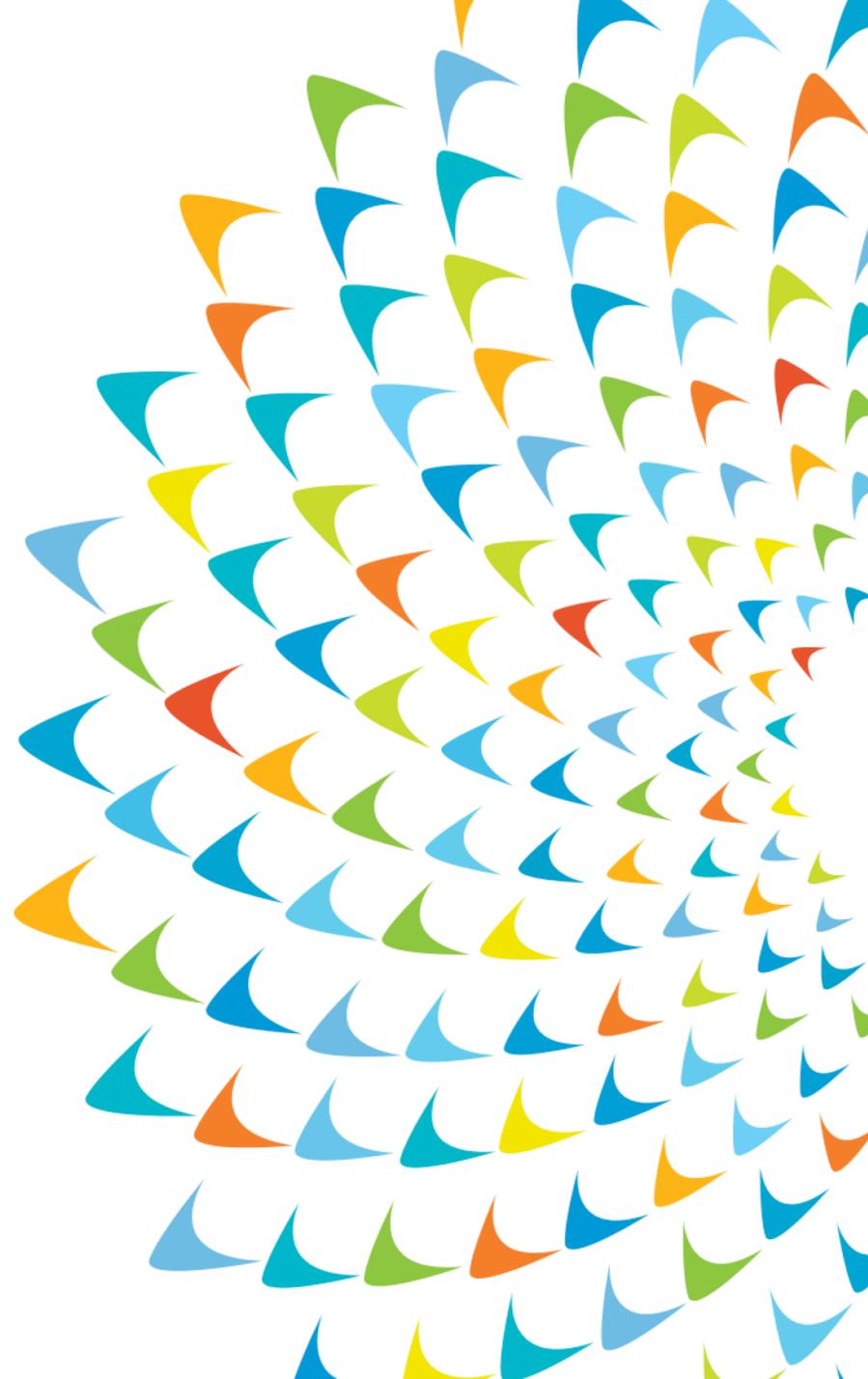




AIR QUALITY IMPROVEMENT PROGRAM IN THE GREATER BTH REGION

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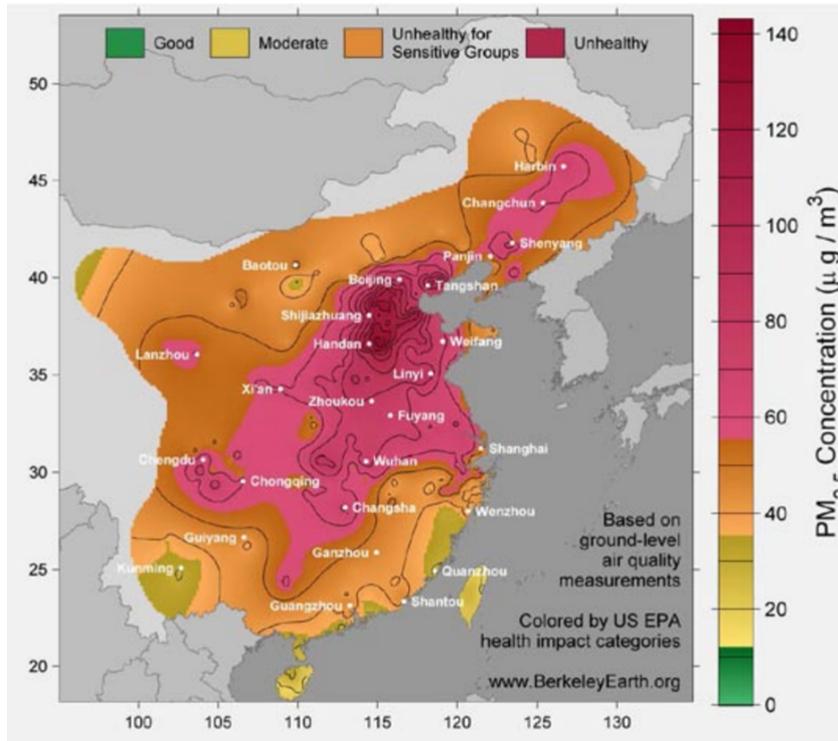
PRC's Air Quality Challenges

- Many cities do not meet acceptable air quality
- Exposure to high levels of PM_{2.5} contributes to about 1 million premature deaths annually in the PRC
- The cost of premature mortality to the national economy is estimated as approximately 7.5% of the GDP



What need to be done?

NATIONWIDE AMBIENT PM_{2.5} CONCENTRATIONS



Source: Berkeley Earth, 2015

Strengthen Policy and Regulatory Framework

Leverage investments through innovative approaches

Help demonstrate and deploy advance technologies



ADB Loans in BTH (2015-ongoing)

Project	(million)	Year
Loan 3356-PRC: Beijing-Tianjin-Hebei Air Quality Improvement-Hebei Policy Reforms Program (PBL)	\$300	2015
Loan 3504-PRC: Air Quality Improvement in the Greater Beijing Tianjin Hebei Region China National Investment and Guaranty Corporation's Green Financing Platform Project	€458	2016
Loan 3629-PRC: Air Quality Improvement in the Greater Beijing-Tianjin-Hebei Region Regional Emission-Reduction and Pollution-Control Facility	€428	2017
