Transformation Strategies Towards Low-Carbon Transport - Challenges and Innovations -

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IEA forecasted that car ownership in China and India will grow nearly ten times in 2050 compared to 2010. Accordingly, car production in Japan, Korea, and China has reached 20 million in 2007, which is already larger than that in whole Europe or North America. This is a factor to push the car ownership even more.

One of the substantial causes of car ownership increase is increase in income due to economic growth. This brings about car excess demand causing road traffic congestion as a combined effect with a slower increase in road supply. Looking back the historical trends of car ownership by city, Tokyo was saturated in a much earlier stage than any other metropolises of economic development due to its comparative superiority in quality assurance of railway service to that of road and thus helped very much slow down its motorization. An extreme congestion was seen in Bangkok in early 90's when about 10% of commuters spent more than eight hours a day for commuting due to poor rail transit systems causing recursive acceleration of motorization and urban sprawl. Serious congestions occurred also in Seoul and Beijing.

As for countermeasures, facing road congestion, people in developing countries tend to wish immediate road investment to increase its capacity looking only the road system. However, in many cases it is a wrong decision. Rather the same investment in railways will help solve the problem much more efficiently because the reduction of the road demand due to absorption of the demand by railways will be more effective to release congestion.

CUTE study done by WCTRS-SIG11 provided CUTE matrix to sophisticatedly summarize instruments of technology and policy in relation to strategies. This paper provides several good practices of policies according to CUTE matrix such as sky train in Bangkok, top runner method and low emission preferential tax in Japan, as well as the methods to find out the lowest carbon system in urban and intercity transport based on LCA.
In spite of such evidences of good practices, we very much lack of useful financing system including Clean Development Mechanism for transport systems in developing countries. It is urgent to prepare suitable financing methods with risk hedge assurance because we do not have much time before losing growing power of economy due to rapidly undergoing ageing not only in developed countries but also in developing countries particularly in Asia.