

BREATHE BETTER BOND PROGRAM

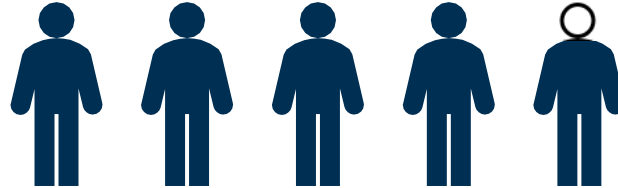


Creating Markets, Creating Opportunities

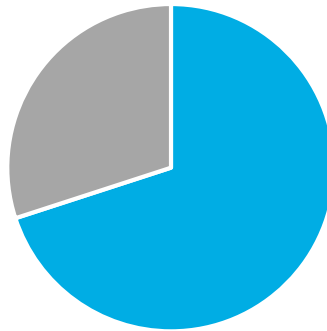
October 2020

THE URBAN AIR POLLUTION PROBLEM

Cities are at the nexus of climate change and air pollution



97% of urban populations in low- and middle-income countries are exposed to unsafe air quality, resulting in about 7 million premature deaths per year



Cities are responsible for 70% of CO2 emissions globally

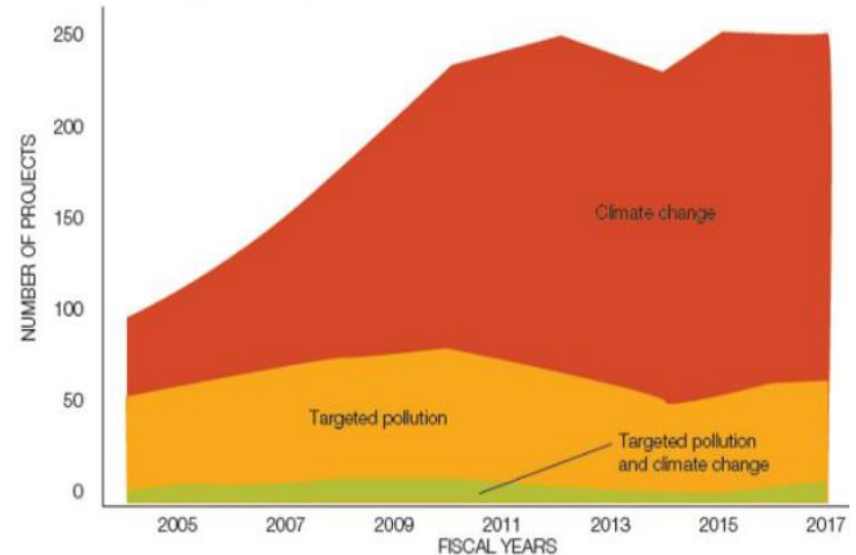
WHAT IS THE WORLD BANK DOING TO ADDRESS POLLUTION?

The World Bank Group (WBG) has spent more than \$43 billion across almost 250 projects from FY04 - FY17 in operational and technical assistance to combat pollution.

Air Quality Monitoring (AQM) Program:

- Address fine particulate matter (PM) and short-lived climate pollutants (SLCPs)
- Establish AQM capacity
- Ensure local pollutant mitigation with climate change co-benefits

World Bank Group Targeted Pollution and Climate Change Portfolios (FY04-17)



Source: IEG Portfolio Review (note: FY17 projects as of March 2017)

The WBG has implemented projects that combine technical assistance for AQM and lending in 11 countries

