93 per cent of national climate commitments submitted in 2025 mentioned health. Governments may also act through heat-warning systems, cleaner transport or building regulations without repeatedly invoking climate change in international speeches.

The more important question is whether policies deliver measurable protection. Announcing a plan provides little reassurance if vulnerable people remain exposed to dangerous heat or health services lack the resources to respond.

The kidneys reveal a growing health threat

As a kidney physician, I see particular reasons for concern. Chronic kidney disease affects hundreds of millions of people worldwide. The kidneys help filter waste from blood and maintain the body's balance of water and salts, making them vulnerable when extreme heat disrupts that balance.

Recent research links hot temperatures with increased kidney-related illness. Heat stress and dehydration can contribute to acute kidney injury, particularly among people working in hot conditions and those with existing health problems. Whether repeated heat exposure accelerates chronic kidney disease across the wider population is less certain and remains an important research question.

Air pollution may also affect kidney health. A systematic review found associations between exposure to several common air pollutants and poorer measures of kidney function.

Health benefits that can be felt now

ome climate measures can improve health well before the full benefits of reduced global warming become apparent.

Cleaner energy can reduce harmful air pollution. The Lancet Countdown estimates that declining fossil fuel-related air pollution has helped prevent around 323,000 premature deaths annually across at least 77 countries.

Trees provide shade and cooling in cities, while restored wetlands can help manage flooding and support biodiversity. A review of research on urban trees found consistent cooling benefits, although their effectiveness depends on local climate and how cities are designed.

The healthcare system also has responsibilities. The sector accounts for around 5 per cent of global greenhouse gas emissions. Reducing waste and unnecessary resource use can contribute to a more sustainable service, provided patient care is protected.

Biodiversity and the library of life

Human health also depends on functioning ecosystems. The international biodiversity science body IPBES has documented how biodiversity loss is connected with threats to water, food and health. Healthy ecosystems are valuable in themselves, and Indigenous peoples and local communities have long contributed knowledge and stewardship essential to their protection.

Nature is also an extraordinary library of biological solutions developed through evolution. Many medicines have come from natural products or compounds inspired by them. Scientists are now exploring how artificial intelligence can help identify promising compounds from biological data, potentially speeding up early stages of drug discovery. These possibilities are exciting, but translating a promising compound into a safe and effective treatment requires extensive research.

Protecting biodiversity is therefore relevant to both present health and future scientific discoveries. AI may help researchers understand some of nature's complexity, but it cannot restore an extinct species or replace the ecological knowledge held by communities.

The political challenge is to connect the evidence of harm from climate change with practical decisions that protect people. Climate change is already affecting health, and the benefits to human health of protecting the environment are not confined to some distant future.
Destroying the natural systems that sustain health while scientists are still learning how they work would be a costly mistake.



By Sudesh Kini
Turning waste into treasure
Mangaluru, Karnataka, India

Having worked in waste management for several years, I have always been curious about how thermocol is handled. It is one of those materials we see in our waterways all the time, yet recycling options have been very limited.
Working closely with local bodies and partners has shown me that the biggest gaps are often in the overlooked waste streams. That is why it is encouraging to see a practical solution finally taking shape and reaching the people who need it.

What if Thermocol waste could have a second life?

Thermocol (EPS) is one of the most overlooked waste streams along our coast. Light, bulky and rarely collected, it ends up in landfills, drains and on our beaches. We're changing that across Coastal Karnataka. We recover discarded thermocol, compact it, and channel it to recyclers, bringing this material into the recycling value chain. The result:

- Less waste going to landfills

- More material recovered for recycling

- A cleaner coastline for everyone

We invite ULBs, Gram Panchayats, MRF operators, waste collectors and recycling partners to join us in making thermocol recovery a regular part of local waste management.

Let's give thermocol a new purpose and turn waste into resources together.
If you work in waste management or recycling in Karnataka or anywhere on the west coast.

Ten months into our Thermocol Waste Management initiative, we have collected an astonishing 2000 kgs of thermocol waste! From identifying thermocol waste generators and undertaking routine collection to tackling odour and contamination that comes with every box of thermocol — it's not been easy. Next, we are moving towards recycling thermocol locally. Stay tuned!

Zero Waste Ladakh



One year ago, we embarked on a journey to tackle thermocol waste in the High Himalayas. Today, we are proud of how far we have come.

To our partners, **SUPREME PETROCHEM LTD**, your support has been the foundation and drive for this initiative. Thank you for believing in us. We are excited for where we are headed next.

