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South - South Knowledge Sharing on Air Quality and Carbon Neutrality

Regional Knowledge Sharing Event

Air Quality and Climate Benefits

of Energy Policies

26 June 2023 | 14:00-17:00 (PHT)

#### **Everlyn Tamayo**

Air Quality and Climate Change Science Lead Clean Air Asia







# GUIDANCE FRAMEWORK TOWARDS CLEAN AIR AND CLEAN ENERGY IN ASIA



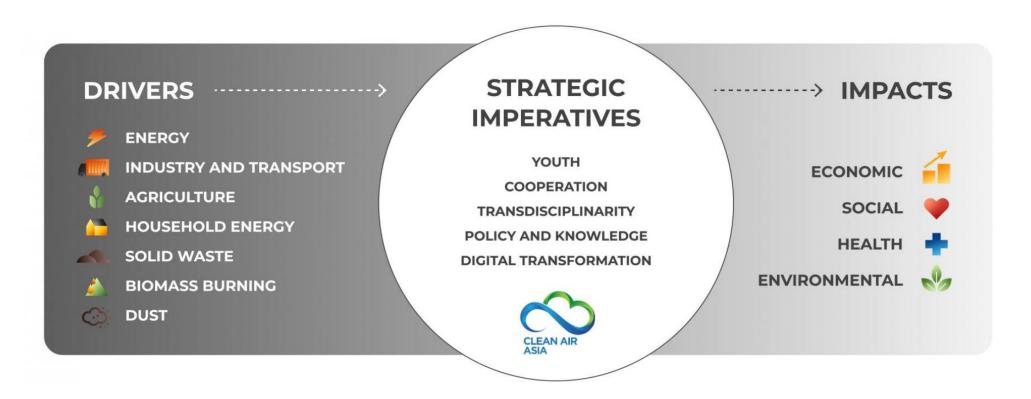
## REDUCING EMISSIONS FROM COAL-FIRED POWER PLANTS & HEAVY-POLLUTING INDUSTRIES

Everlyn Tamayo, Dang Espita-Casanova, Glynda Bathan-Baterina, Cris Beo, Pratik Jha Clean Air Asia

## **CLEAN AIR ASIA**



- Our work focuses on implementing solutions that reduce air pollution and its detrimental health impacts, and that mitigate the climate crisis.
  - Approach: science-based policy guidance and capacity building towards stakeholder action at the city, national, and regional levels.



## IMPACT OF ENERGY SECTOR ON AIR QUALITY, CLIMATE & HEALTH





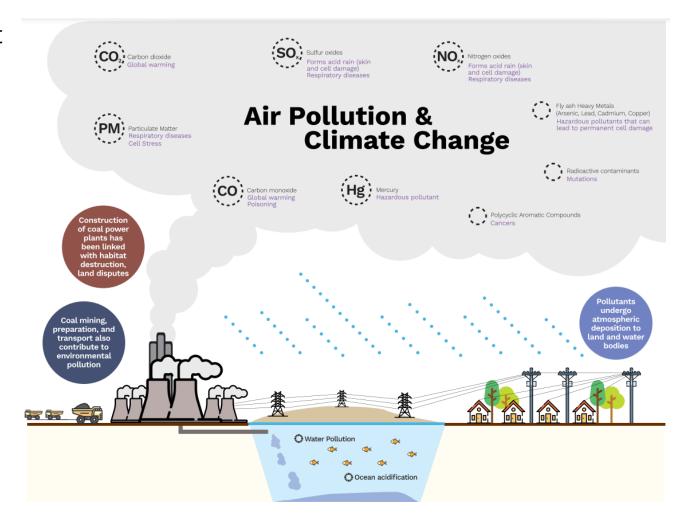
- Energy production and use is the largest source of anthropogenic air pollution in the world
  - Energy efficiency can reduce both indoor and outdoor concentrations of air pollutants and drive a range of economic, environmental and health benefits associated with local air quality
  - Source: <u>International Energy Agency</u>
- Energy accounts for over two-thirds of global GHG emissions
  - "Energy is at the heart of the solution to the climate challenge"
  - Source: <u>IPCC (2020)</u>
- Asian countries with higher CO<sub>2</sub> emissions per capita/higher fossil fuel consumption have higher prevalence of lung and respiratory diseases
  - A 1% increase in fossil fuel consumption may accelerate lung and respiratory diseases by ~1.38%
  - Data from 18 low and middle-income Asian countries from 1991-2018
  - Source: Taghizadeh-Hesary et al. (2020). <u>The Energy-Pollution-Health Nexus: A Panel Data Analysis of Low- and Middle-Income Asian Nations</u>. ADB Institute Working Paper

