



The Role of Motorised Two-Wheelers in Sustainable Transport in Asia and the Future of Electric Two-Wheelers

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Manila, Philippines

Motorised Two-Wheelers in the work of GIZ

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GIZ

**ASEAN-German Technical Cooperation Project
“Energy Efficiency and Climate Change Mitigation in the Land Transport Sector”**



About GIZ

Deutsche Gesellschaft für Internationale Zusammenarbeit (GIZ) GmbH
(German International Cooperation)



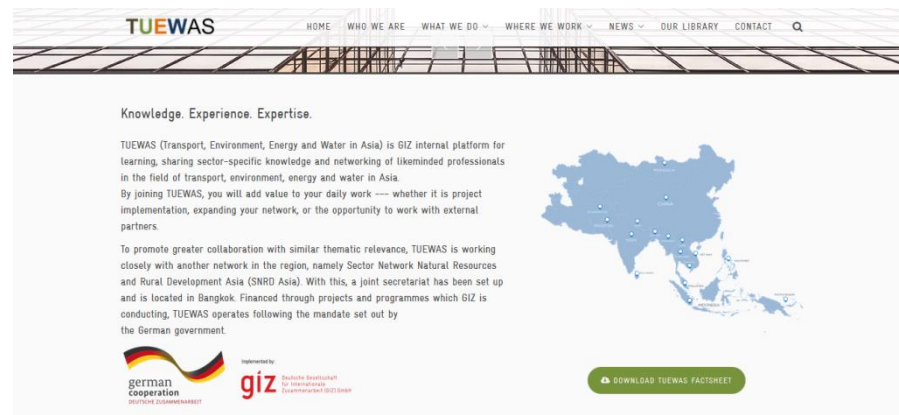
- GIZ's purpose is to promote international cooperation for sustainable development.
- GIZ is a 100% federally owned, public-benefit enterprise.
- GIZ operates in more than 130 countries worldwide
- GIZ employs approximately 17,000 staff members worldwide
- GIZ is active in a variety of sectors, including e.g. education; health care; agriculture; Infrastructure (water, energy, transport)



GIZ Sector Network TUEWAS

Transport, Environment, Energy and Water in Asia

- TUEWAS is a regional platform that promotes the exchange of knowledge and experience in the scopes of transport, environment, energy and water in Asia.
- TUEWAS connects over 50 projects across 16 Asian countries in the field of transport, environment, energy and water.

