Controlling Air Pollution in Southeast Asia:

Policy Trends and Technology Needs

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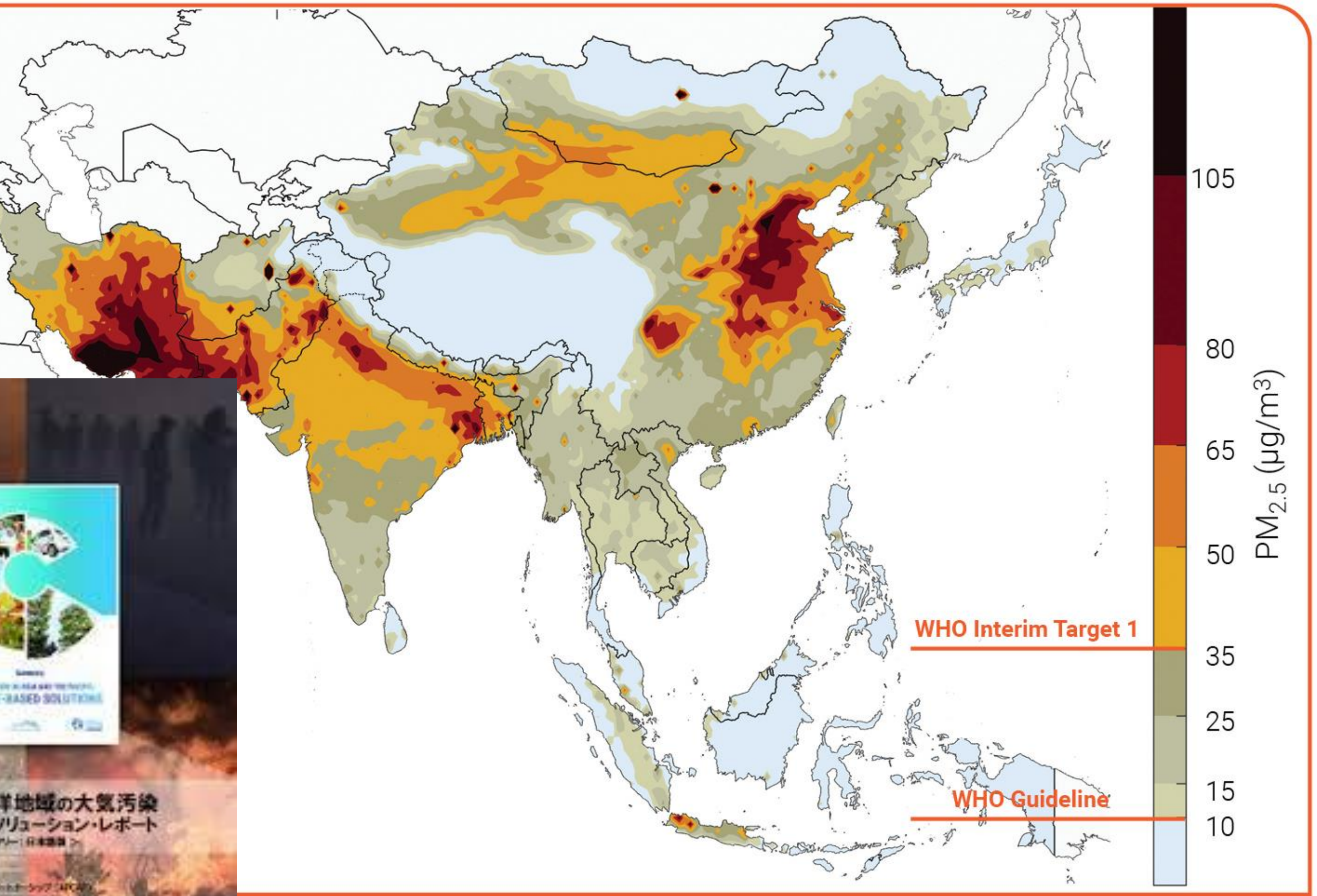
Outline

- **Policy Trends in Southeast Asia**
- **Technology Needs in Southeast Asia**
- **Japan and Other Partner Efforts to Meet these Needs**
- **How Can We Help You?**

