

# IIASA-IGES collaboration on Air Pollution using GAINS

M. Amann, Z. Klimont, J. Borken-Kleefeld, IIASA  
E. Zusman, N. Matsumoto, IGES

**Open Workshop**  
**Towards further collaboration between Japanese**  
**research community and IIASA**  
**January 31, 2017**

Transport emissions: significant problem in Asia

Emissions control policies: help achieve many sustainable development goals (SDGs)

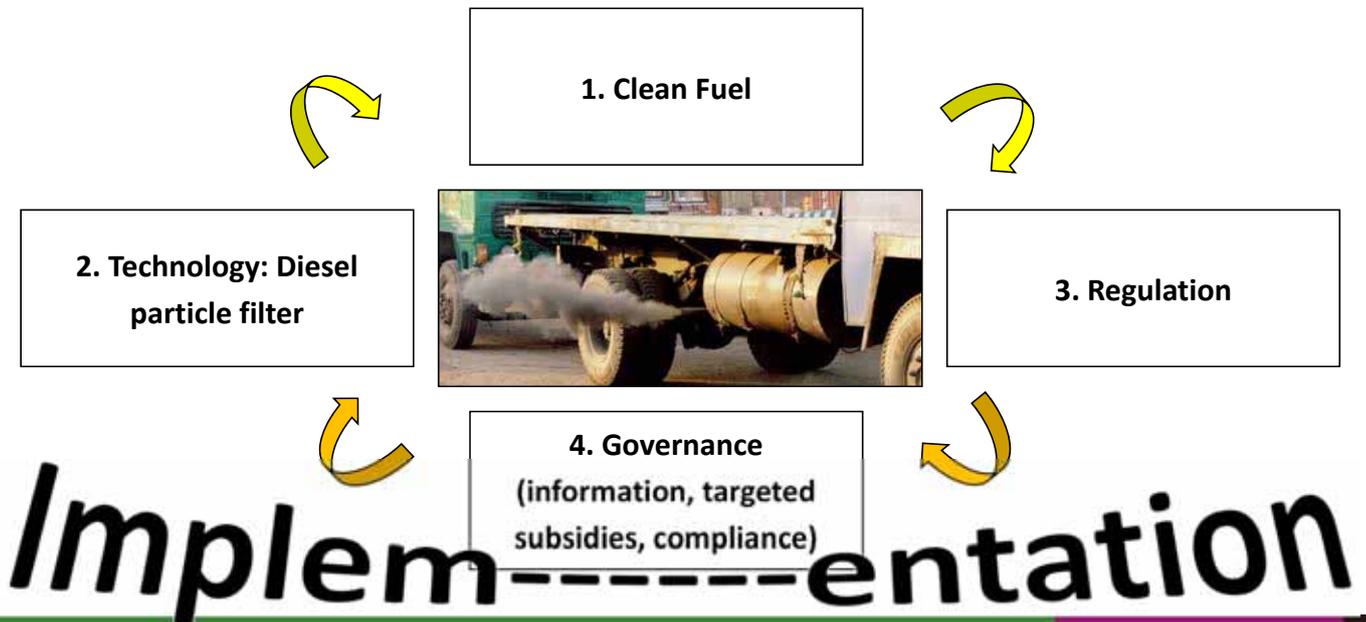
Policy implementation: significant problem in Asia



**THE GLOBAL GOALS**  
For Sustainable Development

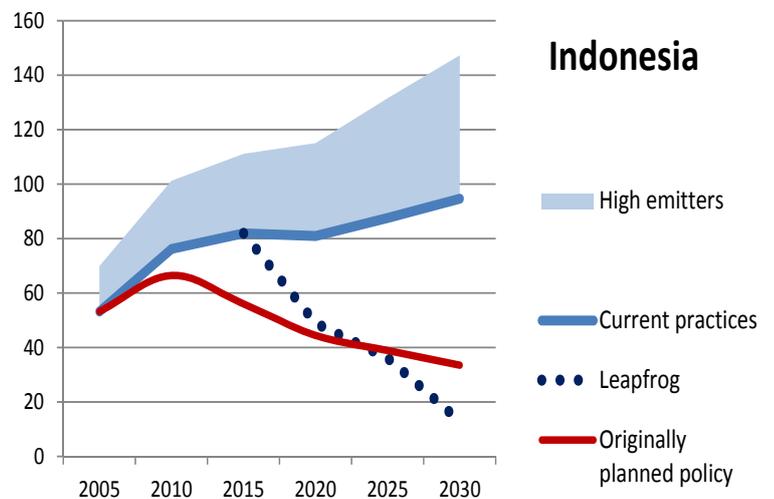
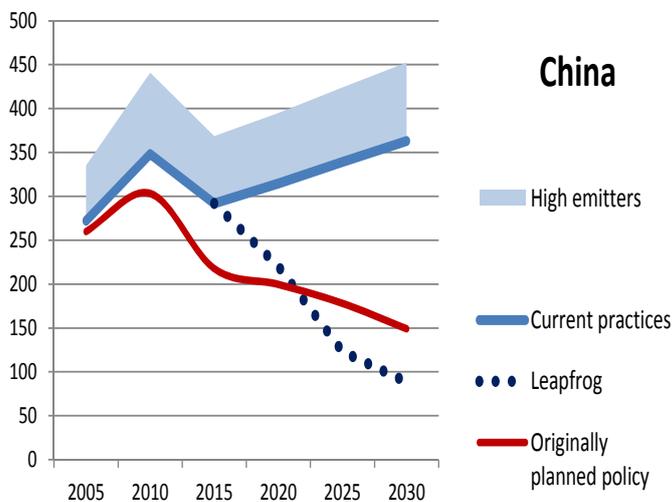
# Why is policy implementation challenging for transport emissions?

