



## Clearing the air

### Supporting Asian countries to implement new fuel quality and vehicle emission standards

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### Key messages

- It is projected that Asia's share of global transport CO<sub>2</sub> emissions will increase to 31% by 2030. Fuel quality and vehicle emission standards are central to improving air quality and reducing greenhouse gas emissions.
- Fuel quality and vehicle emission policies need to be embedded in the broader avoid-shift-improve (A-S-I) framework to avoid trips, shift journeys to more efficient or lower emission modes, and improve vehicles and fuels.
- LEDS GP's webinar training series **Supporting Asian countries to implement new fuel quality and vehicle emission standards** provides tools for participants to make the case for the urgent need to advance fuel quality and vehicle emission policies; offers examples from other developing countries; and outlines the steps towards implementing these policies in Asia.

### Introduction

The LEDS GP Transport Working Group has designed a webinar training series to support Asian countries with implementing new fuel quality and vehicle emission standards. The objectives are to inform participants of the potential to mitigate emissions from the transport sector; to identify mitigation opportunities, especially through improved vehicle technologies; and to present case studies of countries' strategies to overcome barriers to the successful implementation of fuel quality and vehicle emission standards. The webinar training series provided supplementary information for participants in a workshop, 'Supporting the implementation and advancement of vehicle emission policies in Southeast Asia', led by the United National Environment

Programme and Clean Air Asia, in collaboration with the Department of Environment and Natural Resources of the Philippines and the LEDS GP Transport Working Group (February 23–24, 2016 in Manila).<sup>1</sup> The Philippines was the ideal location to host the workshop as the country had recently moved towards the Euro 4/IV vehicle emission standards that came into effect in January 2016.

The **LEDS GP Transport Working Group** provides technical assistance, tools, and training for LEDS in transport systems.

The group works to:

- share approaches and practices for transport and land use planning
- provide transport analysis methods and tools
- offer peer to peer, transport-specific financial training and expert assistance.

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## Why should Asian countries address transport emissions?

In Asia, it is especially urgent to reduce emissions because of the projected increases expected to come from this region. According to a recent study, in the Southeast Asia region 36% of the share of air pollution comes from traffic.<sup>2</sup> This share will grow as the number of vehicles is expected to increase significantly. Based on the business as usual scenario,<sup>3</sup> Asia's share of global CO<sub>2</sub> transport emissions is projected to increase to 31% by 2030.<sup>4</sup> Fuel quality and vehicle emission standards are key for improving air quality and reducing greenhouse gas emissions.

## Why focus on the transport sector?

Transport sector emissions are growing faster than those from any other sector.<sup>5</sup> Emissions from transport have negative impacts on air quality, climate, health, and economic development. The webinar **Addressing**

### **air pollutant and climate relevant emissions in the transport sector**<sup>6</sup>

discusses the nexus between air quality and climate impacts relating to the transport sector due to rapid growth of urbanization and motorized transport in developing countries, and the low emission development strategies to mitigate these impacts. The webinar presents examples of key interventions, strategies, and tradeoffs under the A-S-I framework, which focuses on avoiding trips, shifting journeys to more efficient or lower emission means of transport, and improving vehicles and fuels.

The avoid-shift-improve strategy has three parts:

- **avoid** refers to avoiding motorized travel altogether through high density urban planning or substituting travel with telecommunication
- **shift** policies focus on enabling and encouraging a shift from private motorized travel to more energy efficient modes, including public transit, walking, and cycling
- **improve** seeks to build on the gains from modal shifts by introducing more energy efficient fuel and vehicle policies.

## What are the fuels and technology options for transport?

With the increasing number of vehicles on the road, countries have identified cleaner fuels and relevant technologies with the aim of improving air quality and reducing emissions. Advancing fuel quality standards is a key component for mitigating pollution from the transport sector. Addressing components such as fuel sulfur content can significantly lower the emissions of criteria air pollutants,<sup>7</sup> as well as enabling the use of more advanced tailpipe emission control technologies (e.g. diesel particulate filters), which can also contribute towards pollution reduction.