Air pollution is a serious health crisis across Asia and the Pacific



E 1.1: AMBIENT LEVELS OF PM$_{2.5}$ IN ASIA IN 2015

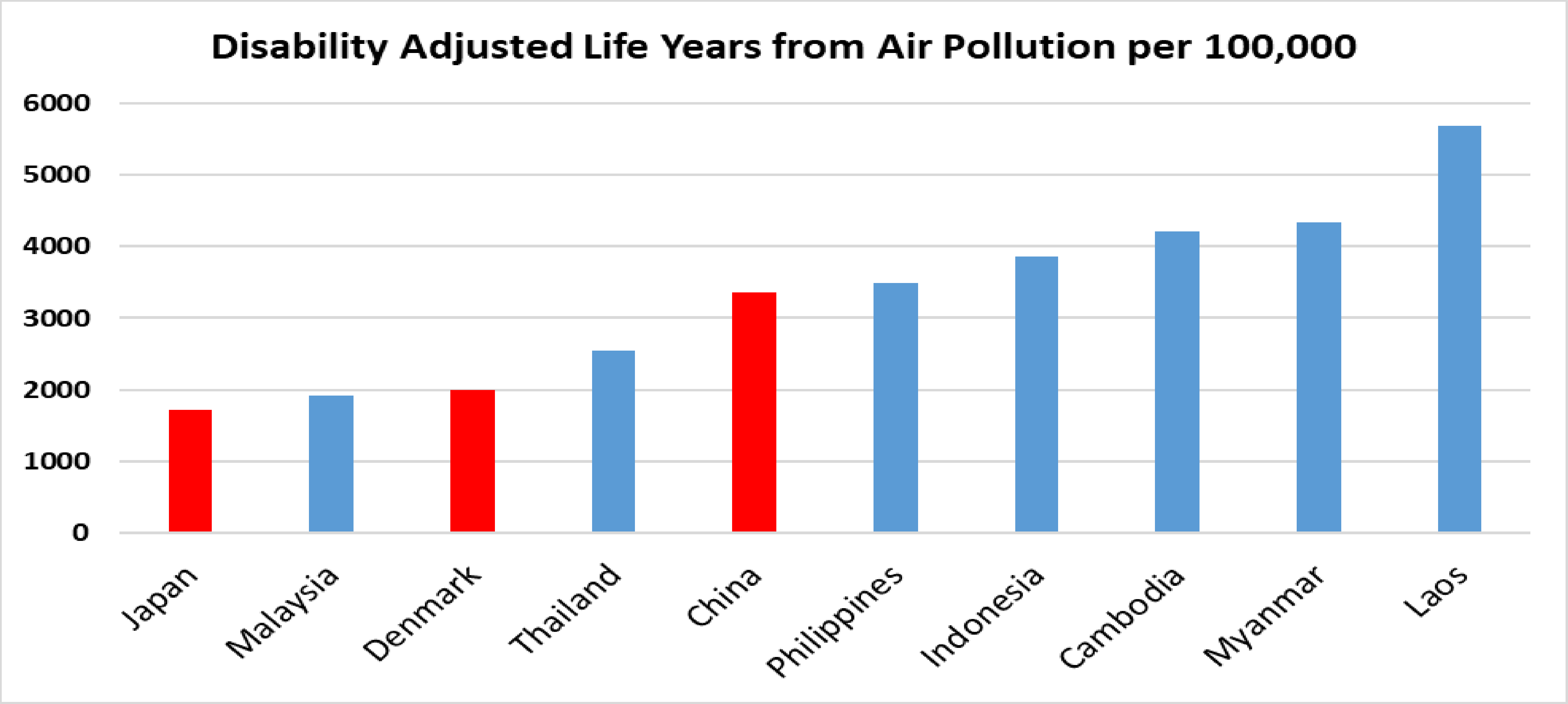
<8% of people in Asia and Pacific enjoy clean air

In 2015, 4 billion people were exposed to high levels of air pollution

Highest numbers in South and East Asia

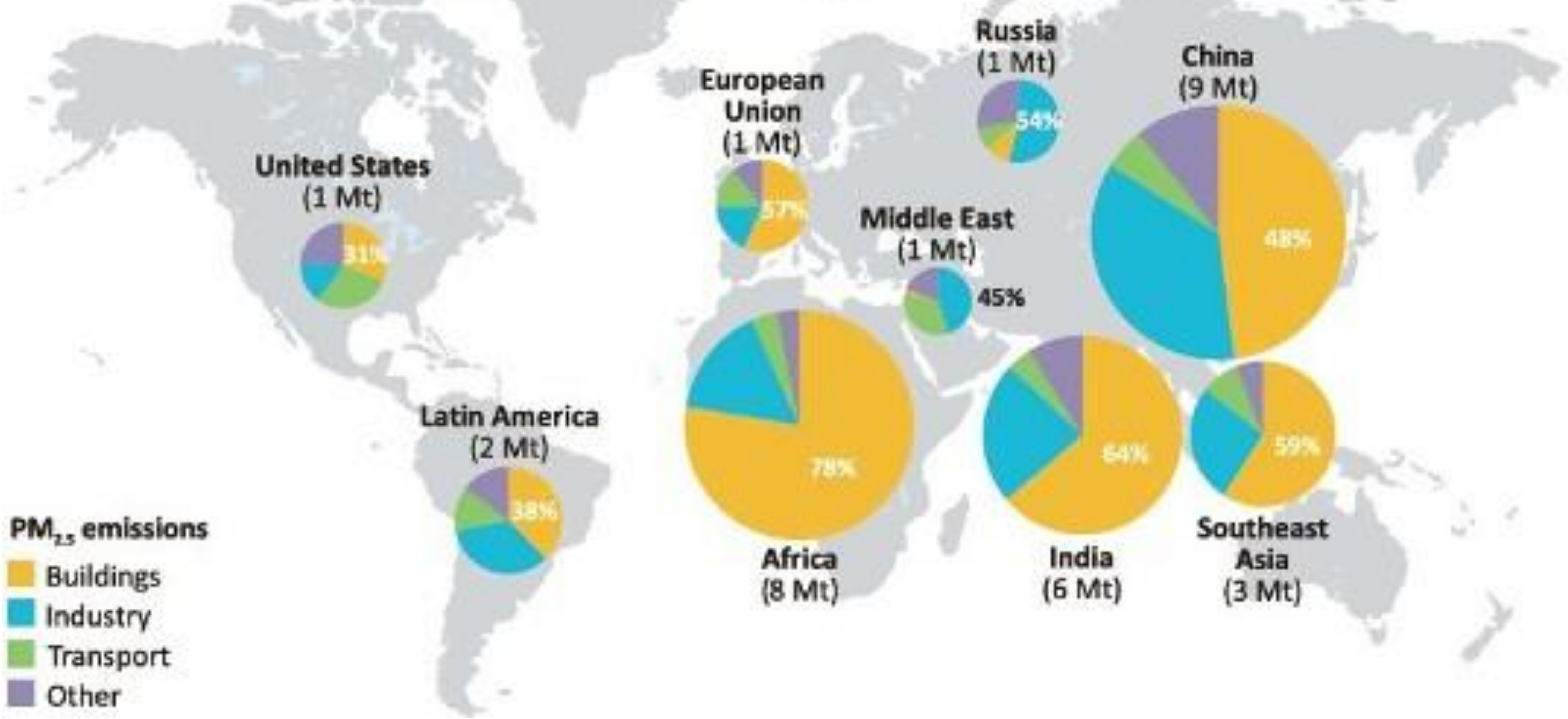
Source: https://www.iges.or.jp/en/pub/solution-report-summary/ja