Loan 3765-PRC: Air Quality Improvement in the Greater Beijing-Tianjin-Hebei for Shandong	€350	2018

Already approved



ADB Loans in BTH (2015-ongoing)

Being processed

Project	(\$ million)	Year
Henan Cleaner Fuel Switch Investment Program	300	2019
Scaled-up Green Financing	500	2020



ADB TAs in BTH (2015-ongoing)

Project	\$	Year
TA 8701-PRC: Study on the National Control of the Important Pollutant–Volatile Organic Compounds	400,000	2014
TA 8975-PRC: Beijing-Tianjin-Hebei Regional Air Pollution Control	625,000	2015
TA 9042-PRC: Study on the Coordinated Development of Beijing-Tianjin-Hebei	750,000	2015
TA 9034-PRC: Developing Cost-Effective Policies and Investments to Achieve Climate and Air Quality Goals in the Beijing Tianjin Hebei Region	825,000	2015
TA 9142-PRC: Green Financing Platform for Accelerated Air Quality Improvement in the Greater Beijing-Tianjin-Hebei Region	500,000	2016
TA 9251-PRC: Strengthening Capacity in Implementation of Green Financing Platform for the Greater Beijing-Tianjin-Hebei Region	1 million	2016
TA 9403-PRC: Study of Clean Energy Supply for the Rural Areas in the Greater Beijing-Tianjin-Hebei Region	400,000	2017
TA 9611-PRC: Study on Municipal Solid Waste Regional Integrated Management Model for Beijing-Tianjin-Hebei	400,000	2018



