



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

Monday, 27 November 2017

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.

TUEWAS HOME WHO WE ARE WHAT WE DO WHERE WE WORK NEWS OUR LIBRARY CONTACT

Knowledge. Experience. Expertise.

TUEWAS (Transport, Environment, Energy and Water in Asia) is GIZ internal platform for learning, sharing sector-specific knowledge and networking of likeminded professionals in the field of transport, environment, energy and water in Asia. By joining TUEWAS, you will add value to your daily work — whether it is project implementation, expanding your network, or the opportunity to work with external partners.

To promote greater collaboration with similar thematic relevance, TUEWAS is working closely with another network in the region, namely Sector Network Natural Resources and Rural Development Asia (SNRD Asia). With this, a joint secretariat has been set up and is located in Bangkok. Financed through projects and programmes which GIZ is conducting, TUEWAS operates following the mandate set out by the German government.



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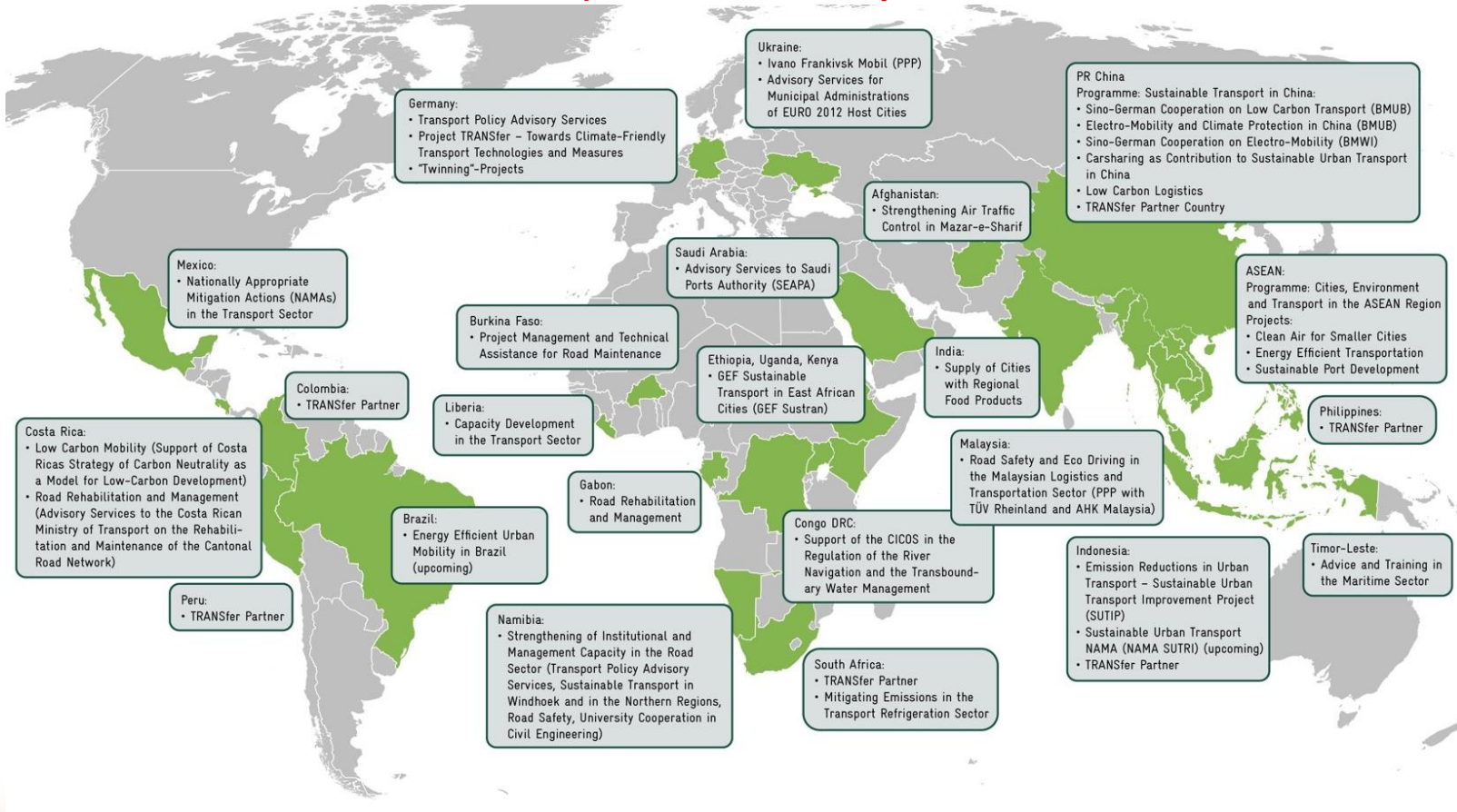
DOWNLOAD TUEWAS FACTSHEET

