

AIR QUALITY MANAGEMENT SUPPORT IN CLRTAP COUNTRIES

TFEIP meeting, May 15, 2024



WORLD BANK GROUP

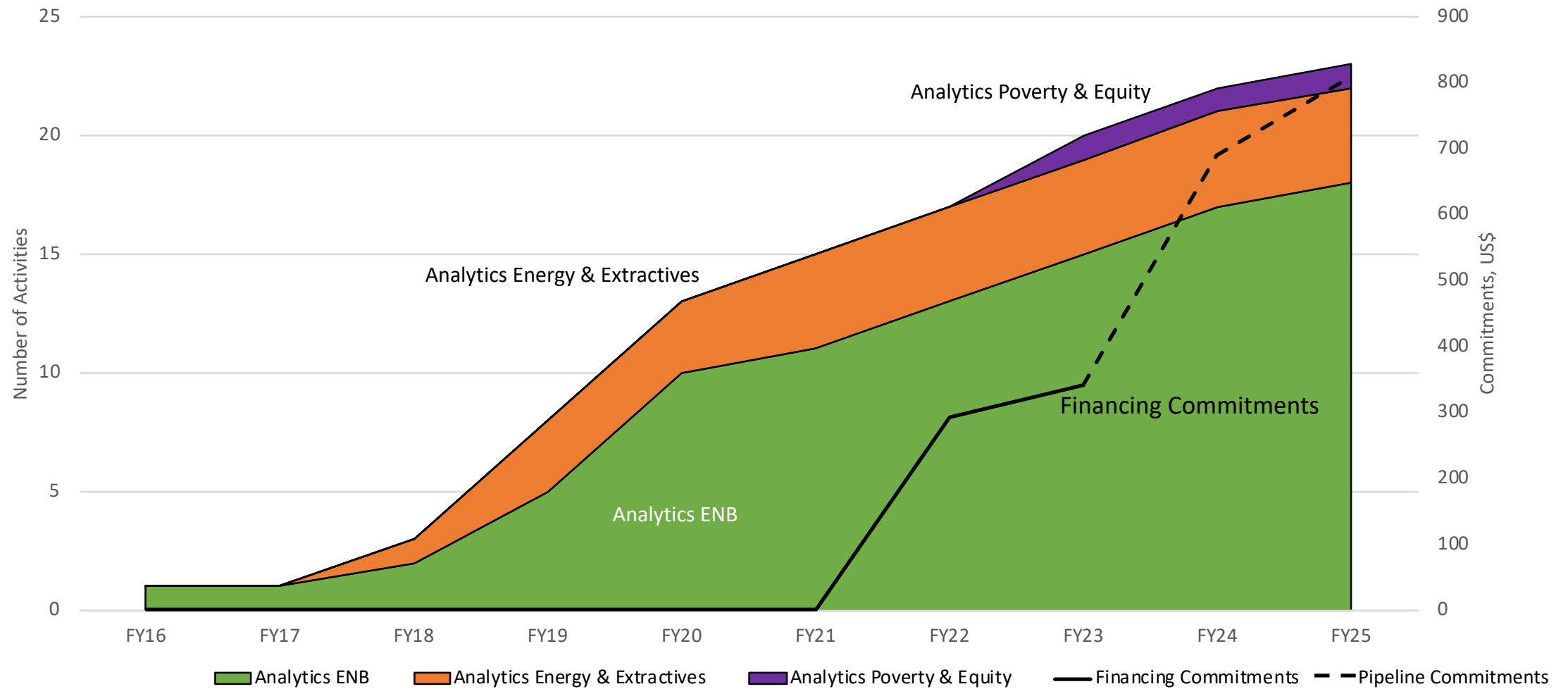
Contents

1. Overview of AQ work in CLRTAP countries (focus on ECA)
2. Support for local emission inventories and AQ assessments
3. Support for national emission inventories

Overview of AQ work in ECA countries since 2016



AQ-related analytics and investment in ECA countries since 2016



Local AQ assessments



AQ assessments were conducted/are being conducted for:

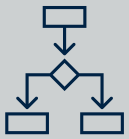
Astana and Almaty (Kazakhstan)

Bishkek (Kyrgyz Republic)

Bitola, Kicevo and Kocani (North Macedonia)

Serbia

Tashkent & Dushanbe (Uzbekistan & Tajikistan – not CLRTAP countries yet)

