



Tackling the Climate Crisis Transitioning to Green Economy

World Environment Day 2021

Are We Listening to What Nature is Saying ?

Nature has been firing “warning shots” but we were not listening (or even willing to listen?)

- SARs, Ebola, mad-cow disease, avian influenza
- Each time a species goes extinct

Zoonotic diseases are a major cause of concern as human and animal interface increase

- 70% of all infectious diseases are zoonotic
- Habitat depletion, ill-legal animal trade, etc

COVID pandemic – we should try our level best of not returning to what we consider as “Normal way of doing things”

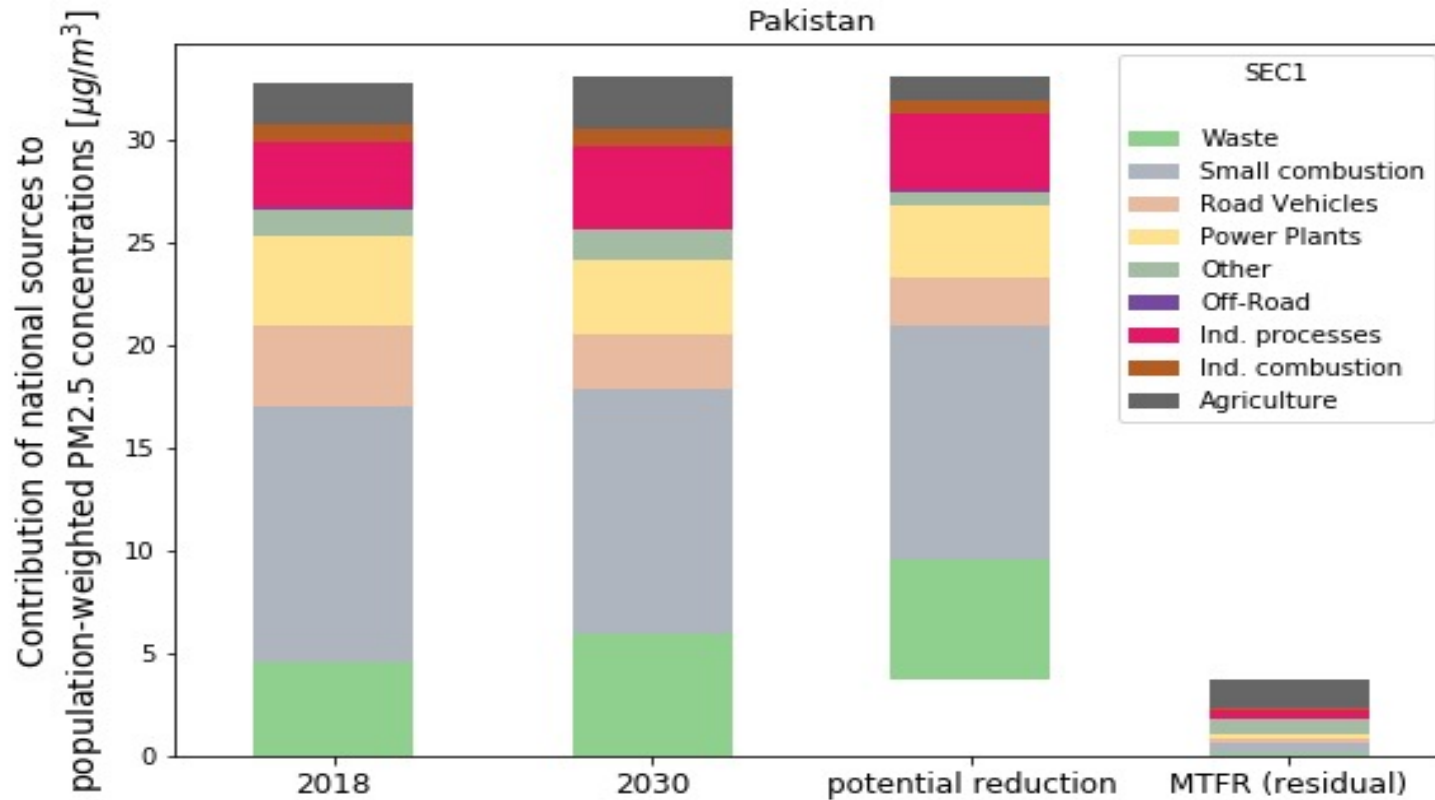
- Where we stand today is because “normal” was not sustainable