ADB Approach in BTH

- ❖ Build on the policy actions initiated in Hebei PBL in 2015 and strengthen implementation of policy actions throughout the greater BTH region through targeted investment in subprojects aligned with key policy actions.
- ❖ Establish a dedicated green financing platform (GFP) in 2016 to leverage financing and scale-up investments in green and low emission development, especially among SMEs.
- ❖ Establish a dedicated technology leapfrogging fund in 2017 to deliver best available low-emissions technologies in key sectors, targeting major emitters in some of the most polluted cities and provinces of the region.
- ❖ Integrate various clean and renewable energy technologies for district and distributed heating and cooling systems in 2018 to provide efficient and clean heating and cooling in Shandong Province
- ❖ Direct contribute to improving air quality, inclusive economic growth, environmentally sustainable growth, private sector development and climate change mitigation in the greater BTH region of the PRC.



2015 Policy Based Lending: Hebei

ISSUES	REFORM APPROACH
Fragmented and short-term air pollution control policies	Comprehensively support industrial transformation and adjustment of energy structure and urban and rural services
Weak environmental policy and institutional framework to support effective pollution control	Strengthen regulatory framework, enhance monitoring coverage and quality, and increase enforcement capacity at different levels
Incomplete coverage of social protection and training program to support industrial transformation	Provision of quality training and support for reemployment of skilled and unskilled workers