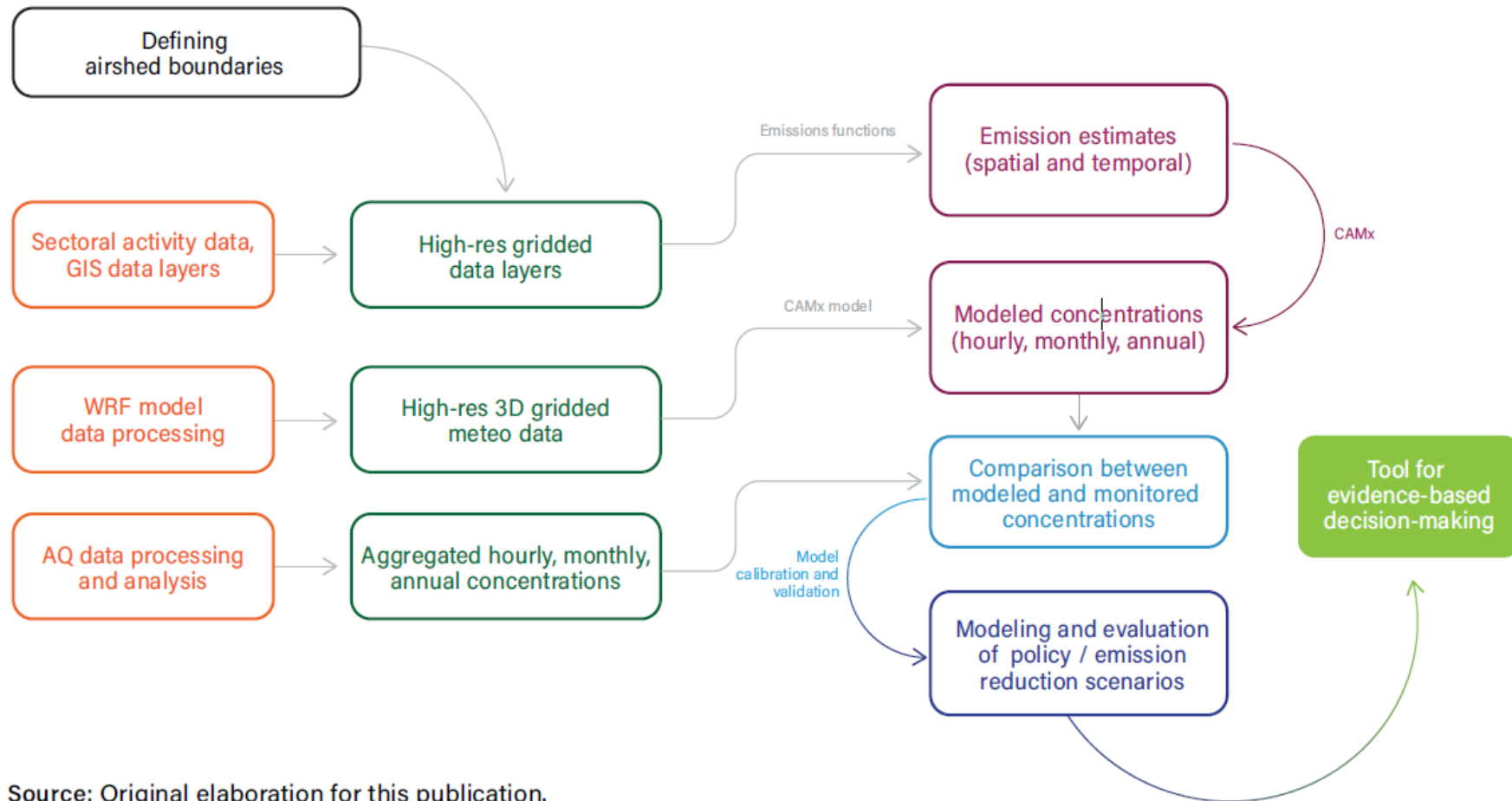


AQ assessments included the compilation of local emission inventories and AQ dispersion modelling to assess sources' contribution to air pollution and to spatially identify air pollution hotspots.



Two models are mainly used: GAINS and CAMx.