Understanding Problem

- To transition towards green economy, we need to understand where is the problem
- Air pollution is at dangerous levels and far above WHO limits
 - ✓ Has health impacts
 - ✓ Links with climate change
 - ✓ Impacts productivity and GDP growth
 - ✓ Causes natural capital to deplete
- Water usage and pollution is at unsustainable levels
 - ✓ Indus River is considered as one of the highest sources of plastic pollution of oceans
 - ✓ Waterborne diseases is major cause of concern
- Natural capital and habitat depletion
 - ✓ Depleting glaciers in Himalayas, Hindukush and Karakorum ranges

National Contributions to Air Pollution

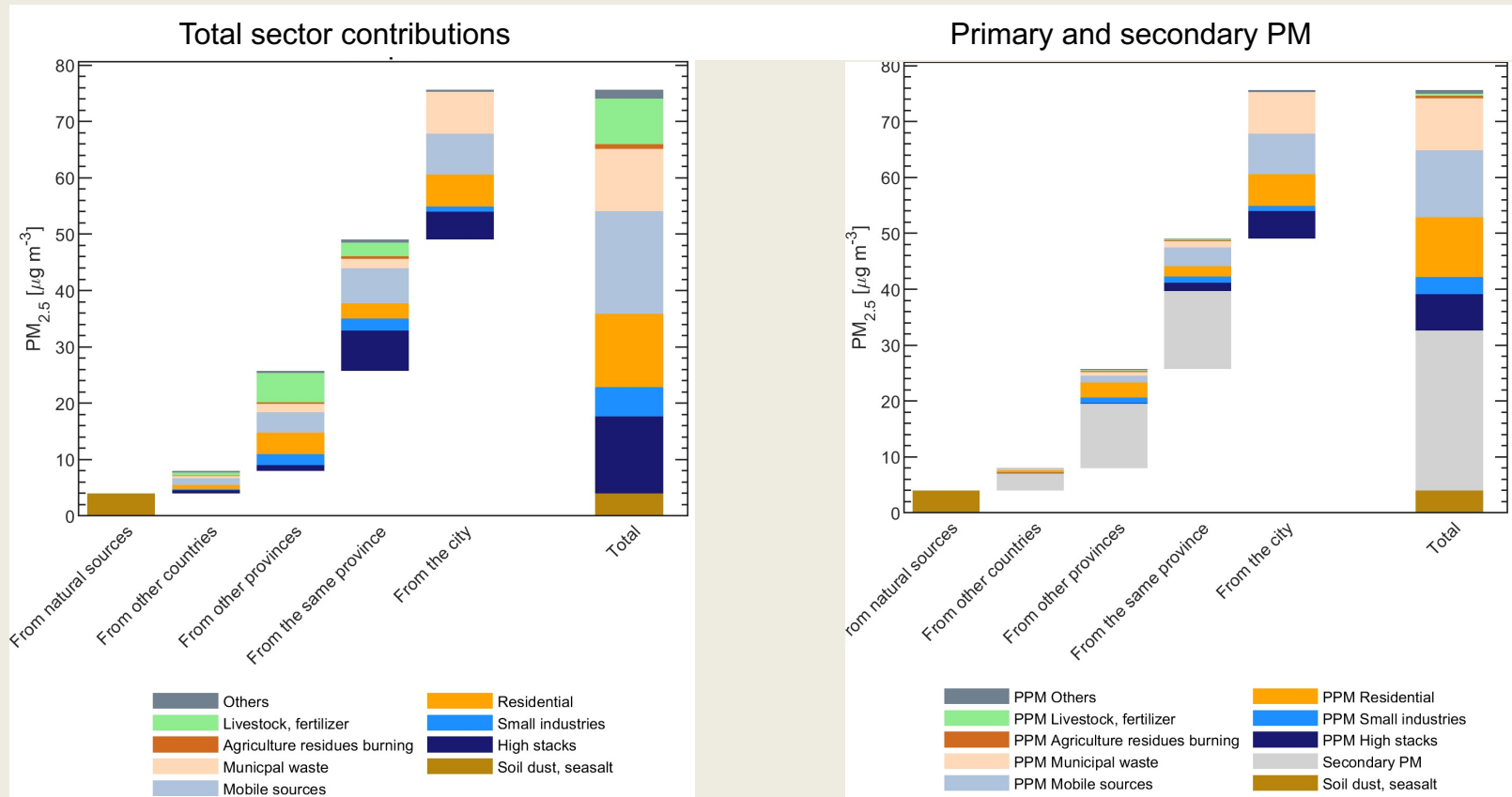
Source apportionment of (population-weighted) PM2.5 exposure in 2018