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

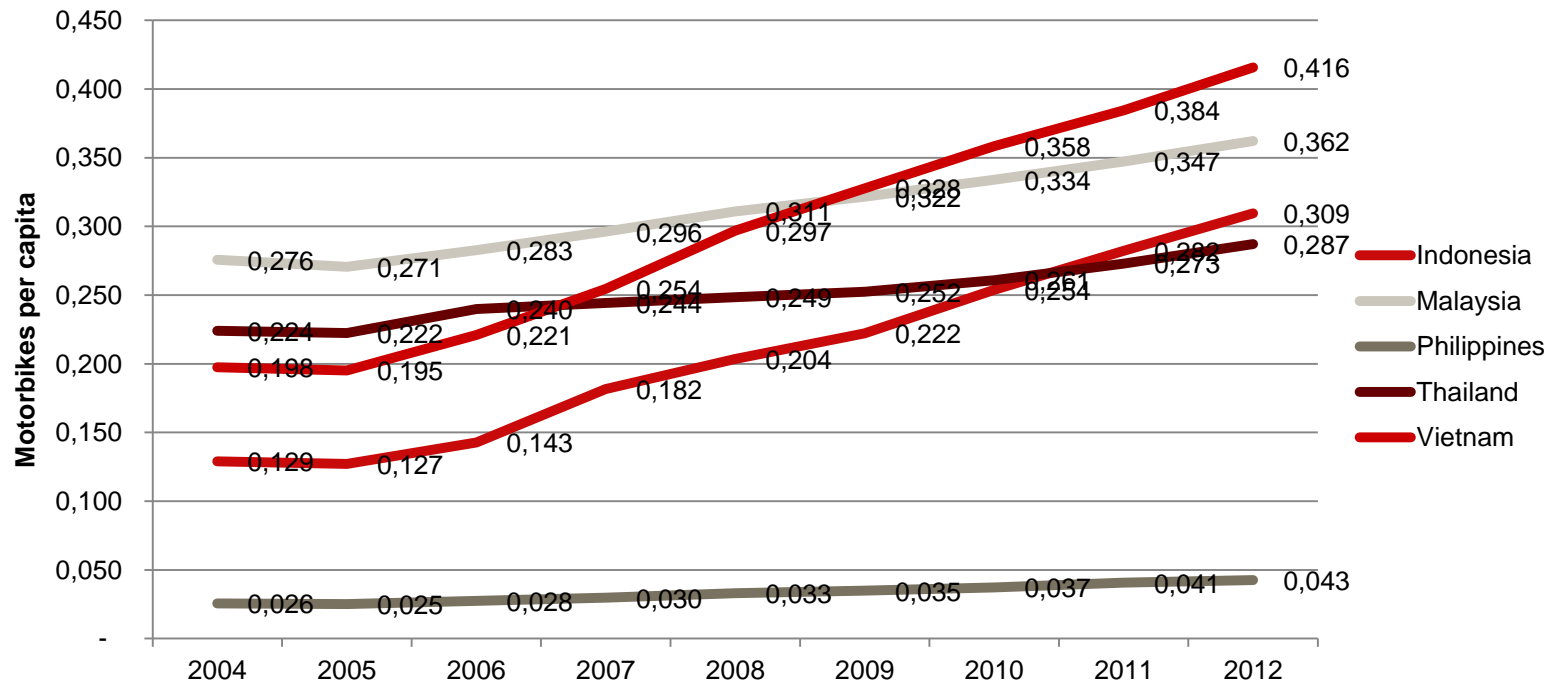
- Nowhere else in the world is the concentration of 2/3Ws as high as in South and Southeast Asia
- 2Ws are widespread because they provide:
 - Cheap, reliable, and convenient accessibility
- 2Ws generally take up <40% of the size of a car
 - This allows for a high degree of manoeuvrability, especially 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)



