Section1:
Analytical Frameworks

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ISAP: Low Carbon Transport in Asia: Strategies for Optimising Co-benefits
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Outline

1. Overview of the Section
2. Summary of Chapters
3. Summary of Overall Results

Chapters in this section

Section 1: Analytical Frameworks

Section 2: Case Studies

Section 3: Future Climate Regime

Chapter 2
The Co-benefits of Transportation Policies in Asia: A Synthesis

Chapter 3:
An Integrated Policy Strategy for Maximizing Co-benefits of Light Duty Dieselization in Asia

Chapter 4:
Reducing PM Emissions from Buses and Trucks in Asia: A Framework to Assess Air Pollution and CC Co-Impacts

Summary of Chapters and Results

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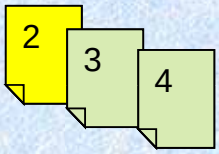
by Herran and Matsumoto
(Tohoku University, IGES)

The Co-benefits of Transportation Policies in Asia: A Synthesis



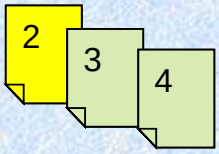
Scope:

Transport policies in developing Asia

Approach:

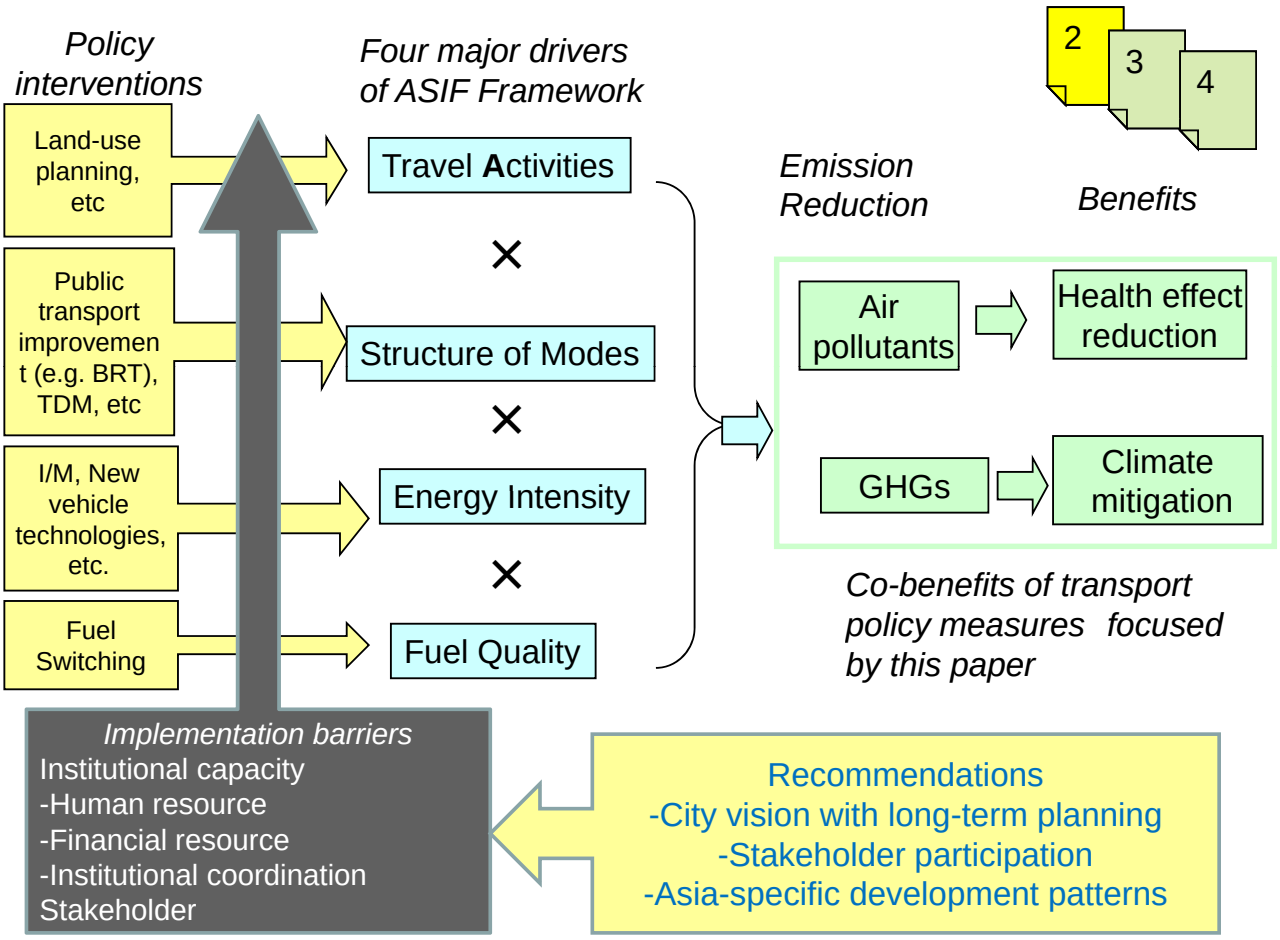
- Categorize policies into four groups according to **ASIF framework**
- Survey the **estimated co-benefits in Asia from literature**
- Identify **implementation barriers**
- Developed **recommendations**