Air pollution is a particularly large health threat in Southeast Asia



Source: Global Burden of Disease, 2017

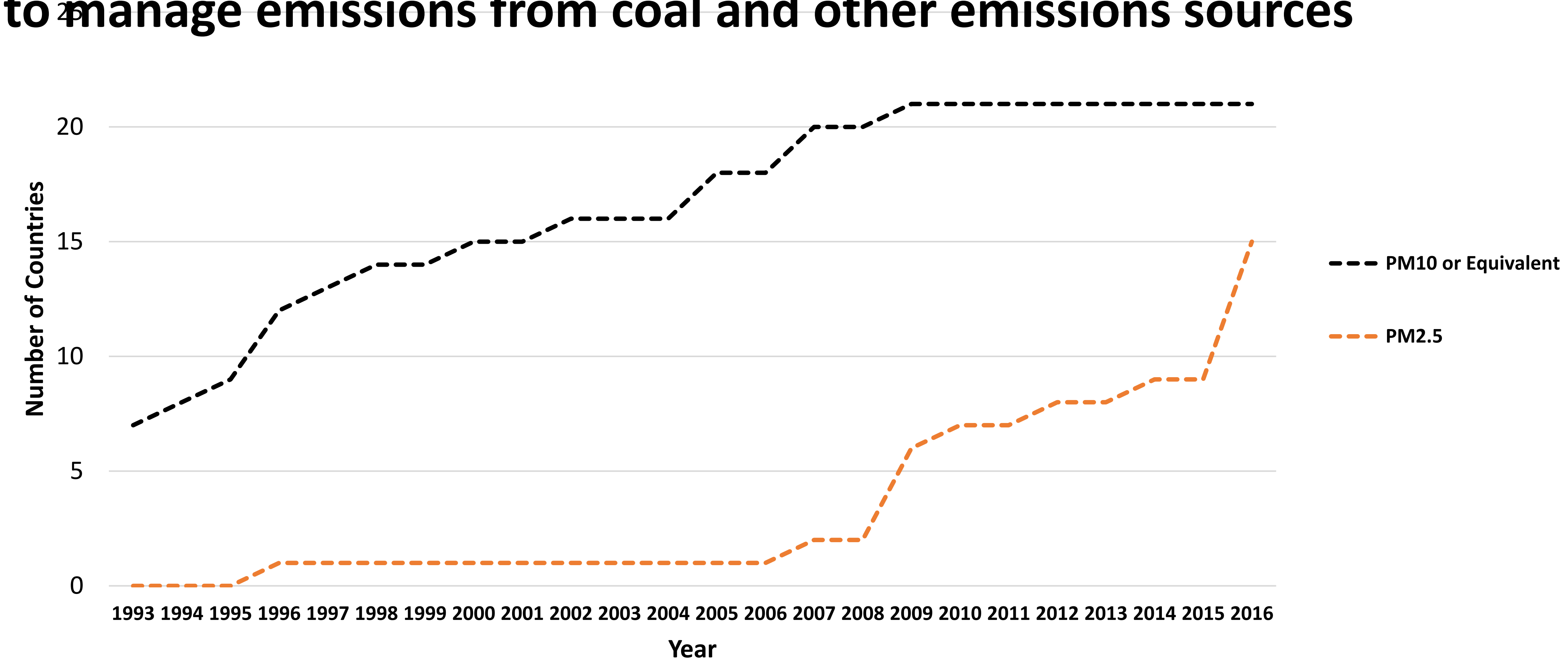
Energy, industry, residential energy, transport and agriculture are key sources of air pollution in Southeast Asia



Energy and industry will continue to be a large source of air pollution in Southeast Asia