Source: IIASA GAINS



Sources of Pollution in Islamabad



Natural and transboundary contributions have not been considered

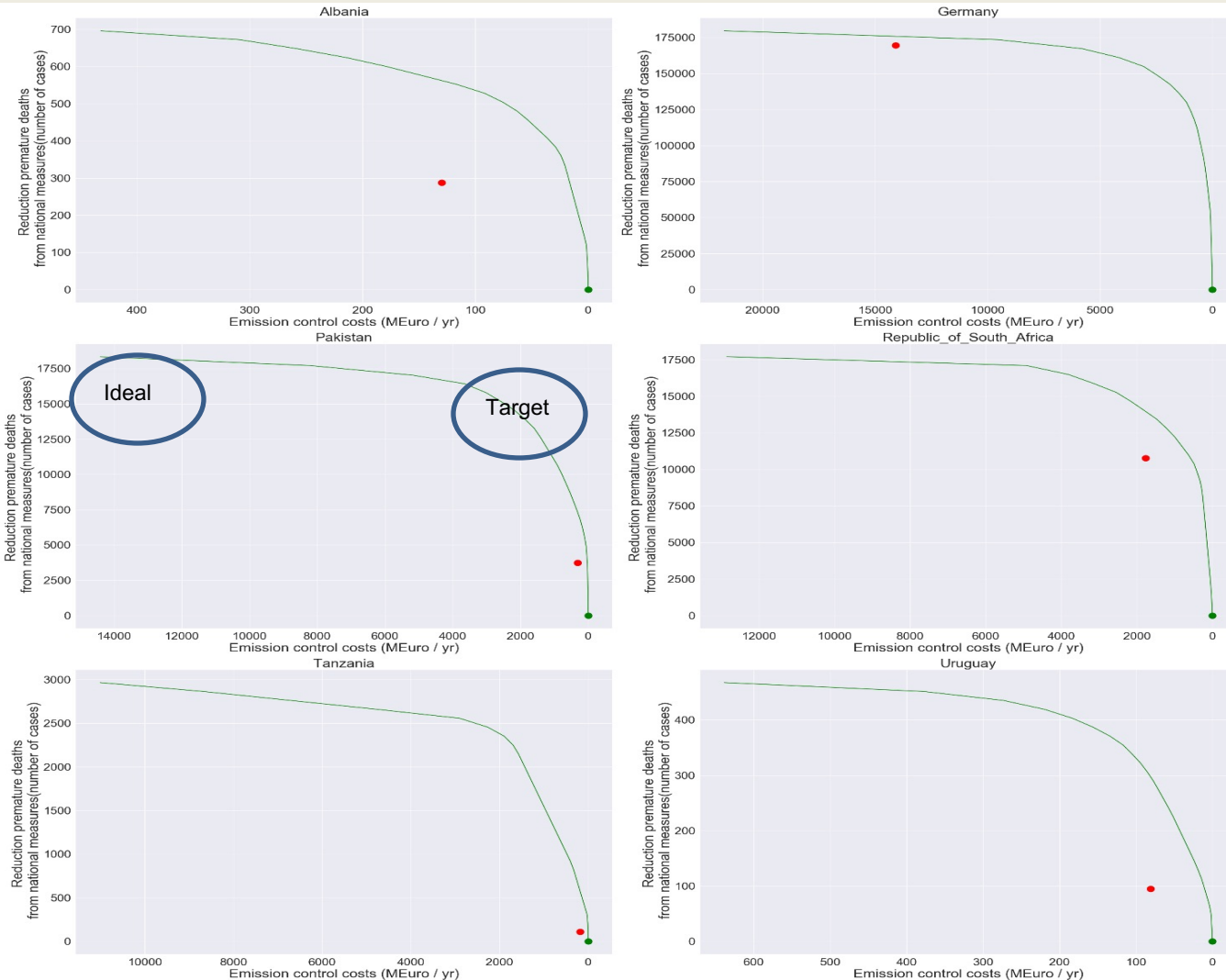
Source: IIASA GAINS

Air Pollution in South Asia



SAR AS GLOBAL HOT SPOT FOR HIGH AIR POLLUTION in 2019 (2/2)
 Most cities in SAR 3 – 12x higher than WHO standard for PM_{2.5}

Are We Doing Enough?