The Co-benefits of Transportation Policies in Asia: A Synthesis



Results:

- **Packaging policies** across the four ASIF categories has the greatest potential but need to be aware of **local context**
- Identified implementation barriers including: **institutional capacity** (both financial and human resource, and coordination) and **stakeholder enagement**
- Recommended three kinds of countermeasures: thorough planning with **a long-term perspective**, **stakeholder participation**, consideration of **Asian-specific development patterns**



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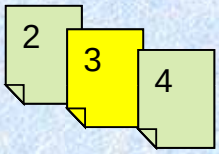
By Minjares and Rutherford (International Council on Clean Transportation: ICCT)

An Integrated Policy Strategy for Maximizing Co-benefits of Light Duty Dieselization in Asia



Scope: **Dieselization and light duty vehicles (LDV)**

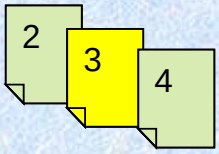
Approach:

- Survey the public health, developmental and climate **disbenefits of weak emission controls** on LDVs
- Reassess the climate benefits of diesel LDVs after:

  (1) accounting for the **warming influence of black carbon aerosols**

  (2) tendency to **undermine** the stringency of fuel efficiency standard set based on **vehicle weight**
- Consider the impact of dieselization on **fuel tax revenues** in developing Asia

An Integrated Policy Strategy for Maximizing Co-benefits of Light Duty Dieselization in Asia

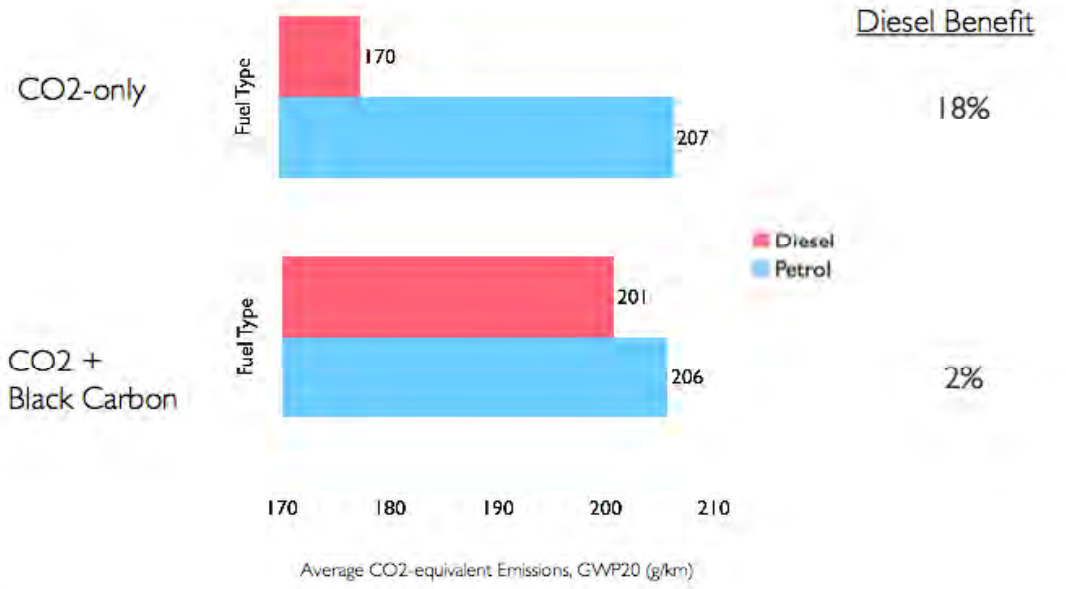


Results:

- **Euro 3 and 4** compliant light-duty diesels can **reduce CO2 equivalent emission reduction by 80%** when property accounting for **heat absorbing aerosol emissions like black carbon**
- Additional **15-75% of potential CO_2 emission reductions** of light-duty diesels can be **lost under weight based efficiency standards** due to endogenous weight increases
- Propose integrated fuel neutral policy approach
  - **a single set of emission standards** for gasoline and diesel vehicles
  - **cooperate average or footprint-based efficiency standards**
  - **fuel taxes levied based upon carbon context**

2 3 4

Black Carbon Reduces Diesel Benefit



icct Source: ICCT Analysis

Results are preliminary and have not yet been reviewed by ICCT participants.