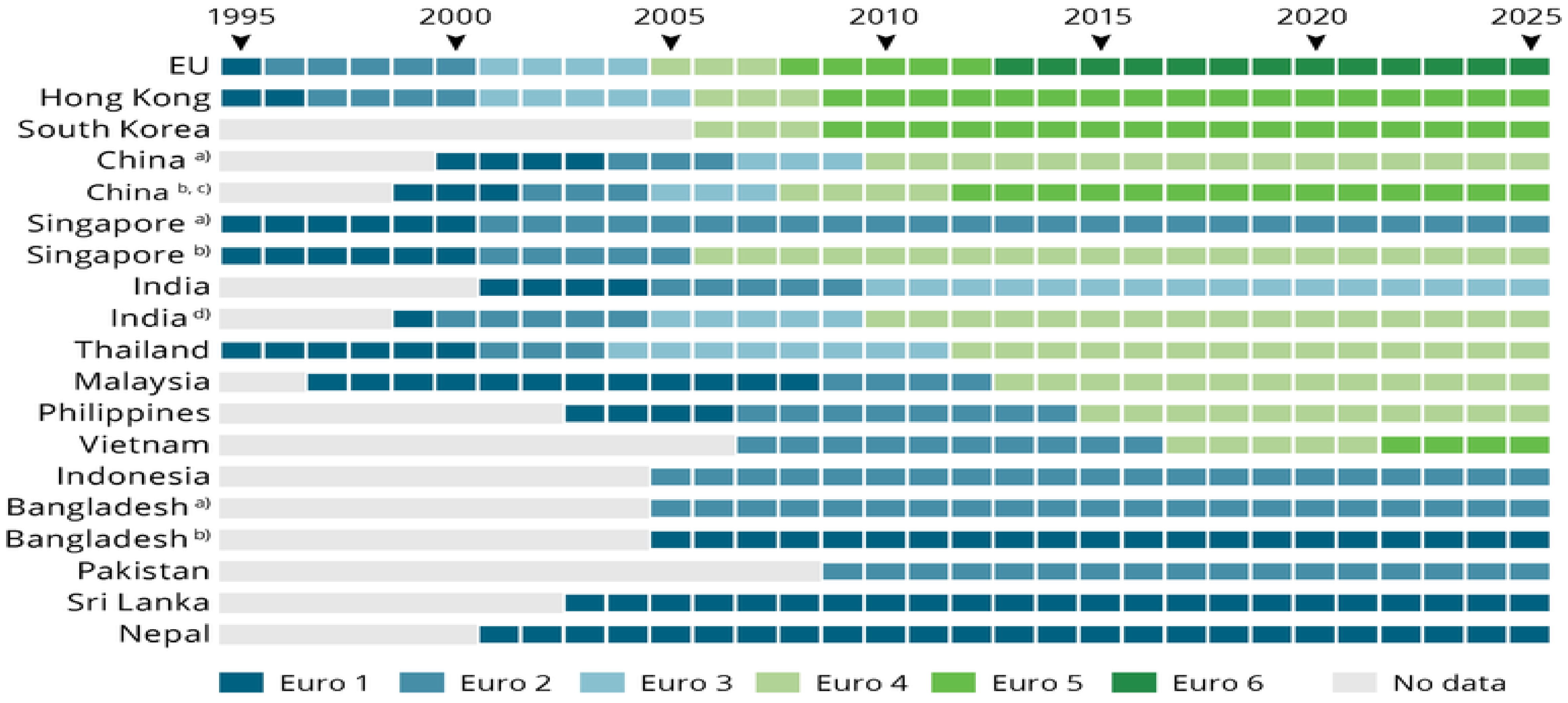
- Energy demand in the region will grow as much as 60 percent by 2040
- Coal use is—and will continue—to be a challenge in Southeast Asia
    - Vietnam’s coal use grew 75 percent from 2012 to 2017
    - Indonesia’s coal use for electricity generation increase by around 12 percent this year due to additional demand from new power plants
    - The Philippines four biggest energy firms have plans to more than double the country’s current coal capacity in the next six years.

Countries in Asia are tightening their air quality standards to manage emissions from coal and other emissions sources

