

# HTAPC Newsletter

Issue 13, February 2025



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more update



# Accomplished Activities of Hub of Talents on Air Pollution and Climate (HTAPC)

Issue

13

## Exploring the PM<sub>2.5</sub> Trader Concept: Accountability and Technological Innovations for Air Quality and Health



On January 29, 2025, the Hub of Talents on Air Pollution and Climate (HTAPC), under the National Research Council of Thailand (NRCT), Ministry of Higher Education, Science, Research, and Innovation (MHESI), participated in the PMAC Side Meeting on the topic Exploring the PM<sub>2.5</sub> Trader Concept: **Accountability and Technological Innovations for Air Quality and Health**. The meeting took place at Centara Grand & Bangkok Convention Centre, CentralWorld, Bangkok. This meeting aimed to facilitate knowledge exchange on current trends in PM<sub>2.5</sub> pollution and its health impacts, as well as to explore technological and innovative approaches for monitoring PM<sub>2.5</sub> emissions. Additionally, discussions were held on the feasibility of implementing the "Polluter-Pays Principle (PPP)" in economic, political, and legal dimensions, emphasizing its potential applications in air quality management policies.

**Dr. Supat Wangwongwatana**, Director of HTAPC, participated as a speaker in a session titled "PM<sub>2.5</sub> Control Efforts by Thai Governments and Civil Societies." The presentation addressed various measures, policies, and initiatives undertaken by government agencies, as well as the role of civil society in mitigating PM<sub>2.5</sub> pollution. Emphasis was placed on fostering collaboration between government agencies and the public to effectively address the PM<sub>2.5</sub> issue in Thailand.

## Seminar on "What Substances Are in PM<sub>2.5</sub> in Thailand?"



On February 3, 2025, the Hub of Talents on Air Pollution and Climate (HTAPC), under the National Research Council of Thailand (NRCT), Ministry of Higher Education, Science, Research, and Innovation (MHESI), organized a seminar titled **"What Substances Are in PM<sub>2.5</sub> in Thailand?"** as part of the 2025 Inventors' Day event at the Main Activity Stage, Event Hall 103, BITEC Bangna, Bangkok. In addition to the in-person audience, the discussion was accessible to online participants via Zoom and was broadcast live on Facebook Live.

**Dr. Wiparat De-ong**, Director of NRCT, honored the event with her presence and delivered the opening remarks. She emphasized NRCT's role as a key funding agency for research and innovation aligned with the nation's strategic priorities, highlighting its continuous commitment to addressing the issue of PM<sub>2.5</sub>. In recent years, public concern has grown regarding the sources and composition of contaminants associated with PM<sub>2.5</sub>. In response, NRCT has placed significant emphasis on disseminating accurate scientific knowledge to the public through experts in relevant fields to enhance public awareness and understanding.

The recent panel discussion was moderated by **Dr. Supat Wangwongwatthana**, Director of HTAPC, and featured distinguished experts, including **Associate Professor Dr. Nares Chuersuwan** from Suranaree University of Technology, **Associate Professor Dr. Surat Bualert**, Head of the Atmospheric Science Research Group, **Associate Professor Dr. Somporn Chantira**, Head of the Environmental Science Research Center at Chiang Mai University, and **Dr. Pakorn Petchprayoon**, Director of Geo-Informatics Product Innovation Office at the Geo-Informatics and Space Technology Development Agency (GISTDA). The seminar aimed to address key questions regarding PM<sub>2.5</sub> composition and its implications, including: How is the composition of PM<sub>2.5</sub> determined?, What can the chemical components of PM<sub>2.5</sub> reveal?, What substances are found in PM<sub>2.5</sub> in Bangkok and its metropolitan area? and What substances are present in PM<sub>2.5</sub> in Chiang Mai province? This expert discussion played a crucial role in disseminating accurate information to the public and stakeholders regarding the composition, sources, and health and environmental impacts of PM<sub>2.5</sub> in Thailand. The insights gained from the session are expected to contribute to policy development and air pollution mitigation strategies in the future. The NRCT and HTAPC remain committed to supporting research and innovation in PM<sub>2.5</sub> management, aiming to enhance public understanding and promote effective long-term strategies for reducing air pollution and its adverse effects.

## Training of the Trainer Program on Air Pollution and Climate – Year II



## Training of the Trainer Program on Air Pollution and Climate – Year II

From February 17 to 21, 2025, the Hub of Talents on Air Pollution and Climate (HTAPC), under the National Research Council of Thailand (NRCT), Ministry of Higher Education, Science, Research, and Innovation (MHESI), organized the second session of the **"Training of the Trainer"** program on air pollution and climate at the VIC3. The training program covered key aspects of air pollution, including fundamental knowledge of air pollutants and short-lived climate pollutants (SLCPs), current air pollution situations, relevant regulations and standards, major pollution sources, and air pollution control measures.