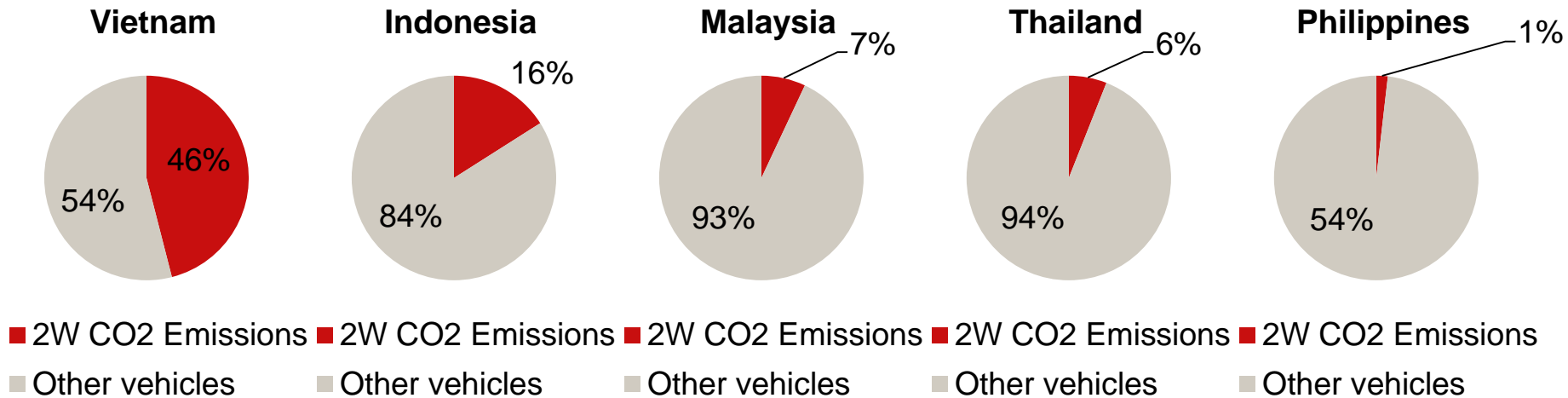
Two-wheelers and air pollution

- 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



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:

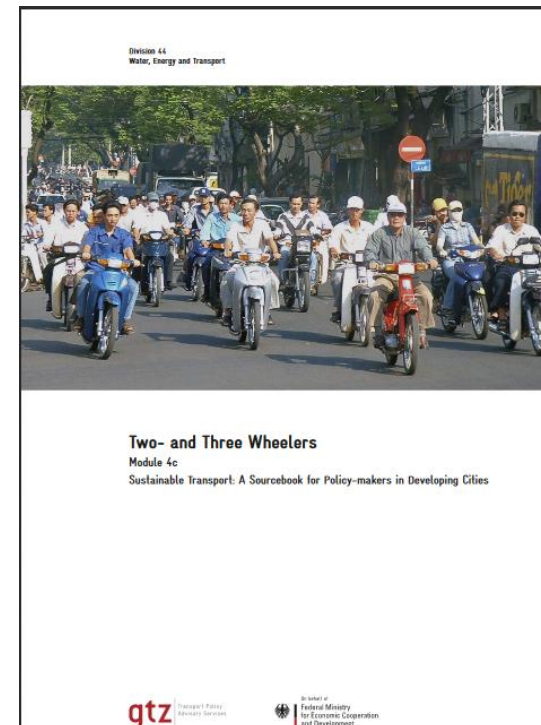
- Policy Makers at Municipal, Regional and Central Governmental Level
- Transport Officials at Municipal, Regional and Government Level
- Transportation and Urban Planning Professionals
- Academia



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

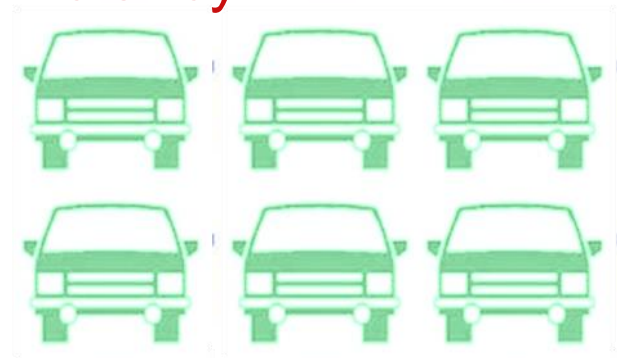
Holistic approach to transport energy efficiency

AVOID
unnecessary trips

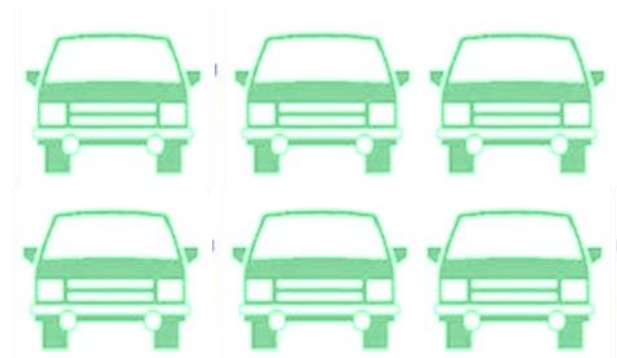
REDUCE km



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.

Published by

Deutsche Gesellschaft für
Internationale Zusammenarbeit (GIZ) GmbH

Registered offices, Bonn and Eschborn, Germany

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Layout

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