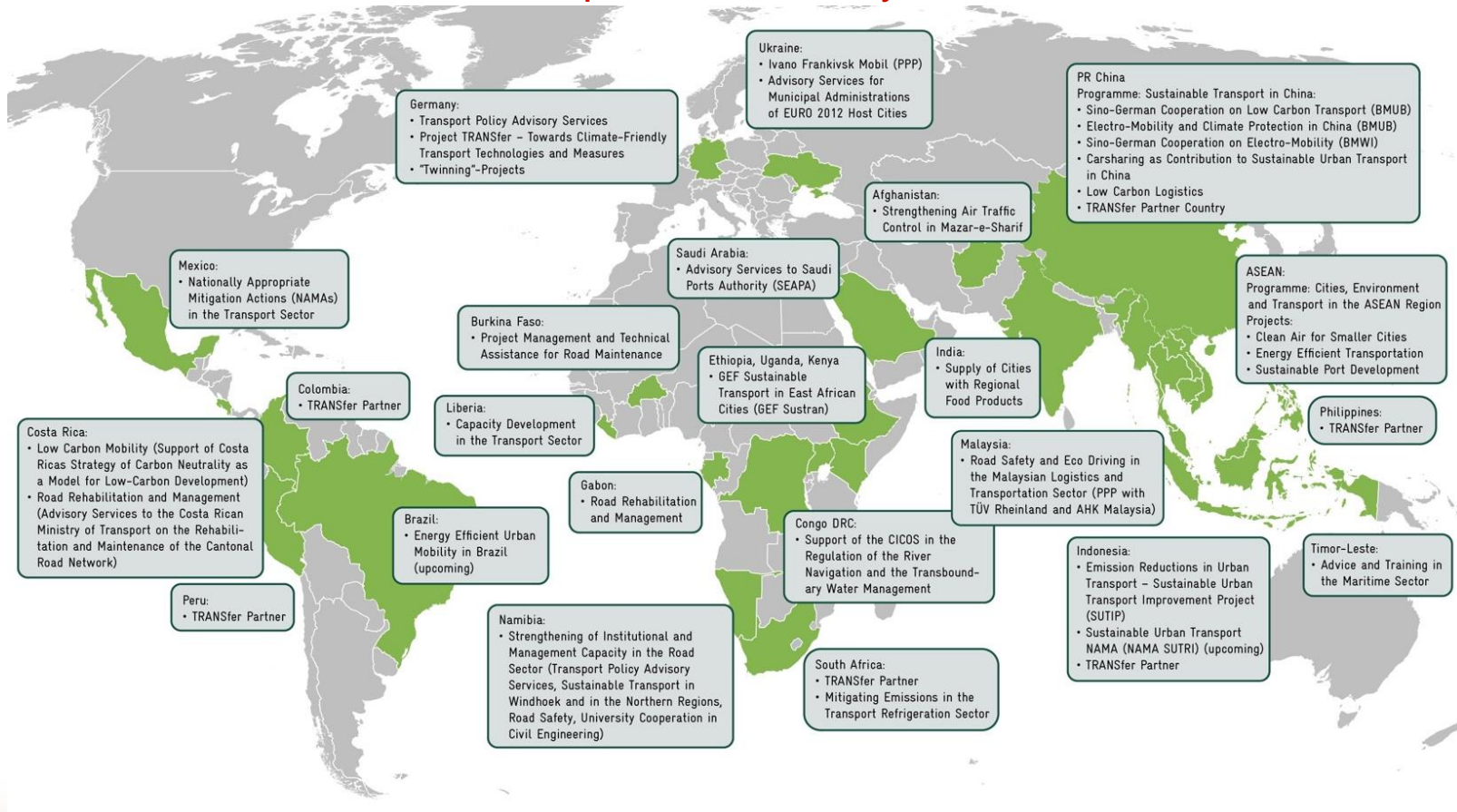


www.tuewas-asia.org



About GIZ

Current Activities in the Transport and Mobility Sector





Energy efficiency and climate change mitigation in the land transport sector in the ASEAN region

In Short: Transport and Climate Change (TCC)

- **Key activities:** The region has strategies and action plans with which it can enhance energy efficiency in the transport sector and reduce the emission of greenhouse gases (GHG)
- **Overall term:** 2012 – 2015 (phase I); 2016 – 2018 (phase II)
- **Budget:** € 2.5 million for phase I; € 3.5 million for phase II
- **Commissioned by:** German Federal Ministry for Economic Cooperation and Development (BMZ)
- **Partner:** ASEAN secretariat
- **With direct implementation in:** Indonesia, Malaysia, Thailand, the Philippines, Vietnam



Two-wheelers in Asia

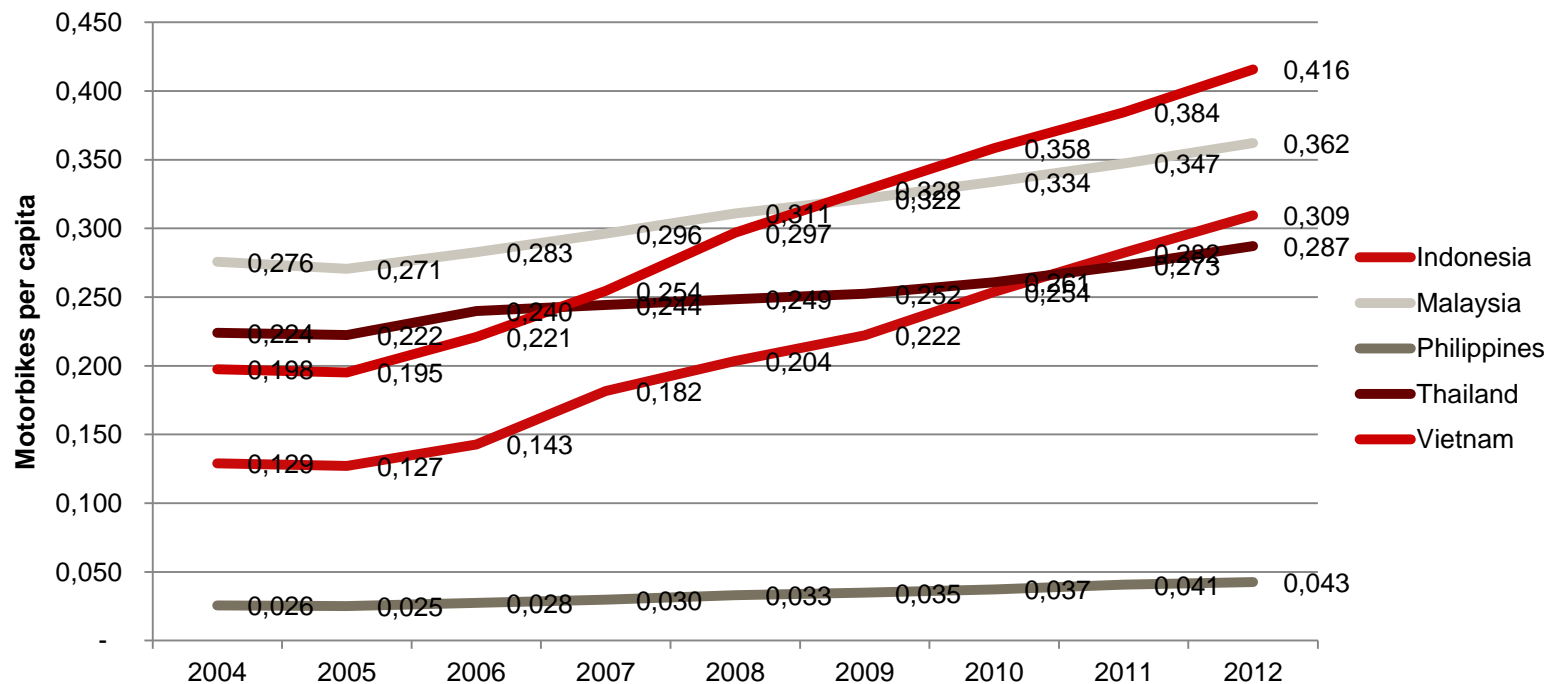
- Nowhere else in the world is the concentration of 2/3Ws as high as in South and Southeast Asia
- 2Ws are widespread because they provide:
 - Cheap, reliable, and convenient accessibility
- 2Ws generally take up <40% of the size of a car
 - This allows for a high degree of manoeuvrability, especially in urban congested areas
- They often fill the gaps in urban transport systems
- 2Ws are also used for light commercial/freight transport in several Asian cities