The green curves (ECCC) describes the Pareto-efficient frontier for reducing concentrations by reducing local emissions, starting from the no-control situation (green dot) where no air pollution control measures are in place.

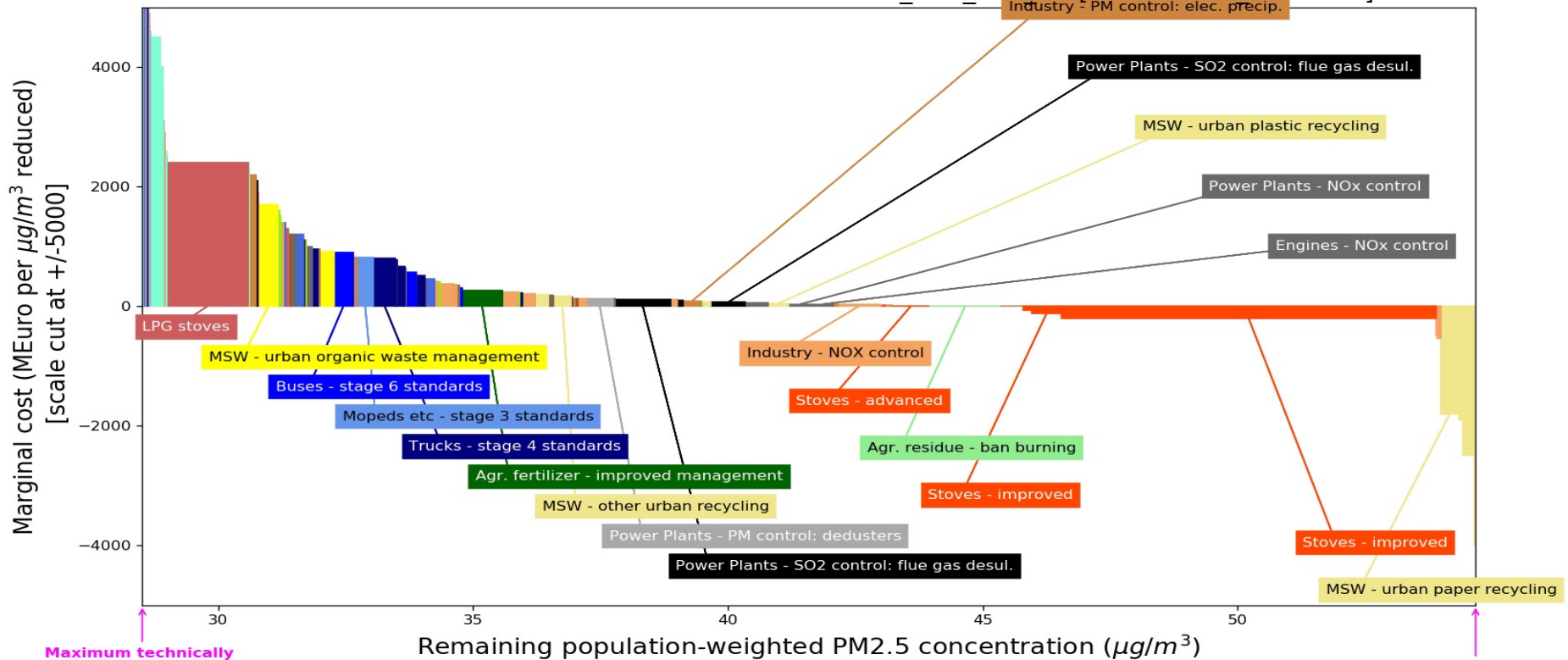
The vertical axis indicates the air pollution benefits, the horizontal axis the emission control costs.