## IMPACT OF CFPs/ENERGY SECTOR ON AIR QUALITY, CLIMATE & HEALTH



- Coal-fired power plants (CFPs) pose significant threat to people's health and the environment due to the emission of toxic air and climate pollutants
  - Koplitz et al. (2017), projected an estimated 70,000 total excess deaths due to coal-based power generation by 2030, which is 50,000 more than the 2011 estimate of 20,000 excess deaths in the region.
  - It was found that for every 1 kilowatt (kW)
    increase in coal capacity per person in a
    country, the relative risk for lung cancer
    increased by a factor of 59% (Lin et al., 2019).

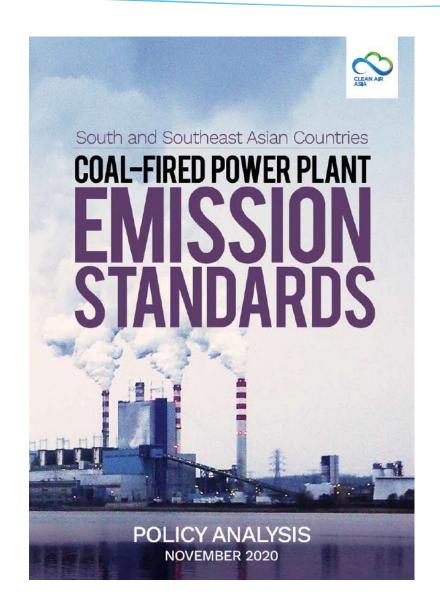
IN ASIA, WHERE LOW-INCOME COUNTRIES
AND COMMUNITIES ALSO FACE THE LARGEST
BURDEN OF CLIMATE AND AIR QUALITY IMPACTS,
REDUCING EMISSIONS FROM CFPs THROUGH MORE
STRINGENT STANDARDS AND RELATED POLICIES
CAN IMPROVE THE HEALTH OF CITIZENS. Clean Air



## INTRODUCTION: THE GUIDANCE FRAMEWORK



- This Guidance Framework builds on Clean Air Asia's work on international best practices on CFP-related policies vis-à-vis the CFP status quo in the Philippines, Vietnam, Indonesia, Bangladesh, and Pakistan, which comprise a third of the total global planned increase in coal dependence.
- In addition to country-level strategies, Clean Air Asia aims to integrate the Guidance Framework Towards Clean Air and Clean Energy in Asia in policy development.
  - Approach: co-learning through the Communities of Practice and the Experts Advisory Council
  - The Guidance Framework aims to provide direction on concrete actions in achieving clean air and clean energy by reducing emissions from CFPs and other heavy-polluting industries and eventual transition to clean energy.



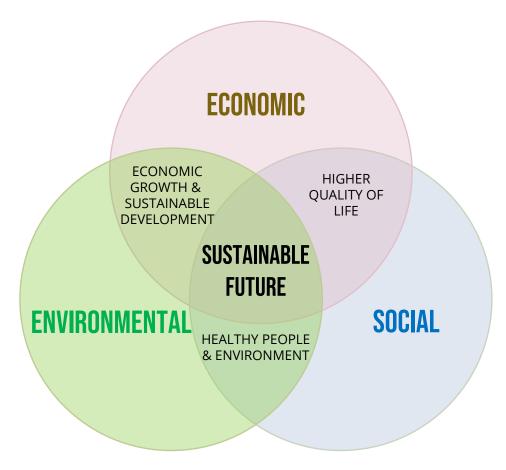
## GUIDANCE FRAMEWORK TOWARDS CLEAN AIR AND CLEAN ENERGY IN ASIA



#### **VISION**

Clean Air Asia's vision for the decade is a world with clean air, blue skies, and a stabilized climate for people and the planet.

- ✓ To improve air quality and abate climate change while fostering economic growth and higher quality of life for people, aligned with the 2030 Sustainable Development Goals
- ✓ To accelerate the transition to cleaner energy and achieve targets of reduced CFP emissions by 2030 and carbon neutrality by 2050



## GUIDANCE FRAMEWORK TOWARDS CLEAN AIR AND CLEAN ENERGY IN ASIA



#### **GOALS**

To provide guidance and steer decision makers to attainable steps in **achieving clean air and clean energy in Asia**, aligned with WHO air quality guideline values, NetZero and climate targets

- ✓ Strengthen capacity of countries in **developing and implementing policies** related to emissions control and energy transition
- ✓ Highlight the need for a science-based (i.e., data driven) approach to inform policy and decisionmaking
- ✓ Encourage governments to adopt an **integrated strategy** to achieve clean air and clean energy to maximize **co-benefits**

## THE ROLE OF CLEAN AIR ASIA



Clean Air Asia works with policymakers, international and local experts, and community stakeholders at country-level. In this regional platform, the **Guidance Framework** is disseminated as key learning component of the **Community of Practice\***.