Here's to celebrating our achievements

🟢 Setting up Ladakh's first Thermocol Collection Centre

🟢 Enrolling 40+ thermocol waste generators

🟢 Collecting 2MT+ of thermocol waste

🟢 Hosting our Partners for their field visit

🟢 Exposure visit to thermocol recycling facility in Delhi

🟢 Securing thermocol from municipal waste management facilities

🟢 Conducting awareness activities, engaging 520+ individuals

Standard EPS and FR Grade EPS look identical.

They perform very differently in a fire. Here's when FR grade is not a specification preference — it's a legal requirement.

FR GRADE EPS: THE BASICS

FR (Fire Retardant) EPS resin contains additives that significantly slow the spread of flame and reduce the rate of combustion. When ignited and the flame source removed, FR EPS self-extinguishes rather than continuing to burn.

WHEN FR GRADE IS LEGALLY REQUIRED:

✦ Building & construction insulation (EU): EN 13163 with Euroclass E or better. Most EU member states require FR EPS for external wall insulation systems (ETICS).

✦ GCC construction applications: Gulf GSO standards increasingly specify fire performance for thermal insulation in commercial buildings.

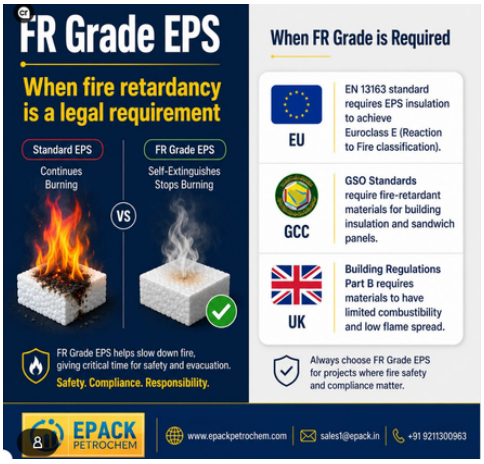
✦ UK building regulations: Part B (fire safety) requirements apply to EPS used in structural insulated panels and cavity wall insulation.

✦ Cold storage facilities: Many food-grade cold storage projects specify FR EPS for interior insulation panels.

WHAT TO LOOK FOR ON THE COA:
→ Declared flame retardant system (HBCD alternatives are now required in EU)
→ Fire classification test result (EN ISO 11925-2 / EN 13823)
→ LOI (Limiting Oxygen Index) value — FR EPS typically >26%

COMMON MISTAKE:

Ordering standard grade EPS for a construction application that requires FR — because FR wasn't specified in the initial RFQ. The cost of replacing installed insulation is significantly higher than the price difference between standard and FR grade.



'Research based on GIS and remote sensing helps in identifying reliable and sustainable drinking water sources'

Down To Earth speaks with Associate Professor Kanwarpreet Singh about how advanced tools are being used to map groundwater recharge zones and support the sustainability of water resources in the Himalayan terrain of Kinnaur in Himachal Pradesh

Nearly half of Kinnaur district in Himachal Pradesh has moderate to very high potential for groundwater recharge, according to a new study that uses advanced geospatial tools to map water sustainability in the fragile Himalayan terrain.

Kanwarpreet Singh, associate professor in the department of civil engineering at Chandigarh University and lead author of the recently published article in the journal Nature, speaks to Susmita Sengupta for Down To Earth about the use of advanced tools in mapping groundwater recharge zones for the sustainability of groundwater sources.

Susmita Sengupta (SS): **In your recent study, you have used Geographic Information System (GIS) and remote sensing (RS) along with other advanced techniques to map groundwater recharge zones in complex Himalayan terrain. How do you think such tools are advantageous?**

Kanwarpreet Singh (KS): This study delineates groundwater recharge potential zones in the complex Himalayan terrain of Kinnaur district (Himachal Pradesh), showing that 45 per cent of the study area falls under medium to very high recharge potential. It highlights the dominant role of rainfall, land use, and terrain factors like slope, Topographic Wetness Index (TWI), curvature in controlling recharge.

,The spatial distribution of high and very high groundwater potential zones in Kinnaur district indicates a clear pattern, mainly influenced by terrain, hydrological and geological characteristics. These zones are mostly found in the south and south-western regions of the district, especially in and around Nichar, Sangla Valley (Baspa Valley), the Kalpa region and other lower areas of the Sutlej river basin.

One of the main advantages of this research is the use of geoinformatics, particularly GIS and RS, which allowed the incorporation of several hydrogeological parameters into a single analytical framework. Remote sensing data were used to derive high-resolution Digital Elevation Models (DEM), which in turn enabled the extraction of vital terrain parameters including slope, curvature, drainage density and TWI.

Satellite-based data, such as Landsat imagery, played a crucial role in producing precise land use/land cover maps, while rainfall data from international archives made it possible to incorporate spatial and temporal climatic variability.