The red dot indicates the implications of the current legislation (CLE) on air pollution control: a reduction in PM2.5-related premature mortality and an associated emission control cost relative to the uncontrolled situation

Source: IIASA GAINS Model

Marginal Abatement Cost Curve

Pakistan 2030 GAINS model scenario: WEO2019_NPS_CLE_V6 [2020-12-17 12:46-31]



Maximum technically feasible reduction

Baseline 2030

- | | | |
|---------------------------------|---|--|
| Power Plants - Coal to gas | Road and off-road - low sulphur | MSW - incineration |
| Power Plants - NOx control | Off-Road - emission standards | LPG stoves |
| Power Plants - SO2 control | Agr. livestock - manure management | Cleaner stoves |
| Power Plants - PM control | Agr. fertilizer - improved management | Cleaner other small combustion devices |
| Trucks - emission standards | Agr. fertilizer - nitrification inhibitor | Industry - SO2 control |
| Buses - emission standards | MSW - recycling | Industry - NOx control |
| Cars - emission standards | | Industry - PM control |
| Mopeds etc - emission standards | | |

What More Can We Do?

- Undertake a comprehensive dialogue on fiscal regime involving all stakeholders and actors for greening economy
 - ✓ Must be national agenda
 - ✓ Bring together SBP, SECP, Planning Commission and Ministry of Finance among others for transitioning to green economy

- Mainstream environment and climate change into decision making processes
 - ✓ Move beyond have mere NOCs from EPAs and a section PC-Is.
 - ✓ Improve implementation of air quality programs

- Introduce fiscal policy measures to reduce or eliminate distortions
 - ✓ Give incentives for all technologies that are environment friendly and resource efficient
 - ✓ Further encourage green financing mechanism

What More Can We Do?

Improve Environmental Monitoring

Build capacity of federal, provincial and local govt environmental monitoring and modelling capacity

Develop a network of air (PM_{2.5}, Sox, Nox, CO) and water quality monitoring (bacterial and chemical contamination)

Develop protocols for public disclosure and citizen's engagement

Enhance Devolution of Environmental Responsibilities

Improve local government capacity in environmental services

Adopt airshed and watershed management

Support provincial governments in preparation of green development plans

Improve urban zoning policies to reduce urban sprawl – provisions for public transport services and infrastructure, urban forestry (green belts), etc

Coordination Between Federal, Provincial and Local Governments

Use existing coordination mechanisms (Pakistan Environmental Council & Council of Common Interests) more effectively

Adopt airshed and watershed management approaches across administrative boundaries for pollution control

Focus on black carbon and Environment friendly recourse efficient technologies (such as clean cooking to reduce impacts on glaciers)