- In the establishment of the Community of Practice, Clean Air Asia is leading the:
  - 1. Continuous assessment of **policies**, **regulations**, **and institutional frameworks** related to CFPs and energy use and transition in Asia
  - 2. Provision of **technical advice** on the determinants and impacts of policies and actions on emissions reduction and clean energy
  - 3. Development of the detailed framework towards policies that will **reduce CFP emissions** and lead to more efficient and **sustainable energy** development and use
  - 4. Facilitation of relevant technical discussions, CoP meetings and consultations with the Advisory Group and partner countries

<sup>\*</sup>A CoP is a group of people who share a concern or a passion for something they do and learn how to do it better as they interact regularly (UNESCAP, 2020); CoP Components modified from <u>CDC</u>, <u>2015</u>.

## THE EXPERTS ADVISORY COUNCIL



#### Main role:

Provide advice to governments, in line with the **Guidance Framework Towards Clean Air and Clean Energy in Asia** ('Guidance Framework') which focuses on concrete actions in reducing emissions from CFPs and other industries through stringent controls and energy transition.

#### **Key activities**

- ✓ providing feedback to the Guidance Framework and meeting agendas
- ✓ sharing technical expertise through discussion forums, lectures, and consultation meetings
- ✓ review of pertinent documents, reports, and policy drafts

#### **Key topics in activities**

- ✓ Review and analysis of baseline emissions data towards revisions of emission standards and other regulations
- ✓ Assessment of existing technologies and policies on monitoring and controlling emissions
- ✓ Preparation needed for the implementation of stricter CFP emission standards and the transition to a Low Carbon Economy

## GUIDANCE FRAMEWORK TOWARDS CLEAN AIR AND CLEAN ENERGY IN ASIA



Implement guidelines on BAT, data transparency & interagency coordination

Implementation of institutional frameworks and policies on using energy-efficient BAT, ensuring data transparency of emissions testing, and integrating action across agencies (and sectors).

Capacity building through peer-to-peer co-learning approach

**COMMUNITY OF PRACTICE** 

#### **SHORT-TERM**

**MONITORING & EVALUATION OF POLICIES** 

## Data-driven planning and prioritization of measures

Use of data on (1) status, assessment, and impacts of CFPs, (2) all existing related policies on air pollution, climate change, and energy, and (3) best practices applied in other countries, for planning and prioritization of actions. This step covers alignment of targets with local and international commitments on emissions reduction considering health, air quality, climate and economic benefits.

## Implementation of policies on stricter emission standards & clean energy transition

Implementation of strict emission standards and other policies with commensurate penalties and emission charges; Implement energy transition plans or roadmaps towards reduced coal/fossil fuel dependence and to meet local, national, and international emission reduction and sustainability goals.

Review of guidelines on BAT, data transparency, & interagency coordination

Cascade implementation of guidelines across agencies and sectors, with emphasis on data transparency for the public.

#### **Decommissioning of CFPs**

In line with NetZero and carbon neutrality goals, construction of new CFPs are halted while existing plants are decommissioned and RE is used as main energy source. 2023 Edition

A sustainable future with reduced emissions from CFPs and other heavy industries through emission controls and energy transition

CLEAN AIR AND CLEAN ENERGY IN ASIA

### **MEDIUM-TERM**

## Maximize RE share in the energy mix while reducing coal consumption

During the energy transition period, implement strategies which increase RE in the energy mix and overall energy efficiency in CFPs. Alternative fuels (e.g., biomass co-firing, etc.) can be used in combination with pollution control technologies.

## Ensuring availability of ambient air quality and emissions data

Air quality monitoring and emissions data are available for use by the public for continuous monitoring of the performance of CFPs and other heavy industries.

**LONG-TERM** 

#### **Assessment of Impacts**

Assess effectiveness of the guidelines and policies to ensure (1) reduction in emissions from CFPs through control measures, strict standards, and stringent implementation of data collection with QA/QC; (2) significant reduction in coal dependence; (3) improved ambient air quality and reduced environmental and health impacts from CFPs; and (4) achievement of local, national, and international goals.