Two-wheelers in ASEAN

Annual Growth of Motorbikes per Capita (2004-2012)



Source: ASEAN Statistics (2014)



Two-wheelers and air pollution

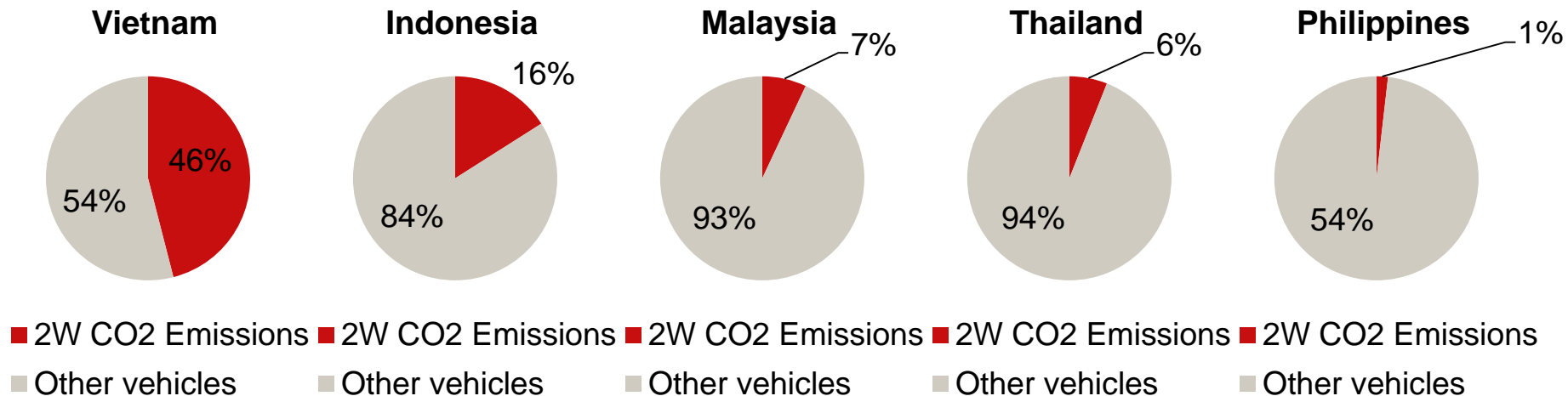
- 85% of global 2Ws have 2-stroke engines (UNEP/KJAER, 2013).
 - With 2-strokes, up to 40% of the fuel and much of the oil escapes unburned (ICCT, 2009).
 - Thus, 2Ws can constitute “the prime source of urban air pollution” (UNEP/KJAER, 2013).

Pollutants	Unit of measurement	2-stroke engine C2W	4-stroke engine C2W
Carbon Monoxide (CO)	[g/km]	27.5	16
Volatile Organic Compounds (VOCs)	[g/km]	14.4	5
Nitrogen Oxides (Nox)	[g/km]	0.16	0.99
Sulphur Oxides (SOx)	[g/km]	0.01	0.02
Particulate Matter (PM)	[g/km]	0.35	0.21

Source: UNEP Clean Fleet Management Toolkit (2009)



Two-wheelers and CO₂ emissions



- Electric 2Ws emit between 1/3 and 4/5 less CO₂ per km compared to petrol-powered 2W