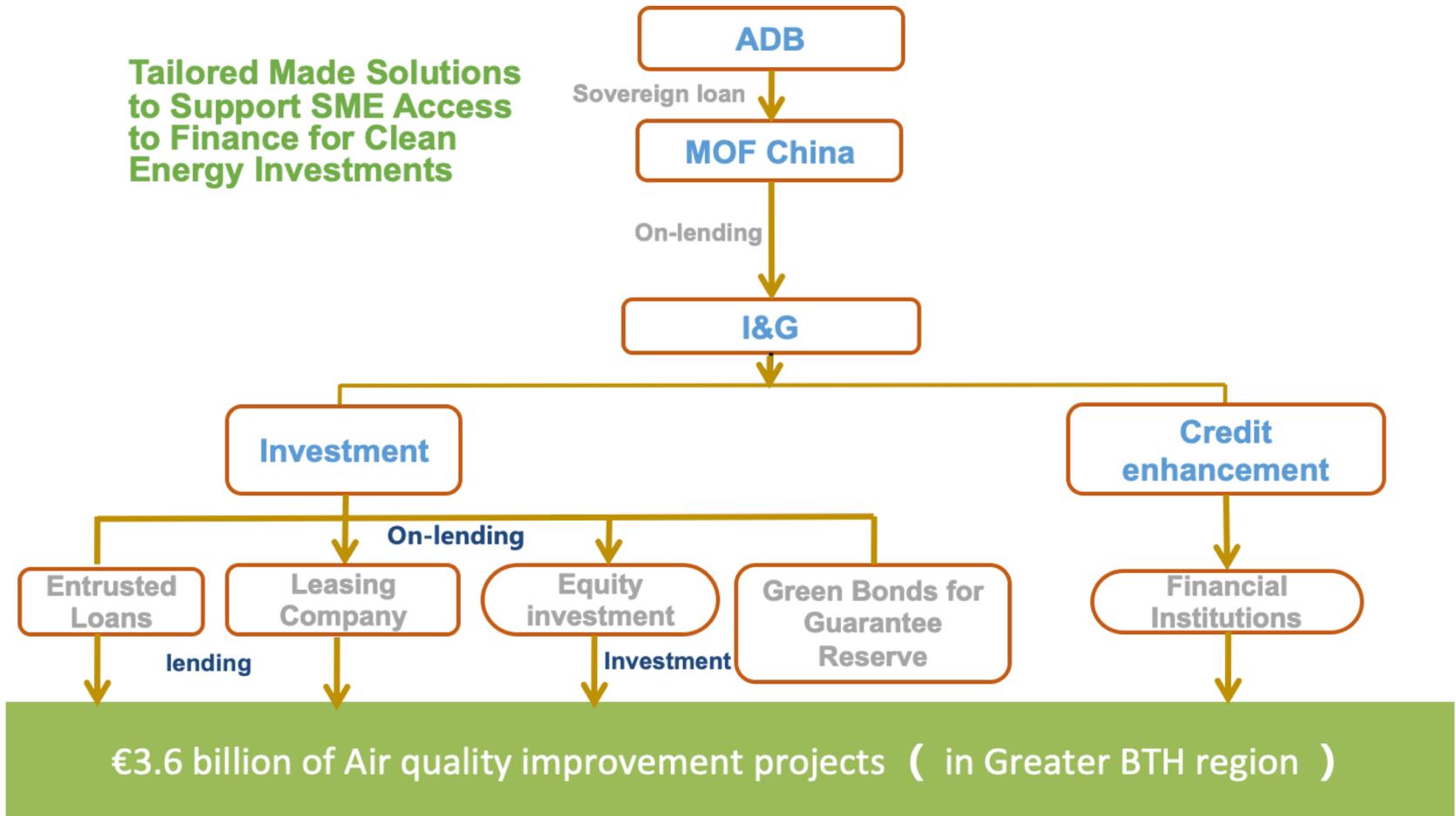
2016 Green Financing Platform

- Targets near-untapped SME sector for pollution reduction
- Offers suite of innovative financing tools to meet the financing requirements and credit quality of diverse set of borrowers
- Leverages domestic financing: ADB's €458 million leverage €3.6 billion equivalent in commercial financing
- Open architecture - suitable for expansion
- Enhancing local financial institutions' capacity and willingness
- Leverages large CO₂ mitigation (~ 8.5 MT)



2016 Green Financing Platform

Tailored Made Solutions
to Support SME Access
to Finance for Clean
Energy Investments