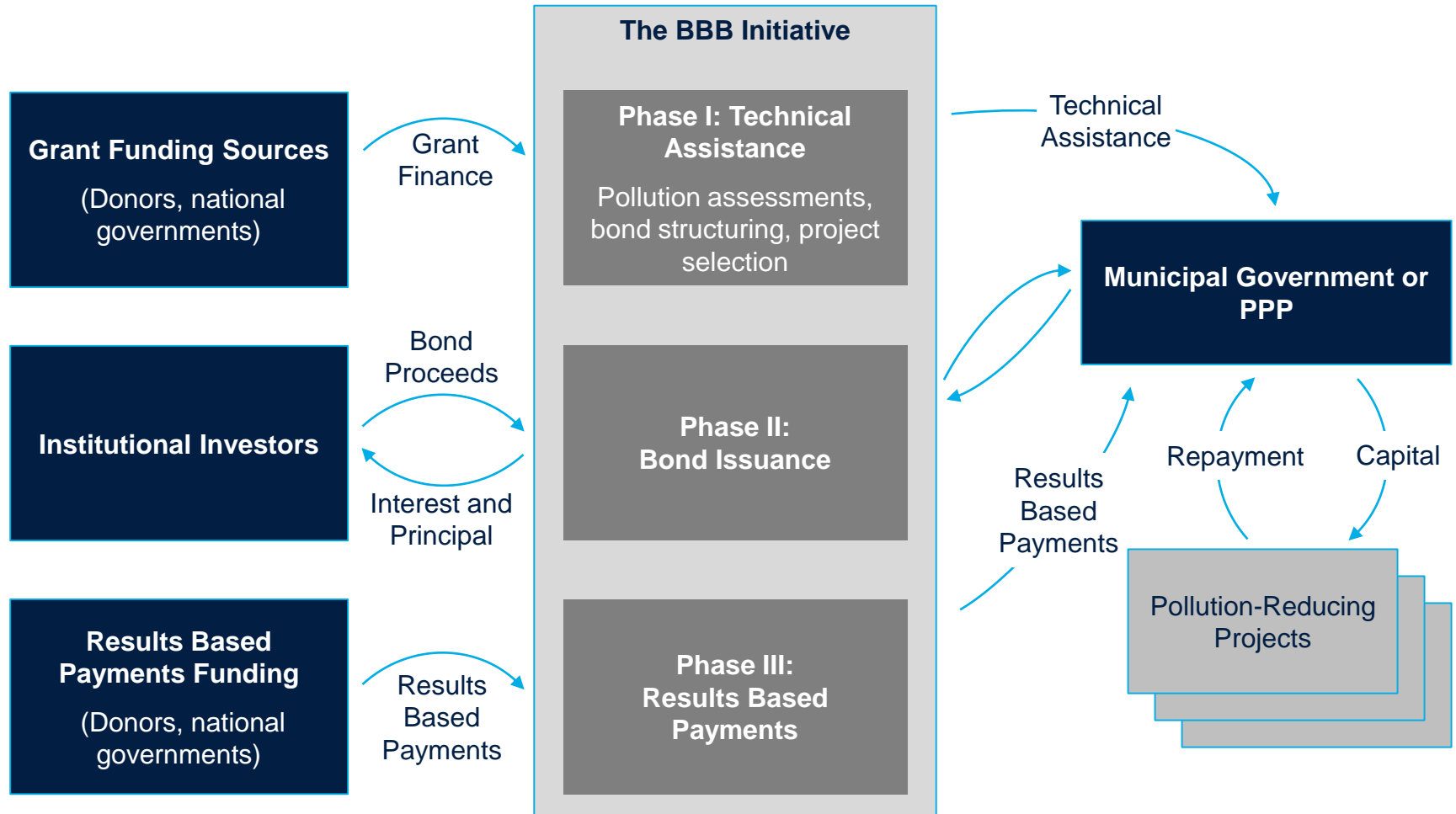
GOAL, BARRIERS, AND SOLUTIONS

Goal	Support cities to launch projects that reduce short-lived climate pollutants and greenhouse gas emissions.
------	--

Approach	Address barriers that have prevented cities from taking pollution mitigation measures
----------	---