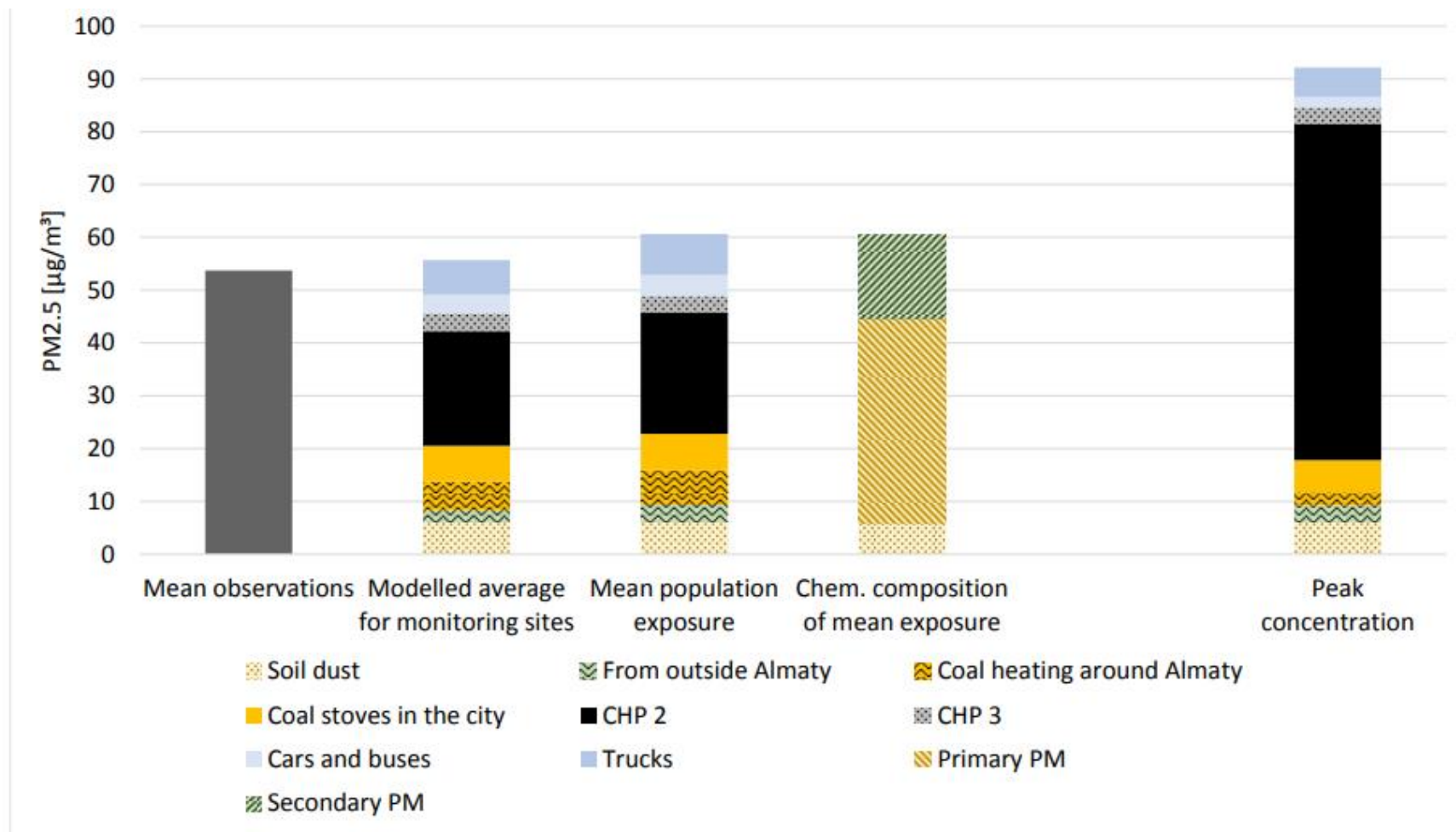
The ultimate goals of the local AQ assessments are to support identification and implementation of PaMs



Source: Original elaboration for this publication.

Note: GIS = Geographic information system.