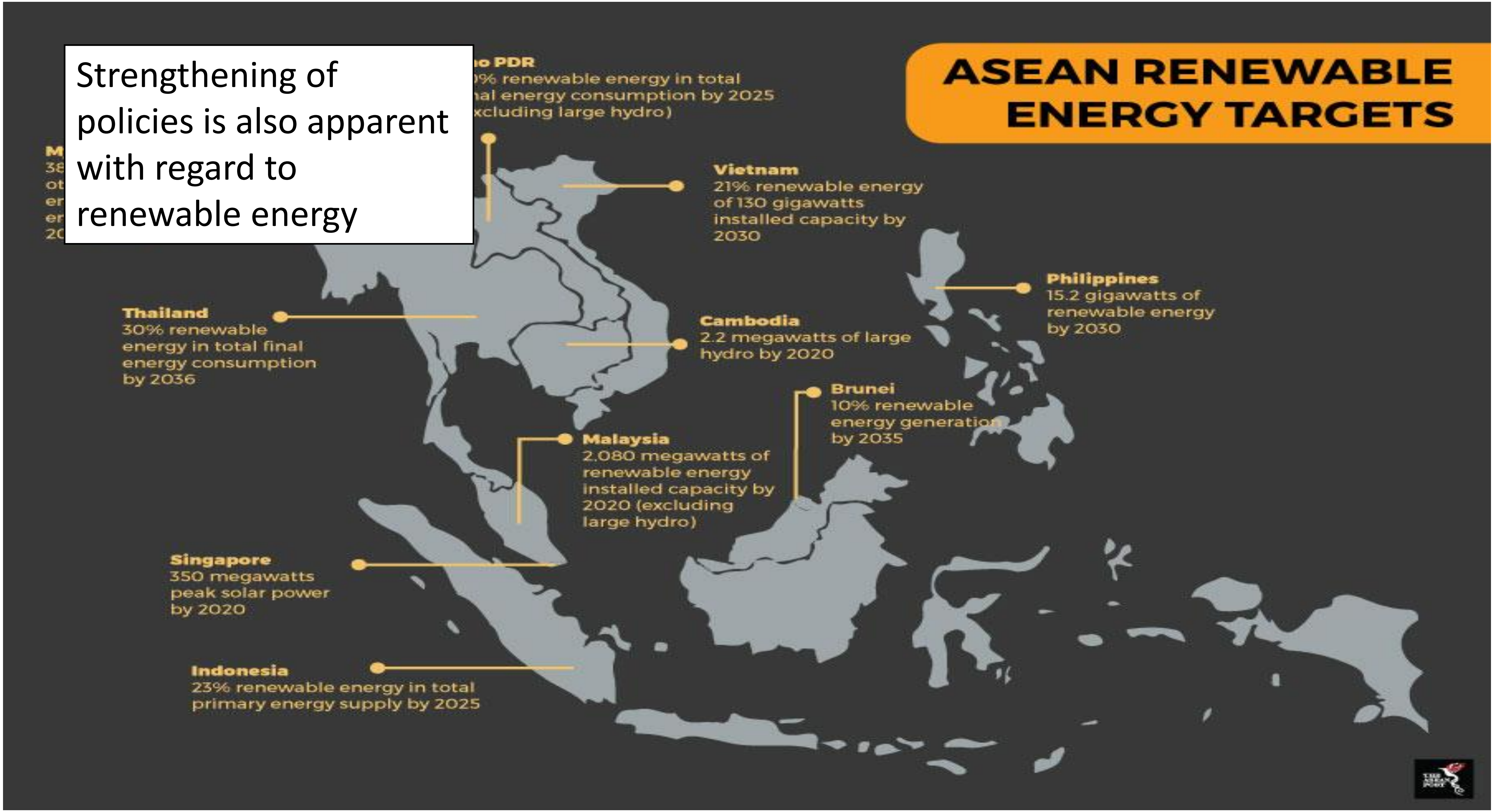


Source: Data from Clean Air Asia

This trend is visible for mobile sources as well



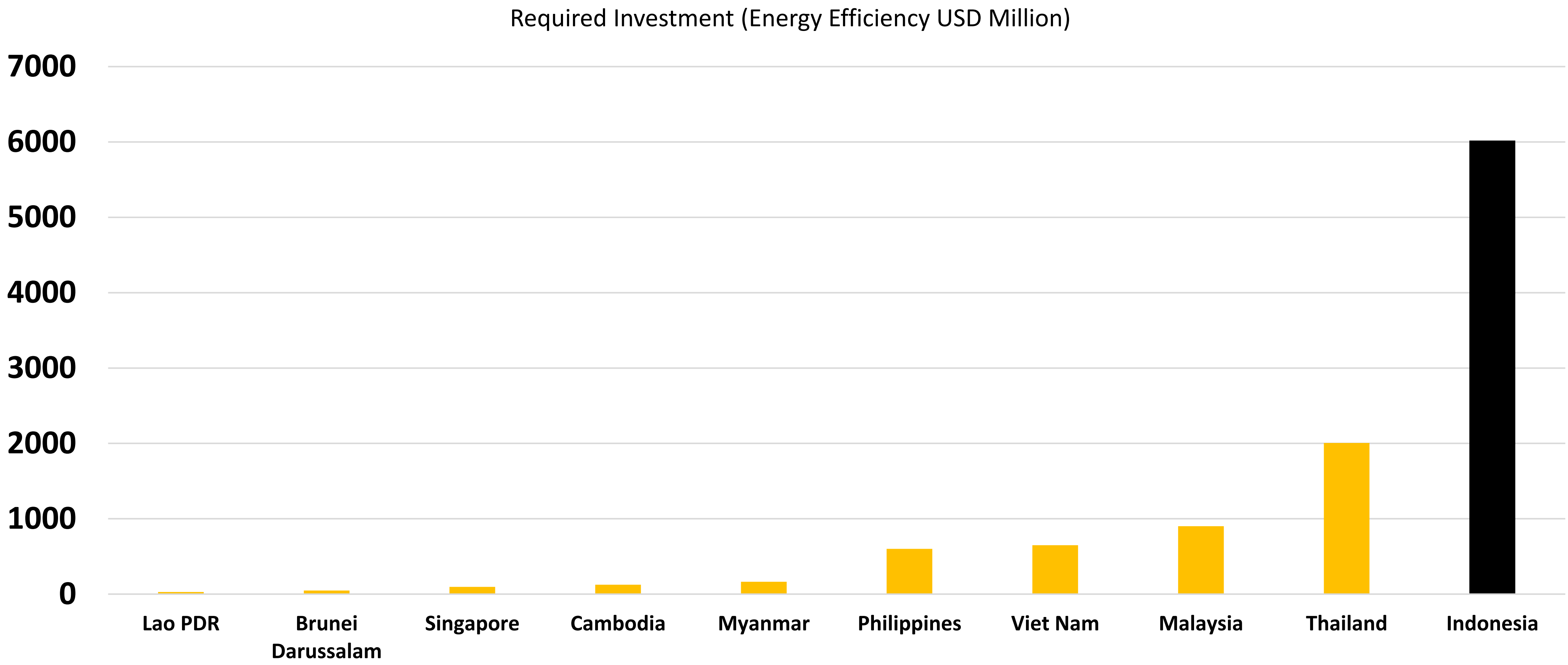
Strengthening of policies is also apparent with regard to renewable energy



Thailand has adopted many energy efficiency policies that mitigate climate change and improve air quality

- The Energy Conservation Promotion Act (1992): made energy conservation as part of national policy.
- Energy Conservation Promotion Fund: ENCON-create national funds to support demand-side initiatives in the energy sector are channeled through the (Thailand Ministry of Energy 2011).
- Energy Efficiency Revolving Fund: facilitate the involvement of the commercial finance sector in the provision of loans for EE projects.
- Thailand's Twenty-Year Energy Efficiency Development Plan (2011–2030): decrease energy intensity by 25% over that period against a 2005 baseline.
- Demand Side Management: bidding program offers subsidies for verified energy savings achieved by large businesses, and for verified energy savings or peak load reductions achieved by small and medium-sized enterprises.

Still significant energy efficiency investment needs….