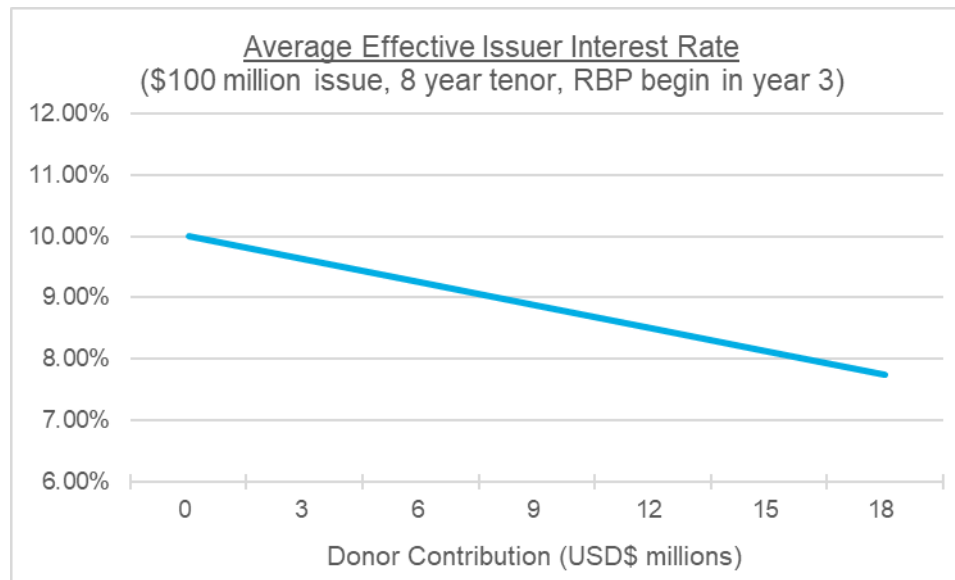
Barriers	Financial Competing demand for capital	Data Lack of data to quantify pollution problem	Knowledge Lack of SLCP-reducing, bankable projects	Legal Inability to structure and issue bonds
	Support competitive financing for air pollution-reducing projects	Technical assistance for emissions inventory and projections	Technical assistance for project identification and preparation	Technical assistance to structure bond issuances

BBB STRUCTURE



AFFORDABILITY IS A KEY FOCUS FOR MANY ISSUERS

- Given that cities face significant competing demands for capital, BBB may offer support to lower funding cost using two potential mechanisms:
- Results Based Payments which would be paid upon achievement of a specific milestone (e.g. pollution levels)
 - Blended Finance that will be tied to development results



Under one hypothetical scenario analyzed, RBPs lower the average effective interest rate to the issuer by more than 200 basis points.

CITY SELECTION RESULTS



- Location on graph reflects severity of air pollution problem and actionability
- Size of each city's circle scaled to population

SAMPLE BBB PROJECT LIST

Name	Estimated Project Cost (in millions)	Construction Months
Municipal Solid Waste to Energy	US\$275 – US\$325	30-40
Bus Rapid Transit	US\$60-US\$70	24-30
Solar farm	US\$190 – US\$220	15-20
Rooftop solar PV	US\$40 – US\$50	12-24
Electric bus conversion	EUR95 – EUR110	24-36
Waste remediation	US\$2 – US\$50	Varies

SIMULATION CITY CASE STUDY

IFC used a pollution model to assess the impact of three projects implemented in a hypothetical South Asian city.

In USD millions				
Mitigation Actions	Starting Year	Debt	Equity	Total
<u>Electricity Generation</u> – Project to install a 200MW Solar Plant.	2021	101	34	135
<u>Transport</u> – Replace 300 diesel buses with 250 electric trolleys.	2021	155	52	207
<u>Waste</u> – Construction of a waste to energy plant that can process 420,000 tons of municipal solid waste.	2021	131	44	175
	Total	387	130	517

- Using recent investments as a benchmark, IFC estimated the capital required to achieve specific changes in the energy mix
- The pollution model then assessed the impact on GHG emissions and several types of pollutants
- Conclusion. A \$130 million BBB issue coupled with \$387 million of project debt would result reductions of 3.4 million tons of CO2 and almost 2 million tons of PM2.5 over 8 years.

BBB STATUS UPDATE

- Working with IFC-Cities coverage team to identify a sub-national partner for BBB
- Working with World Bank as potential follow-on after air pollution inventory and source apportionment TA for Lagos
- Coordinating with World Bank team addressing air quality management in India / Indo Gangetic plain.