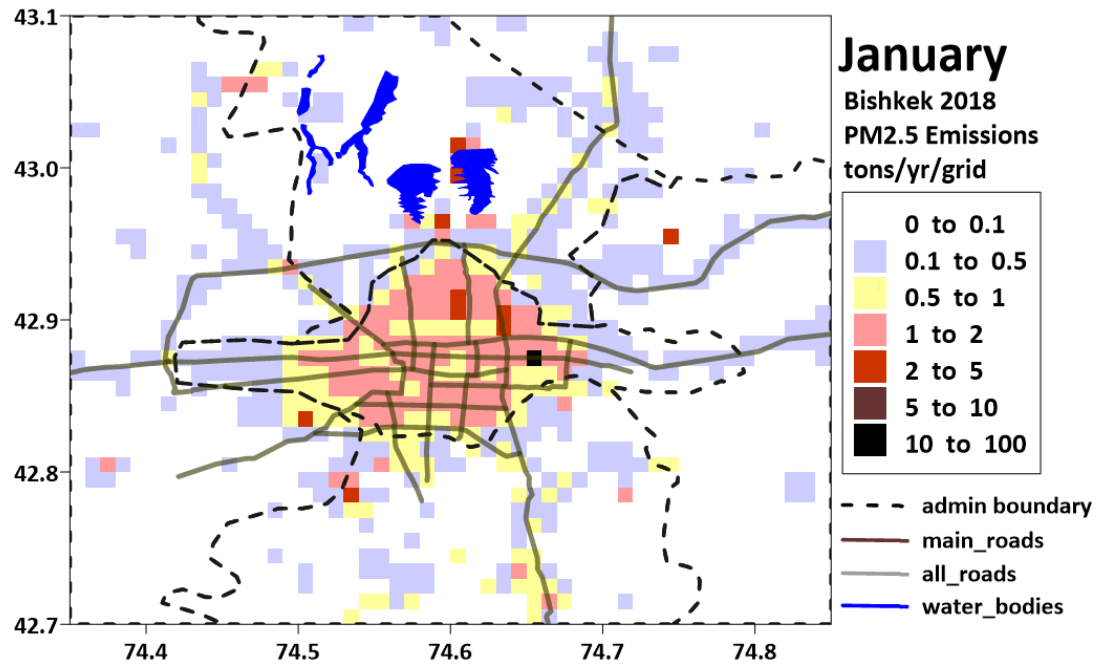
Source apportionment for Almaty, Kazakhstan



Source: GAINS-City calculations.

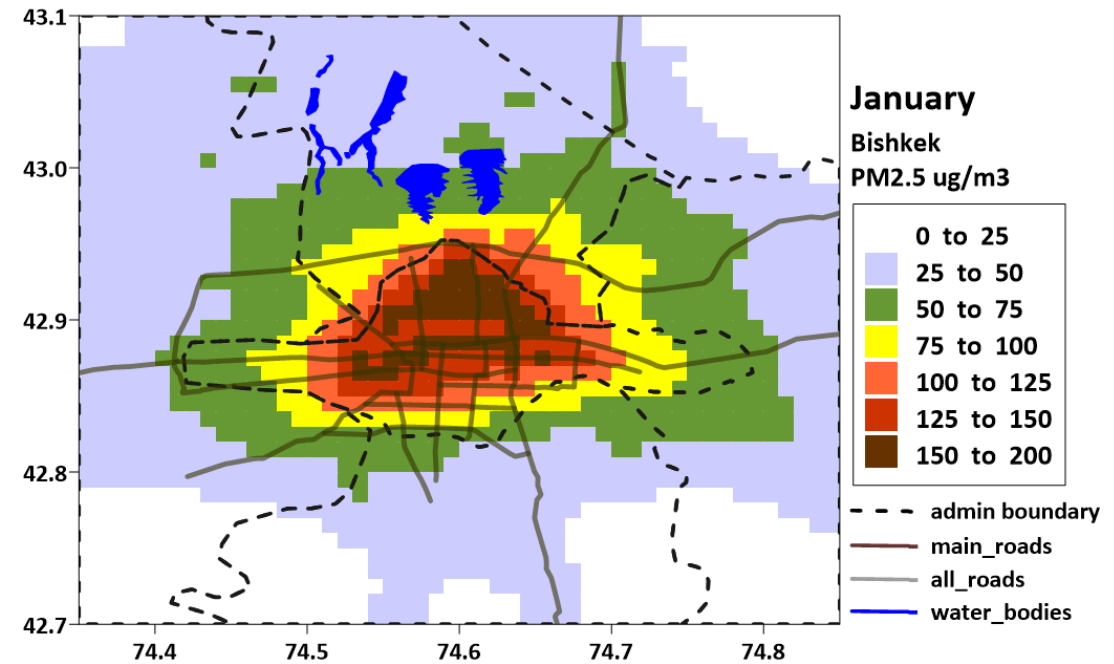
Emission and pollution maps for Bishkek, Kyrgyz Republic