TCC's work on two-wheelers

Activities

Motivation and Approach

- Despite their high mitigation potential, 2Ws receive **the least attention by policy makers as a mitigation option** (esp. in INDCs)
- TCC promotes an intergrated approach:
 - fuel economy standards and technical improvements,
 - policies and regulations,
 - I&M-programmes,
 - supporting the uptake of electric 2Ws through standards, awareness raising, myth-busting, experience-sharing



TCC's work on two-wheelers

Activities

- Factsheet on the potential of electric-two wheelers in Thailand
- Supported a NAMA proposal on energy efficient two-wheelers in Malaysia
- Supported standard development for electric two-wheelers in Malaysia
- FE Reports – covering two-wheelers (on-going) in Thailand and Vietnam
- Regional workshops and side-events, e.g. at the BAQ2016



SUTP.

Sustainable Urban
Transport Project



Who we are:

The **Sustainable Urban Transport Project (SUTP)** is hosted by GIZ on behalf of the Federal Ministry for Economic Cooperation and Development (BMZ) and supported by numerous partners.

What we do:

SUTP's main objective is to assist developing world cities achieve their sustainable transport goals, **through the dissemination of information about international experience, policy advice, training and capacity building and targeted work on sustainable transport projects within cities.**

Our Target group:

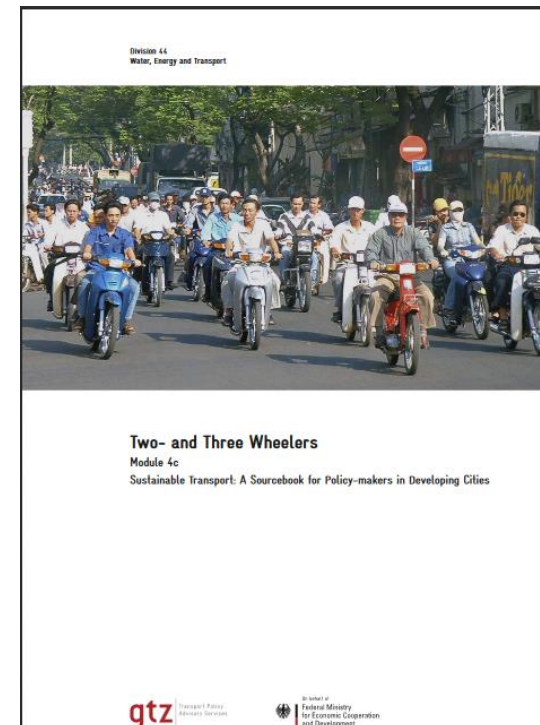
- Policy Makers at Municipal, Regional and Central Governmental Level
- Transport Officials at Municipal, Regional and Government Level
- Transportation and Urban Planning Professionals
- Academia



SUTP Sourcebooks investigate the key areas important for a sustainable transport policy framework in developing cities.

Module 4c “Two- and Three Wheelers”

Currently being updated, expected to be finalised in December 2017



We have more than **30** Sourcebooks in **13** languages available on www.sutp.org.



New Paradigm: Avoid – Shift - Improve

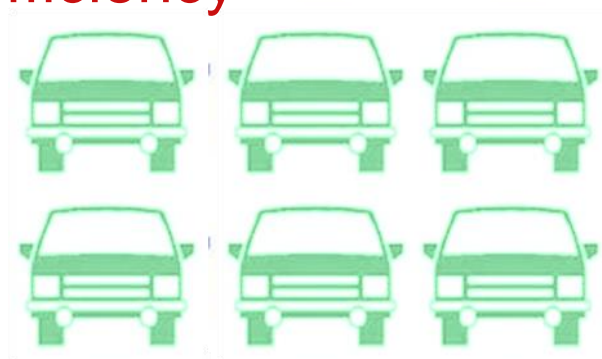
Holistic approach to transport energy efficiency

AVOID
unnecessary trips

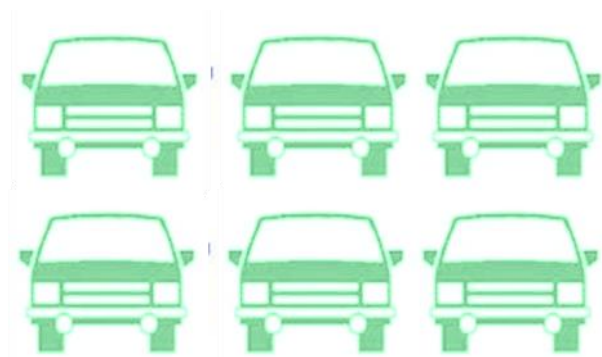
REDUCE km



SHIFT modes



IMPROVE vehicles
low carbon fuels





Thank you for your attention!

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As a federal enterprise, GIZ supports the German Government in achieving its objectives in the field of international cooperation for sustainable development.

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