ADB, 2012

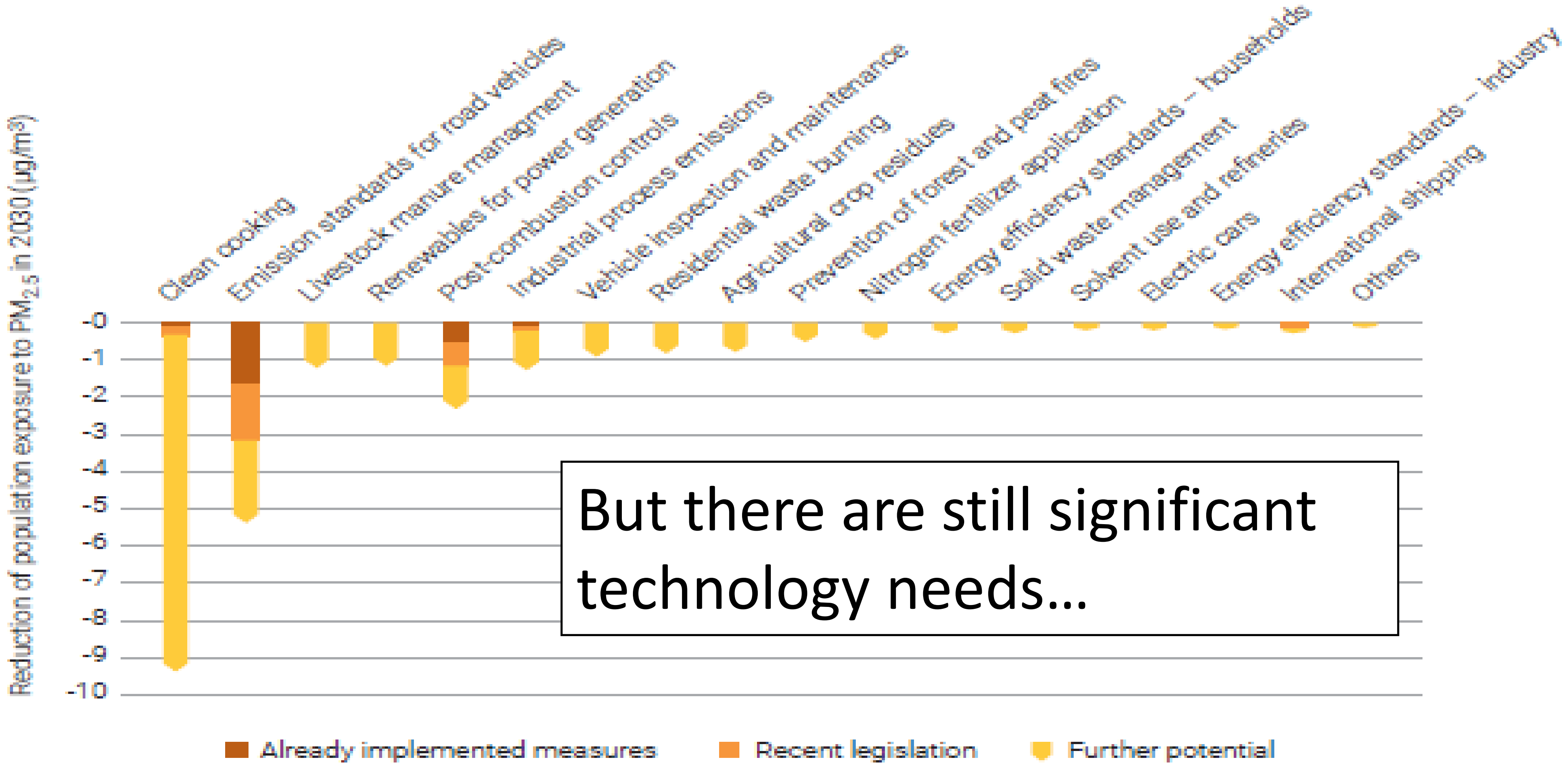


FIGURE 2.33: IMPACTS OF MEASURES TAKEN IN MODELLED SOUTHEAST ASIA ON POPULATION EXPOSURE TO $PM_{2.5}$ WITHIN THE SUB-REGION, RANKED BY FURTHER POTENTIAL

Source: UNEP 2019 (modelling based on IIASA GAINs model)

Japan: helped meet some of these needs with JCM Projects that deliver co-benefits