Monthly emissions map

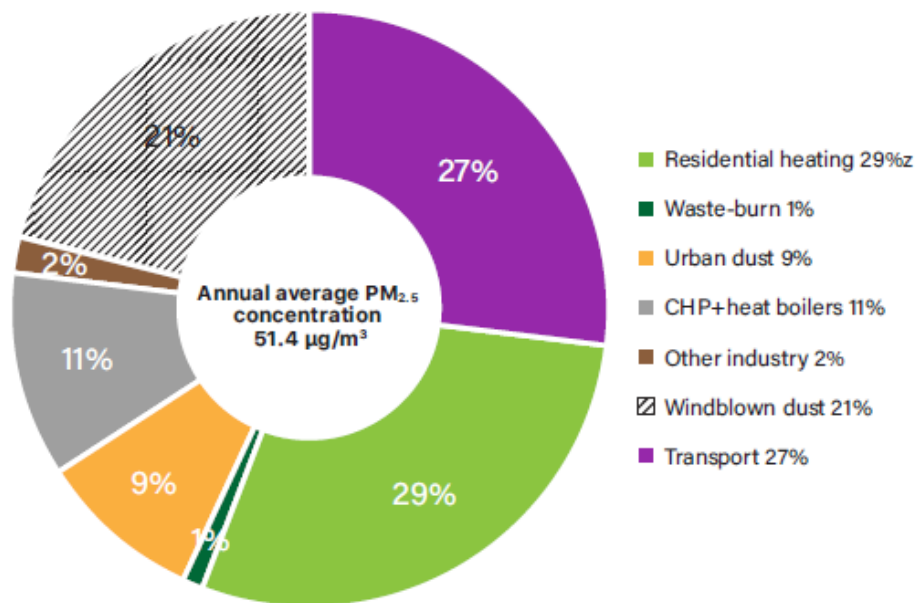


WRF
CAMx

Monthly concentrations map



Design and assessment of emission reduction measures for Bishkek, Kyrgyz Republic



Source: Original elaboration for this publication.

Sector	Measure	Reduction in annual PM _{2.5} concentration (%)		Reduction in CO ₂ emissions (%)		
CHP and heat boilers	Combined heat and power (CHP) plant switch from coal to gas	9		29		
	All heat-only-boilers (HoBs) switch from coal to gas	2		1		
	30% more renewables in CHP and HoBs	4		11		
Residential heating ^a	Home insulation - low and high	2	3	0.5	1	
	Residential coal to gas - low and high	6	12	2	3	
	Residential heat pumps - low and high	5	13	0.5	1	
	Residential more electric heating - low and high	5	9	-2	-4	
	Complete switch to clean heating	29		8		
Transport	Traffic management	3		5		
	Road dust suppression	1		-		
	Car emissions control - low and high	3	6	6	13	
	Marshrutka emissions control	1		1		
	Buses emissions control	0.2		0.3		
	Light duty vehicle (LDV)/heavy goods vehicle (HGV) emissions control	3		4		
	Total of all transport measures combined	13		22		
	Complete switch to zero-emission vehicles	27		51		
	Waste burning	Control waste open burning	0.6		-	
		No open waste burning, including dump	1		-	
Greening ^b	Natural dust controls - low	1		-		
	Natural dust controls - high	2		-		

Source: Original elaboration for this publication.

Note: a. Low and high scenarios refer to 20 percent and 40 percent, respectively, of houses using coal implementing energy efficiency (EE) measures or switching to cleaner heating. Additional electricity demand from the existing CHP was modeled for residential heating measures involving switching to electricity for heating (for example, heat pumps and heating with electric boilers/radiators). The CHP emissions depend on the fuel used to generate electricity. b. The greening measures are used as natural dust controls primarily affecting windblown dust.

Emission inventory support in Bulgaria (Reimbursable Advisory Service project)



Improve accuracy in reporting residential heating and solvent emissions



Improve detail in reporting emissions from agriculture



Build emission reduction scenarios for key emission sources



Assess implementation of emission reduction policies and measures (PaMs)



Assess emissions projections (WM and WAM scenarios) and update the emissions projections tool

The Kyrgyz Republic Air Quality Improvement Project

Strengthen AQM system

- Enhancing ambient AQ data collection, analysis and dissemination
- Enhancing AQ management and pollution control

Adoption of clean heating solutions

- Establishing a revolving financial mechanism to support adoption of clean heating solutions
- Supporting activities to adopt clean heating solutions

Improve urban greening

- Preserving and expanding green areas in Bishkek
- Construction of an irrigation system for green areas in Bishkek
- Capacity building and strengthening

Project implementation support

Emission inventory support as part of overall AQM system strengthening – Kyrgyz Republic



Strengthen cross-sectoral coordination on AQM



Development of AQ and GHG emission inventories



Establishment of integrated data center, including databases on AQ and GHG emissions

THANK YOU!



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