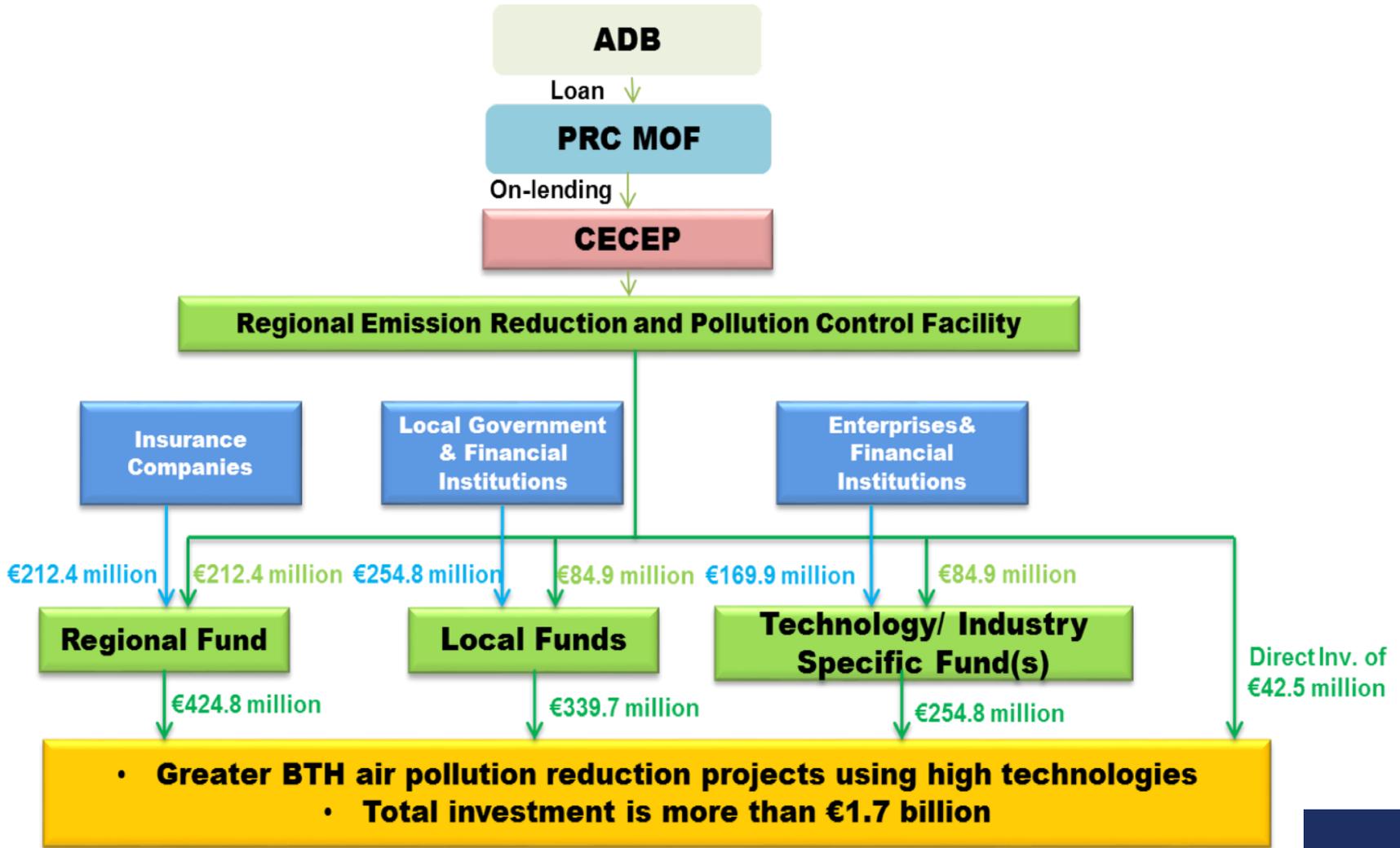


2017 Regional Emission reduction /Pollution Control Facility

- **Issues:** Air quality challenge in BTH due to technology gaps
- **Approach:** Establish a dedicated technology leapfrogging fund to deploy advanced low-emission technologies in key sectors, targeting major emitters in some of the most polluted cities and provinces of the greater BTH region.
- **Design/Specifications:** Essential value add features - innovation, leverage and better results to achieve air pollution reduction and CO₂ mitigation through a SOE which has extensive technical expertise.

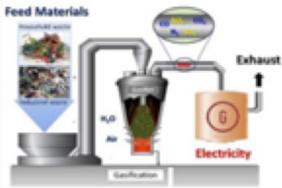


Fund Structure for Regional Emission reduction / Pollution Control Facility



Technologies to be Financed by the Platform and the Fund

Biomass gas



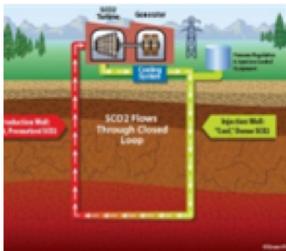
Hydrogen fuel-cell buses



Smart grids for industrial clusters



Deep well geothermal



E-Vehicle



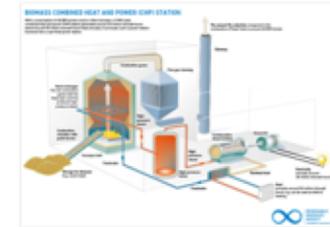
NG filling and E-V charging station



Distributed solar PV



Combined biomass heating and power generation



Clean district heating and cooling



Supporting super ESCOs

Coke oven gas to LNG





2018 Shandong Clean Heating and Cooling Project

- **Issues:** Air quality challenge in BTH due to increasing residential emissions in highly polluted areas during heating season.
- **Approach:** Investment for clean heating and cooling systems for residences to accelerate air pollution abatement in Shandong Province.
- **Design/Specifications:** The heating and cooling systems combine renewable energy technologies and waste heat recovered from industry and power plants to reduce the energy and carbon intensity of heat production and refrigeration, and thereby reduce air pollution and greenhouse gas emissions.



2018 Shandong Air Pollution Project

- **Why Shandong?** nearly 1/3rd of the region's population; larger impact on air quality; high urban and rural pollution levels
- Cleaner heating can make an impact for urban, peri-urban, and rural residents
- Syncs well with ADB's ongoing work, including non-lending work



Conclusion

Air quality improvement need long-term policy, financing and technological supports, cross-sectoral, pragmatic and systematic approach is needed

- Private investments and commercial financing are difficult but possible
- Comprehensive solution should be targeted
- Inclusive financing approach is essential
- Advanced technologies to leapfrog is important