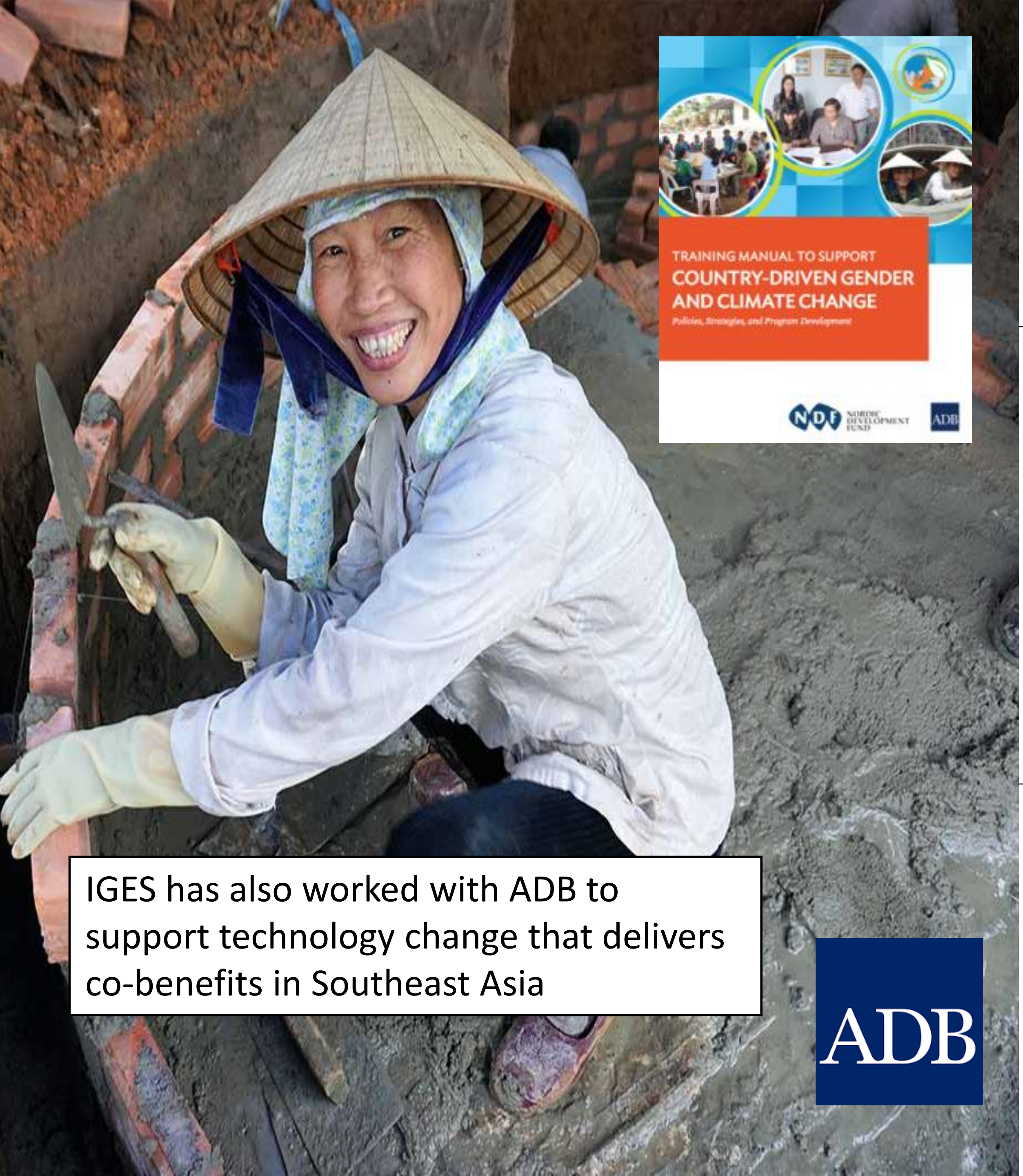
Da Nang Energy Efficient Water Pump

- Providing technical training for local project participant for maintenance, operation, and monitoring in order to operate the project properly **(SDG 4)**
- The installed high efficiency water pump contributed to increasing the amount of supplying water by 5 thousand tons per a day. The local company supplies 70% of the consuming water in Da-Nang city. This project achieved to supply stable and higher quality water to the city **(SDG 6)**
- Energy efficiency is increased by 20% which leads to CO_2 emission reduction as well as electricity cost in the water treatment facility **(SDG 7 and 13)**
- By introducing high efficient water pump leads sustainable water supply to the Da-Nang city residence and this project is supporting sustainable infrastructure development in Vietnam with financial and technical support **(SDG 8, 9, and 12)**
- Participating in international cooperative mechanisms with different stakeholders to diffuse low carbon technologies and improving the partnership between both countries and private sectors **(SDG 17)**

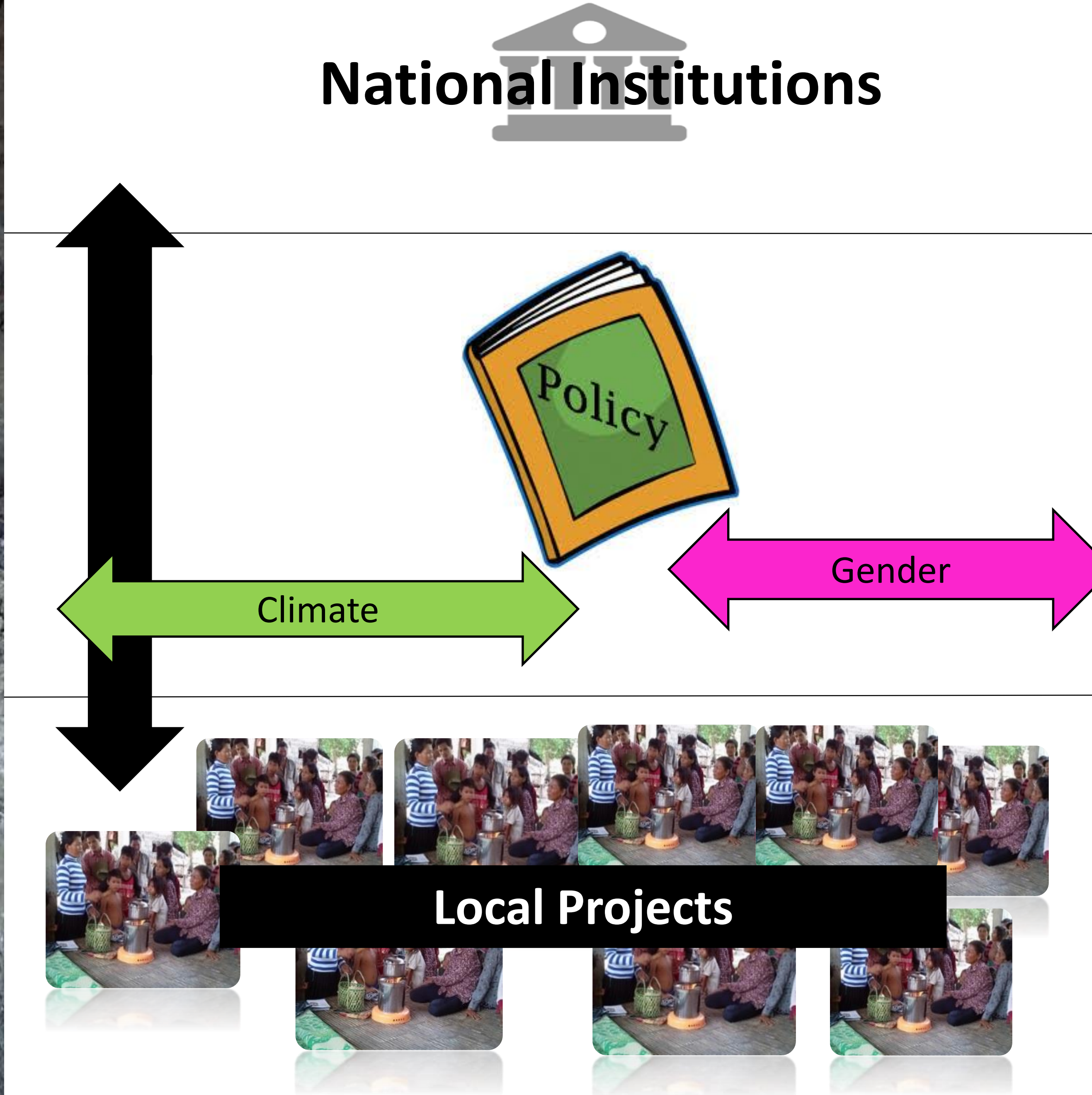
Source: IGES. 2019

ADB is also working with Japan to increase funding for projects that deliver co-benefits