Requires combining four elements:

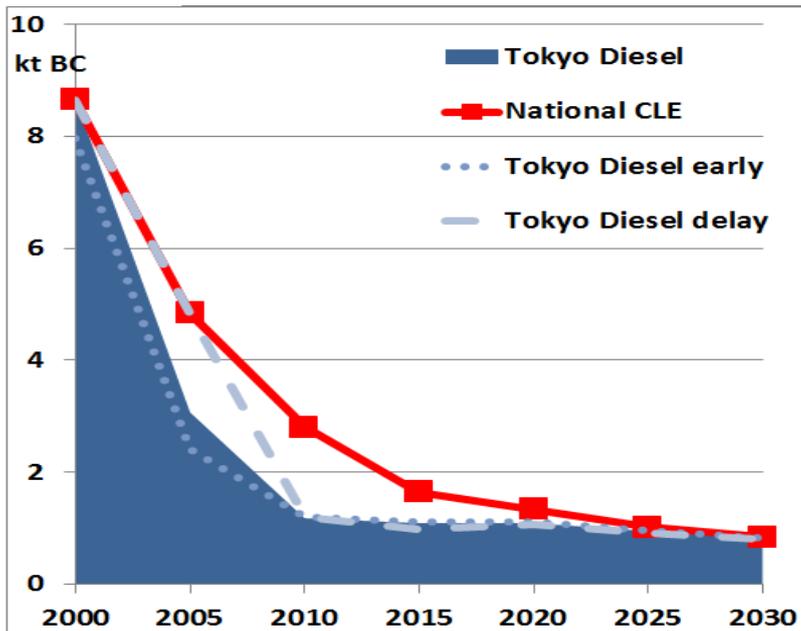


We analyzed three scenarios that capture the implementation issue:

1. National legislation as originally planned
2. Current practices (incl. poor maintenance)
3. 'Leapfrog' to latest technology



## Emissions of BC from road transport in Kanto Region



### TMG vs National policy

- 30-50% lower emissions of BC in 2005 and 2010
- Faster achievement of compliance with PM2.5 standards
- Effect of TMG policy 'visible' until 2020

### TMG policy sensitivity

- Earlier introduction would have provided only small additional benefit
- Delay would result in half of the benefit before 2010

## Concluding Thoughts

1. The co-benefits of a successful diesel control strategy in Asia are sizable.
2. The GAINS model enabled a systematic evaluation of:
  - Co-benefits for other pollutants;
  - Direct costs of action;
  - Health impacts; and
  - Climate impacts.
3. Many countries have struggled to quickly introduce a diesel control strategy, thereby losing the benefits.
4. Often the struggle is due to governance arrangements that lock-in vested interests and weaken compliance.
5. Sharing Japan's experience in regulating diesel vehicles may help overcome implementation barriers, saving money and lives in other countries in Asia.
6. Through the collaboration, GAINS is equipped with updated Japanese data (energy, transport, emission inventory) enabling improved modelling and policy analysis that could help other countries in the region.



**Achieving  
the Sustainable  
Development  
Goals:  
From Agenda  
to Action**



**POLICY BRIEF** IGES IDG  
Number 25

**Strengthening the Linkages Between Air Pollution and the Sustainable Development Goals**

**Key Messages**

- 1. Air pollution is included in the SDGs but it is not clearly highlighted in the SDGs structure.
- 2. Air pollution should be highlighted more prominently and systematically. About globally 7 million people a year die prematurely due to poor air quality. Five issues have a more significant impact on human development:
- 3. Air pollution is explicitly mentioned in 1 of the 17 SDGs (1 target text) but not in a systematic way. Nevertheless, air pollution is closely related to nearly all of the other SDGs, including those on human health, water, energy, growth and jobs, infrastructure, cities, sustainable consumption and production, climate, water and land, even though these linkages are not specifically mentioned.
- 4. Part of the reason that these linkages are not visible is that the structure of the SDGs includes and mixes air pollution's causes, effects, and solutions. The SDG structure also emphasizes air pollution as an issue for cities without clearly considering its effects on rural communities, crops, vegetation, water, or transboundary impacts.
- 5. This policy brief presents an integrated assessment of air pollution's linkages with the SDGs, both positive and negative.
- 6. This policy brief makes suggestions to the air pollution community on how to promote the incorporation of air pollution control measures into plans to implement the SDGs at the local, national, regional and global levels.
- 7. Many examples of SDGs focus on solutions to air pollution, such as sustainable consumption, cities, and transport systems, etc., and other pollutants. SDGs provide an opportunity to promote more integrated approaches in order to strengthen synergies.

continued on next page



**Prof. Toshiyuki**  
Executive Director  
International Global  
Development Institute  
IGES



**Prof. Toshiyuki**  
Executive Director  
International Global  
Development Institute  
IGES