



**Institute of Transportation,
Ministry of Transportation and
Communications, R.O.C.**

Press Release on May 27, 2014

Please release immediately.

Contact Persons: Director, Cheng-Wei Su

Deputy Director, Yu-Wen Yang

Telephone: 02-23496800 (Mobile : 0912-597-498) 、 02-23496815

E-mail: jason@iot.gov.tw 、 yyw@iot.gov.tw

Website: www.iot.gov.tw

Low-Carbon Cities Succeed With Your Help

As of 2013, Taiwan has 14.19 million scooters. Scooters are the most important mode of transportation for the people of Taiwan. Each household has an average of 1.71 scooters, which is approximately 2.3 times the number for passenger cars (0.75 passenger cars for every household). A new study conducted by the Institute of Transportation, Ministry of Transportation and Communications indicates that the energy consumption of scooters becomes particularly evident with changes in speed (fuel efficiency at a speed of 30 km/hr is 2.6 times greater than it is at 10 km/hr) when driving at speeds under 30 km/hr. The use of traffic management methods to make scooters maintain speeds above 30 km/hr would achieve optimal results for energy saving and carbon reduction. Data collected by the study show that higher emission standards would result in reduced energy consumption and CO₂ emissions. Scooters of emission standard V consume about 20% less fuel than those of emission standard IV. Using the scooters with higher emission standards can also help Taiwan's most significant commuter scooters save more energy (and more money), thereby achieving an environmentally friendly transportation environment.

In 2012 and 2013, the Institute of Transportation collected data on instantaneous energy consumption/emissions from five types of scooters driving over six types of roads. The institute obtained a total of 390,000 pieces of valid data on per-second road measurements to construct the relationship between speed and fuel consumption, as well as CO₂ emission curves and models. These statistics on fuel consumption and emission rates for scooters at different speeds can help the Ministry of Transportation and Communications assess the energy saved by transitioning from scooters to buses. In addition, scooter drivers can reference these statistics to select stages of environmental protection standards and even to change their driving habits. Local governments can also reference these data to set times for signals to change for scooters at waiting areas and to set speed limits.

The results of this study indicate that when scooter drivers see red lights ahead of them, they cruise forward at low speeds, resulting in their energy consumption/emission curves falling into regions of high fuel consumption and high CO₂ emissions. The study indicated that total fuel consumption with the implementation of “idling stops” would be approximately 1/4 lower than it is without stops. This proves that the implementation of idling stops would be effective at reducing energy consumption and CO₂ emissions. No significant instantaneous increase in fuel consumption is seen when vehicles restart.