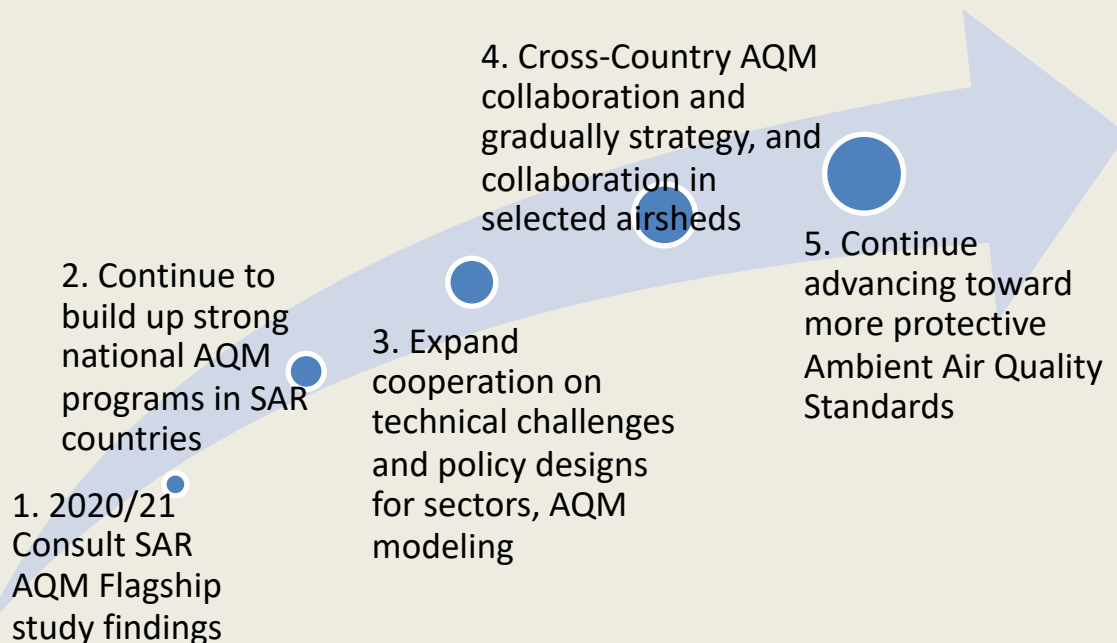
What More Can We Do?

Sector	Key emission reduction measure
Household cookstoves	<ul style="list-style-type: none">▪ Access to electricity, LPG in remote areas
Solid waste management	<ul style="list-style-type: none">▪ Enforced ban of open trash burning▪ Improving collection efficiency▪ Recycling of paper, plastics
Large industries	<ul style="list-style-type: none">▪ High efficiency well-maintained PM filters,▪ control of fugitive PM emissions,▪ SO₂ and NO_x controls
Electricity supply	<ul style="list-style-type: none">▪ Flue gas desulfurization▪ Fewer blackouts, modern diesel generators▪ Switch to clean energy
Agriculture	<ul style="list-style-type: none">▪ More efficient application of urea fertilizer, (manure mgt)▪ Ban of open burning of agricultural residues
Brick kilns	<ul style="list-style-type: none">▪ Replacement of traditional kilns with Zig-Zag and vertical shaft brick kilns
Transport	<ul style="list-style-type: none">▪ Reduce vehicular movement near glaciers▪ Improve fuel quality (Euro V or even better Euro VI)▪ Launch programs to create awareness for reducing excess road usage▪ Safer and greener transport modes



Tackling Cross- Boundary Air Pollution

- Air Pollution is a cross boundary issue impacting all countries of South Asia
- Building a common South Asia Region Clean Air 2030 vision will provide countries with aspirational targets to significantly improve their air quality over the next 10 years at an accelerated pace
- Countries need to reach one of the interim targets
- Set Interim Targets which would give flexibility for individual countries to pursue these targets at their own pace, as dictated by their economic and social situations



2030: Reaching WHO IT I of 35 $\mu\text{g}/\text{m}^3$ as a minimum (population-weighted average) and progress further towards WHO IT II, IT III and AQG standards



**Thank you for your
Attention**



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