These various datasets were systematically weighted and integrated using GIS-based multi-criteria decision analysis (MCDA) and the analytic hierarchy process (AHP). This method offered a scientifically sound and spatially explicit picture of groundwater recharge potential, which is otherwise difficult to obtain in mountainous landscapes with limited data.

These areas are highly conducive to the construction of artificial recharge systems, including percolation tanks, check dams, recharge trenches and infiltration galleries. They may also be crucial for the management of springsheds, where safeguarding and improving recharge zones upstream can significantly increase spring discharge downstream.

The study emphasises that groundwater recharge in Kinnaur is both localised and terrain-specific, with the southern valleys acting as recharge hotspots. GIS and RS technologies have proved highly effective in capturing this spatial heterogeneity and offer practical solutions for the sustainable management of water resources.

SS: How effective can such studies be for different government programmes and state action plans to develop a water security plan?

KS: The current work provides a scientifically proven and spatially explicit model that can be effectively integrated into State Action Plans on Climate Change and water resource management plans, particularly in Himalayan regions such as Himachal Pradesh.

Through an AHP-based GIS multi-criteria technique, the study identifies groundwater recharge potential areas based on nine key hydrogeological and terrain parameters, while also accounting for variability in rainfall over time—an important factor under changing climatic conditions. Priority areas can thus be targeted for specific recharge interventions, while low-potential areas may require alternative water management approaches.

State agencies can directly use the generated groundwater potential maps to:

- select appropriate sites for artificial recharge systems (check dams, percolation tanks, recharge pits)
- assist in the planning and regulation of groundwater extraction
- design water security-oriented climate adaptation strategies

The inclusion of time-varying rainfall data adds further value in the context of climate change, where rainfall patterns are becoming increasingly unpredictable. It enables planners to move beyond conventional assessments and consider dynamic recharge processes, thereby enhancing the resilience of water management plans.

Further, the outputs can be effectively integrated with other government programmes such as watershed development, spring rejuvenation and rural water supply schemes, improving their overall performance. The spatial prioritisation offered by this research ensures more efficient allocation of financial and technical resources, avoiding trial-and-error approaches and focusing efforts on high-impact zones.

This targeted strategy enhances infiltration and contributes to the recovery of declining spring discharge, which is vital for local communities. In a tourism-dependent region like Kinnaur—where areas such as Sangla Valley, Kalpa and Chitkul rely heavily on natural water sources—the restoration of springs would help ensure water availability for tourism, hospitality and livelihoods. The research thus also supports eco-tourism and the long-term environmental sustainability of the region.

SS: Jal Jeevan Mission is in its last lap and is focusing on the sustainability of drinking water sources in the country. How do you think your study can add value to the sustainability plan?

KS: The research provides a scientific basis for improving source sustainability under the Jal Jeevan Mission. It helps in identifying reliable and sustainable drinking water sources, especially in areas such as Nichar, Sangla and Kalpa, by mapping zones with medium to very high groundwater recharge potential (around 45 per cent of the area).

It supports the scientific selection of sites for borewells and recharge structures based on integrated parameters such as slope, drainage, lineaments and TWI, thereby reducing failure rates. The outputs can directly strengthen source sustainability plans by identifying recharge zones and guiding targeted interventions.

Additionally, by incorporating terrain and rainfall variability, the study helps reduce the risk of source depletion due to climate change and excessive groundwater extraction, making rural water supply systems more robust and sustainable.

Green hydrogen: India's big ambitions, costly realities

India's green hydrogen ambitions are running up against high production costs, infrastructure gaps and uncertain domestic demand, even as the government seeks to position the country as a global export hub.

Sanchit S Agarwal Saswata Chaudhury

Senior Fellow, The Energy and Resources Institute, Associate Fellow, The Energy and Resources Institute

Green hydrogen could play a key role in India's clean energy transition, particularly in sectors where direct electrification is difficult.

Green hydrogen (GH) is produced by splitting water using renewable energy, while grey hydrogen is made from natural gas, releasing significant CO_2 emissions.
GH can replace grey hydrogen in fertilisers and refineries, coal in steelmaking, and fossil fuels in parts of the chemicals, petrochemicals and heavy transport sectors, including shipping.

Besides reducing emissions, it can lower dependence on imported fossil fuels and industrial feedstocks, limit exposure to global price volatility and strengthen energy security. However, large-scale adoption will depend on costs, end-use efficiency and supporting infrastructure.

Recognising GH as a strategic energy carrier, the Government of India launched the National Green Hydrogen Mission (NGHM) in January 2023. The mission aims to make India a global hub for GH production, use and exports, with a target of at least 5 million tonnes (Mt) of annual production by 2030.

By December 2025, the government had awarded incentives for 0.862 million tonnes per annum (MTPA) of production capacity and 3,000 MW per annum of electrolyser manufacturing. The awarded GH production capacity represents only about 17 per cent of the 2030 target.