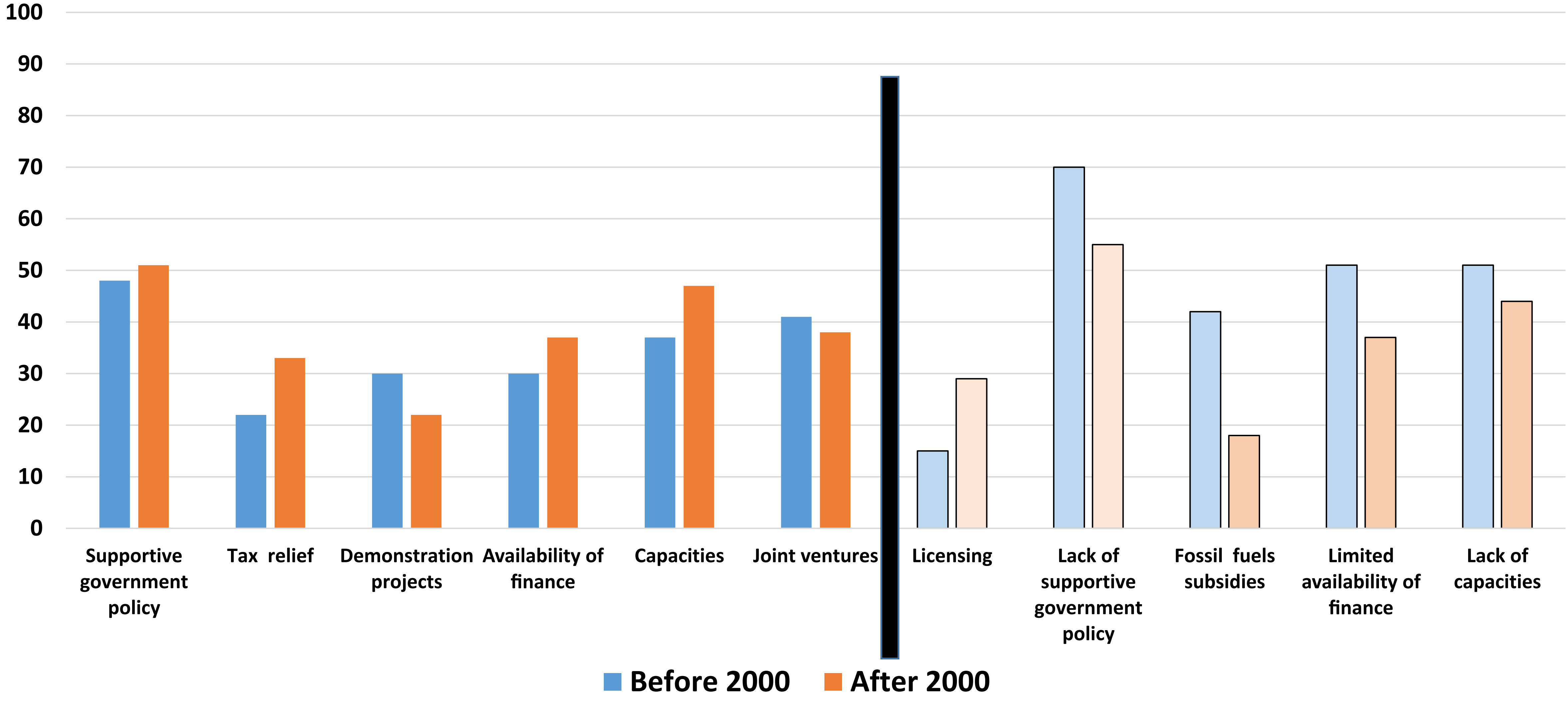
#	Projects (Approved/for Approval)	Country	JFJCM grant	Approval	Technologies supported
1	Preparing Outer Islands for Sustainable Energy Development Project (POISED)	Maldives	$5 million	Mar 2015	Advanced battery system and energy management system (EMS) – with approved JCM methodology: MV_AM002
2	Provincial Water Supply and Sanitation Project	Cambodia	$10 million	Dec 2017	Energy efficient wastewater treatment system
3	Southwest Transmission Grid Expansion Project	Bangladesh	$7 million	Jul 2018	Energy efficient transmission lines
4	Upscaling Renewable Energy Sector Project	Mongolia	$6 million	Sep 2018	Solar PV with advanced battery system and EMS
5	Improving Access to Health Services for Disadvantaged Groups Investment Program	Mongolia	$3.48 million	Oct 2019	Energy efficient HVAC, high insulation window, rooftop solar PV and ground source heat pump
6	Greater Male Waste to Energy Project	Maldives	$10 million	Aug 2020	Waste to energy plant (incineration)
		TOTAL	$41.48 million		**Source: ADB, 2020**



IGES has also worked with ADB to support technology change that delivers co-benefits in Southeast Asia



Success and Failure Factors for Low Carbon Technology Transfer



Source: Kirchherr and Urban, 2018

Key question: How can ACAP, IGES, CAA, and UNEP help you transfer technologies?

1. **Provide marketing and networking opportunities during training and workshops?**

2. **Develop concept notes for concrete demonstration projects?**

3. **Share information on policy trends and technology needs?**

4. **Others….?**