

Chapter 6

Major Findings and Next Step

Study on energy efficiency improvement in the transport sector through transport improvement and smart community development in the urban area Working Group

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CHAPTER 6

Major Findings and Next Step

1. Key Findings

The study delivered the following outcomes.

1. This study analyzed the options that could control the passenger transport energy demand building on the ASIF framework. As a result, the study identified various policies and measures, including (1) avoid the use of passenger vehicles, (2) shift toward the mass rapid transits, (3) upgrades the overall efficiency of urban transport, and (4) provision of financial support.
2. The identified policies and measures could be effective when each of them is implemented individually, while more effects could be obtainable when a packaged of the identified measures is being implemented.

Table 6-1. Policy options

Avoid	To reduce travel demand by integrating the land use planning, and transport planning to create city clusters that require less mobility, or reduce travel demand.	<ul style="list-style-type: none"> • Vehicle registration fees/tax • License plate fee • Mandatory vehicle insurance • Road pricing • Parking fee
Shift	To utilize the alternative mode of transport, such as mass rapid transit systems, away from passenger vehicles. Mass transit systems would include buses, rails and subways, of which energy/CO ₂ intensities per passenger kilometer would theoretically be lower than that of passenger vehicles.	<ul style="list-style-type: none"> • Mass rapid transit systems • Bus rapid transit systems • Improving feeder bus service • Improving multi-modal transfer through comprehensive tariff structure
Improve	To upgrade the overall efficiency of urban transport on vehicle efficiency through technological innovations, or policy measures to manage road traffic or use of information technology.	<ul style="list-style-type: none"> • Fuel economy improvement, • Alternative vehicles (electric, CNG, and fuel cell vehicles) • Intelligent transport systems • Incentives or regulation.
Finance	To offer monetary basis for developing and improving transport related systems. Various taxes are available as the options, and the revenues could be reallocated to road improvement or public transport enhancement.	<ul style="list-style-type: none"> • Fuel tax • Congestion pricing • Environmental tax • Vehicle registration tax • Licence plate bidding • Parking fee

3. Other than the above listed measures, infrastructure investment, particularly on road is important to control the transport sector oil demand growth. In fact, the investment in road infrastructure could provide the short-term means that can cope with the traffic congestions, and save the oil demand. In contrast, the infrastructure investment in the alternative transport mode, such as rails and buses, could provide with the long-term measures to cope with the congestion and oil demand growth. This study has conducted a simulation exercise on the impacts of road infrastructure investment, which could be implemented within a relatively short time period, and small monetary amounts. The result shows that the analyzed area in Kuningan of Jakarta could save about 15% of oil demand with the investment amounting to US\$ 4,000.

4. Nevertheless, the simulation exercise has found that the small-scale investment for road infrastructure improvement could provide a solution only for one or two years in view of the fast increases in the number of passenger vehicles.
5. The study has found that step-by-step approach for implementing the policy measures and infrastructure improvement is necessary to cope with the urban transport issues, such as congestion, ultimately to manage the growth in oil demand.

Step 1 Immediately	Implementation of small-scale investment options as soon as possible
Step 2 within 1-2 yr	Implementation of relatively large-scale investment options before the effect of small-scale investment is being felt.
Step 3	Implementation of fundamental ASIF measures to control traffic demand and to mitigate oil demand increase before the effect of large-scale investment is being felt.

6. How to implement the policies, measures and plans would continue to pose the important agenda. A number of cases in rapidly growing Asia show that the urban transport related infrastructure development plans were not implemented as planned due to variety of reasons. These would include, lack of governance, lack of ministerial coordination at the central government level, and lack of coordination between central and local governments. The case study on Jakarta pointed out that a number of policy recommendations have been made, while the implementation did not follow as expected. It is important to clearly identify the barriers for implementation and measures need to follow.

2. Next Step

Building on the analysis and key findings in this phase study, following two issues could be analyzed in depth as the next phase of study.

- **Identification of barriers for policies implementation and study on overcoming the barriers**

The next phase of the study will focus on the analysis of how to implement the policies and measures that could cope with the transport related issues. Through case study for some members in East Asia, the study will identify the barriers for implementing policies and plans. The study will also analyze the cases outside of East Asia, to highlight the successful cases in implementing the urban transport policies and plans, and to learn lessons.

- **Quantitative analysis of the impacts of rails, subways, and buses as the alternative to passenger vehicles**

As the extension of the impacts from road infrastructure investment, the next phase of study will quantitatively analyze the impacts from the introduction of alternative transport mode (rails, subways and buses) on the energy savings. The cost effectiveness of rails, subways and buses will be analyzed to draw policy implications that can provide the useful basis for policy-makers and urban planners.