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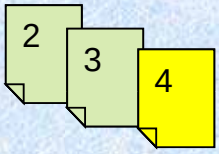
By Reynolds, Grieshop and Kandlikar (Institute for Resources, Environment, and Sustainability, U. of British Columbia)

Reducing Particulate Matter Emissions from Buses and Trucks in Asia



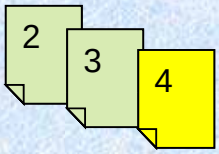
Scope:

Policies for on-road heavy-duty diesel vehicles (HDDV)

Approach:

- Review the **role of PM** in local air pollution and global climate change / Overview of **GHGs and PM emissions from HDDV**
- Develop an **analytical framework** to assess the co-impacts of policies designed **to mitigate PM from HDDV in Asia**
- Examine **a range of PM control options** based on the framework

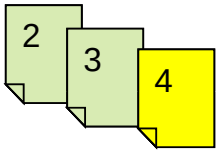
Reducing Particulate Matter Emissions from Buses and Trucks in Asia

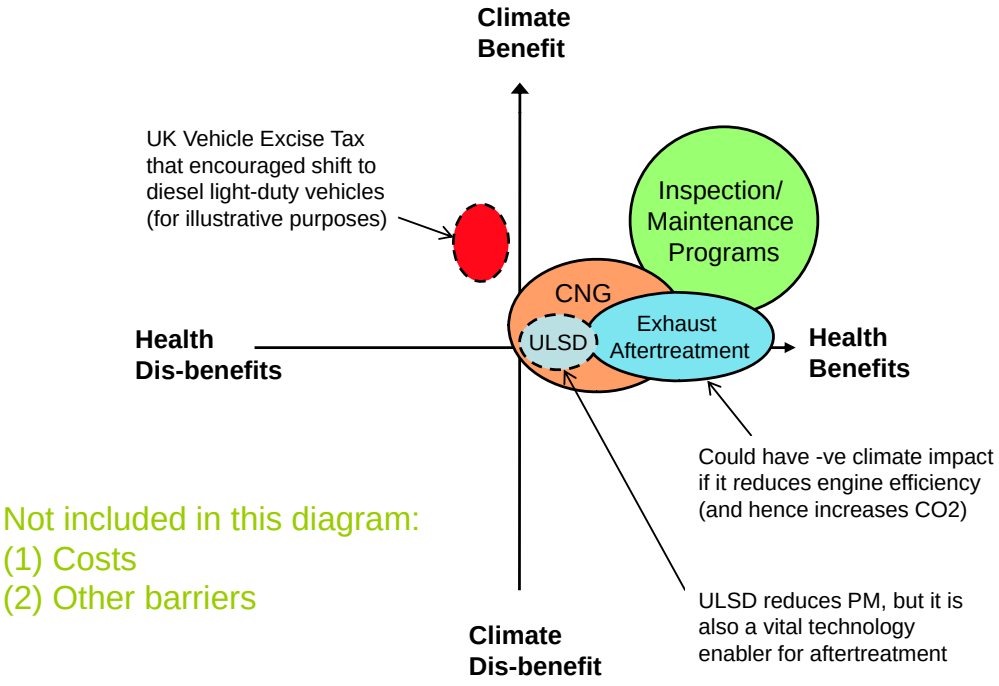


Results:

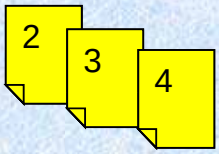
- **Exhaust after-treatment** remains a highly **promising** option for PM reduction but devices are **expensive**
- Investment in **institutional programs** (**I/M program**) appear likely to be a better expenditure of financial and human resources
- There are **multiple possible approaches** with complex interactions and co-impacts, **not all of which are beneficial**

Assessing PM reductions options





Summary of Results Points of convergence



- **Importance of PM** for air pollution benefit → policies related to **diesel vehicles** would be crucial (Chapter 3 and 4)
- **Warming and cooling effects of PM → black carbon** is a key (Chapter 3 and 4)
- Effectiveness and limitation of **emission control** (all chapters)
- Co-benefits are **not automatic** (all chapters)
- Importance of **integrated approach** to limit trade-offs and maximize synergies (all chapters)

Summary of Results
Areas for future research

- Accumulation of **policy relevant knowledge** based on-the-ground assessment of
  - Co-benefit **estimates in Asian cities** (such as some case studies in this book)
  - Identification of **implementation barriers**
  - How the **recommendations** become integrated into **policy processes**

→ Development of relevant **policy packages suiting local conditions**

- Implications for the **post Kyoto regime**

Thank you!