Cost remains a major barrier to large-scale GH adoption in the domestic market. The International Energy Agency (IEA) has also highlighted this challenge. Its recent report says uncertain demand and project delays, partly due to slow infrastructure development, mean GH is unlikely to become cheaper than grey alternatives in the near future.

To address costs, NGHM provides short-term subsidies and policy support to incentivise production. It has also identified three ports — Deendayal, V.O. Chidambaranar and Paradip — as GH hubs to coordinate production, storage, handling and shipping for potential exports.

Under NGHM, Rs 174,900 million has been allocated to the Strategic Interventions for Green Hydrogen Transition (SIGHT) programme. Declining production subsidies on GH (Rs 50 to Rs 30 per kg) and green ammonia (Rs 8.8 to Rs 5.3 per kg) are available for only three yeaRs They cover only 10-15 per cent of the green-grey cost gap and are intended as a temporary incentive. Electrolyser manufacturing incentives are spread over five years, declining from Rs 4,440 to Rs 1,480 per kW.

Long-term sustainability will require measures beyond subsidies. These include creating demand in hydrogen-consuming industries through a Green Hydrogen

Production Obligation; reducing production costs through cheaper RE and domestic electrolyser manufacturing, supported by performance-linked incentives; and developing export markets along with carbon pricing for grey hydrogen

RE is a major cost component (50–70 per cent of GH production costs), particularly when round-the-clock supply is required. To lower production costs, encourage domestic adoption and strengthen India's export competitiveness, the government has notified the waiver of Inter-State Transmission System (ISTS) charges for eligible GH and green ammonia projects.

H_2 Trade: India

According to WITS data, India imported hydrogen worth $871,700 in 2024, while exports amounted to $17,400. Nigeria was the largest destination for Indian hydrogen exports (45.8 per cent), followed by Nepal, Bangladesh, Bhutan and Sri Lanka.

India has considerable scope to expand its export network. Current estimates suggest that the European Union and East Asia could together import around 3.4-6 million tonnes of GH annually by 2030. However, these figures understate the emerging GH market, because they do not distinguish hydrogen by electricity source or include trade in derivatives.

In July 2026, ACME Group (0.4 MTPA under NGHM) signed long-term supply agreements with Japan from its Paradip facility — 0.41 MTPA green ammonia for IHI and 1.0 MTPA green methanol for Mitsubishi Gas Chemical.

India has also pursued hydrogen cooperation and export-infrastructure partnerships with Germany and other countries.

Challenges and the Way Forward

Despite India's substantial RE potential, the economics of large-scale GH production will depend on land and water availability, and the cost of RE generation and electrolyseRs Water-stressed locations will need credible sourcing and treatment plans, including desalination where necessary.

Dependence on global supply chains for electrolysers and RE equipment also leaves GH production exposed to concentrated manufacturing and critical mineral dependencies.

Another challenge is the distance between RE generation centres and designated GH hub ports. Kandla port, for instance, is relatively close to renewable-rich clusters in Gujarat and Rajasthan, while Paradip is considerably farther from such areas.

The distance between RE sources and GH production facilities is, therefore, a critical consideration. Hydrogen can be produced using RE wheeled from distant generation facilities through ISTS.

Transporting GH over long distances also poses economic challenges because of the high costs of compression (200-700 bar) or liquefaction (-253°C).

A potentially more viable option is to convert GH into derivatives at the source and transport them through existing infrastructure.

Decentralised use by nearby refineries and fertiliser plants, preferably through blended natural gas pipelines, with only surplus production exported as ammonia, could further avoid the cost of transporting pure hydrogen.

Exports of GH and its derivatives can earn foreign exchange, reduce fossil fuel import bills and help projects achieve economies of scale.

While the domestic market for these products is still emerging and price-sensitive, an export-oriented approach could lower production costs and prices, thereby stimulating domestic demand.

Export markets add their own conditions: EU buyers require EU rules for renewable fuels of non-biological origin (RFNBO) compliance, including proof of RE sourcing. Certification and traceability must therefore be built in from the outset, alongside product quality, safe port operations and reliable delivery.

Building a robust GH value chain will require prioritising competitive production routes, targeting low-hanging applications where hydrogen is already in use, and complementing policy and financial incentives with demand-creation measures.

India can become a regional and global supplier of green hydrogen and its derivatives, but exports must reinforce — not distract from — the domestic transition. Success will depend on competitive low-emissions production, replacing fossil-based inputs at home, securing reliable export buyers and delivering measurable emissions reductions.



India's first hydrogen-powered train, Namo Green Rail, signals the country's clean energy ambitions, but scaling up green

ABOUT IEA

DIWALI GREETINGS TO ALL IEA MEMBERS