Participants gained insights into ventilation systems, dust and gas control, vapor and odor management in industrial sectors, as well as emission inventory development and the application of mathematical models for impact assessment. Additionally, the program provided hands-on training on air pollution monitoring techniques and guided participants in developing research proposals on air pollution, enabling them to seek funding from various sources.



## Why Is the Black Smoke Detection Measure Ineffective in Solving the PM<sub>2.5</sub> Problem?

PM<sub>2.5</sub> is fine particulate matter has been a major threat to public health in Thailand for over a decade, especially during the high-pollution season when dry weather conditions persist from November to April each year. The meteorological conditions during this period are not conducive to air circulation and pollutant dispersion, including high atmospheric pressure, low wind speeds, and temperature inversions. As a result, PM<sub>2.5</sub> concentrations in the air often exceed Thailand's air quality standards, posing serious health risks, particularly to vulnerable groups such as children, the elderly, and individuals with asthma or allergies. These groups are more susceptible to cardiovascular and respiratory diseases caused by PM<sub>2.5</sub> exposure.

The transportation sector is a major source of PM<sub>2.5</sub> pollution in urban areas, particularly from diesel vehicles that emit black smoke from their exhaust pipes. One of the government's measures to address PM<sub>2.5</sub> pollution from diesel vehicles is to detect and penalize those emitting black smoke beyond the allowable limits. In addition to fines, authorities issue orders prohibiting the use of such vehicles until they are repaired and their emissions brought within the acceptable standards. In theory, this should lead to fewer high-emission vehicles on the roads. However, black smoke-emitting vehicles remain a common sight. Why is this the case? Let's explore the answer. The Land Traffic Act, B.E. 2522 (1979), amended in B.E. 2565 (2022), Section 10 bis, states: "No person shall operate a vehicle whose engine emits gases, dust, smoke, or chemical particles beyond the limits set by the National Police Chief." To enforce the prohibition on vehicles with excessive black smoke, traffic officers rely on Section 143, which consists of two key subsections:



Section 143 (1): "If a vehicle is in an unsafe condition and its continued use poses an immediate and obvious danger, traffic officers shall issue an order prohibiting its use. The driver must remove the vehicle from the roadway as soon as possible. If the driver fails to do so, the traffic officer or an authorized person may move the vehicle."

Section 143 (2): "If a vehicle is in a condition that does not meet safety standards but is not immediately hazardous, the traffic officer may temporarily suspend its use. The owner, possessor, or driver must repair or modify the vehicle to comply with motor vehicle or transportation laws within a specified period, which shall be no less than 15 days and no more than 60 days, depending on the vehicle's safety condition. During this period, the vehicle may continue to be used."

In practice, traffic officers typically enforce Section 143 (2) when issuing prohibitions on high-emission vehicles. This means that even after receiving a prohibitive order, a vehicle emitting excessive black smoke can still be used for at least 15 to 60 days, with the usual practice being around 30 days. This explains why we still see these polluting vehicles on the roads despite the enforcement measures.

It is undeniable that vehicles emitting black smoke beyond the legal limit are in poor condition and pose an evident hazard, especially to pedestrians and commuters who are forced to inhale PM<sub>2.5</sub> from these emissions. Allowing such vehicles to continue operating exacerbates the problem and aligns more with Section 143 (1) than Section 143 (2).

Therefore, instead of enforcing Section 143 (2), which permits temporary use of non-compliant vehicles, traffic officers should exercise their authority under Section 143 (1) to immediately prohibit the use of vehicles exceeding black smoke emission standards. These vehicles should be completely barred from the roads until they are repaired and meet emission standards. Such an approach would ensure a more effective solution to the PM<sub>2.5</sub> pollution crisis.

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## We cordially invite you to join us

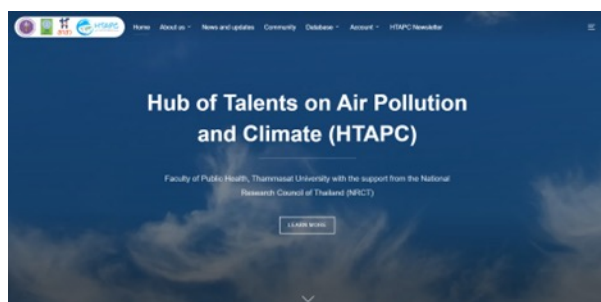
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### HTAPC Membership Form for Experts



Official website of Hub of Talents on Air Pollution and Climate (HTAPC)

<https://www.htapc.info>



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