The webinar **Fuels and technologies to mitigate emissions**<sup>8</sup> covers the basics of emission standards, vehicle technologies, and the benefits and potential tradeoffs of utilizing these technologies and fuels.

## How have other countries done this?

This training series includes two case study presentations that highlight how national governments have shifted their policies to adopt higher fuel quality in order to address poor air quality and mitigate greenhouse gas emissions.

The four webinars in the series **Supporting Asian countries to implement new fuel quality and vehicle emission standards**, led by the LEDS GP Transport Working Group in partnership with the United Nations Environment Programme and Clean Air Asia, are:

- Fuels and technologies to mitigate emissions
- Fuel policies and fleet technology management: Mexico's case study
- Addressing air pollutant and climate relevant emissions in the transport sector
- Using better quality fuel to mitigate vehicle emissions: the case of Mauritius

Webinar recordings, slide shows, and all resources referenced in the webinars are available online.

## Case study

### Mexico—implementing fuel policies and fleet technology management<sup>9</sup>

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Mexico was known worldwide during the 1980s for its poor air quality. Mexico City was considered the most polluted city in the world at that time. Since then, an integrated public policy approach has been implemented to reduce air pollution concentration by more than 50%—even with four times more vehicles on the roads. National and local authorities coordinated to adopt fuel quality standards; a vehicle inspection and maintenance program; air quality monitoring; and *Hoy No*

*Circula* (No Drive Day)—a vehicle restriction program that prohibits certain vehicles from circulating within Mexico City once a week. Mexico is experiencing new challenges that include an increase in polluting, secondhand, imported vehicles, and increased traffic beyond Mexico City. To address these challenges, Mexico plans to fully implement fuel economy standards and fuel quality standards for diesel; and adopt policies to restrict importation of secondhand vehicles.

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## Case study

### Mauritius—mitigating emissions using better quality fuel<sup>10</sup>

Increasing road traffic in Mauritius was having negative impacts on health, the environment, and the local economy. The national government decided to address these impacts by adopting higher fuel quality standards and offering financial incentives (e.g. reduced taxes) that were favorable for low emitting vehicles. Under the Partnership for Clean Fuels and Vehicles,<sup>11</sup> Mauritius implemented measures to reduce the sulfur content of diesel from 5,000 parts per million (ppm) in 2001 to less than 50 ppm in 2012. Unleaded petrol was introduced in September 2002. Mauritius is working with the Global Fuel Economy Initiative<sup>12</sup> to implement the second phase of the project, with the main objective of doubling vehicle fuel efficiency and thereby halving CO<sub>2</sub> emissions. This project includes the implementation of a feebate scheme for motor vehicle-related taxes that adopts the polluter pays principle in an effort to shift consumers' choice from higher to lower emitting vehicles. Mauritius continues its efforts to reduce its share of emissions from vehicles by discussing the potential of adopting 10 ppm sulfur content diesel fuels, and working on a mechanism for a scrapping program for higher emitting vehicles.



Motors Mega Mauritius

## Moving towards cleaner fuels and vehicles in Asia

The training series included a workshop where participants from Southeast Asia discussed opportunities and strategies to overcome barriers to the successful implementation of vehicle emission standards, and set the basis for sustaining cooperation towards harmonizing standards. Participants agreed that these strategies need to be embedded in the broader A–S–I framework to increase mobility and also to shift toward low carbon, efficient public transport and nonmotorized vehicles.

This webinar series provides the tools to help make the case about why there is an urgent need to advance fuel quality and vehicle emission policies, and the steps towards implementing these policies in Asia.

## Notes

1. UNEP: [www.unep.org](http://www.unep.org); Clean Air Asia: [cleanairasia.org](http://cleanairasia.org); DENR: [www.denr.gov.ph](http://www.denr.gov.ph); LEADS GP Transport Working Group: [ledsgp.org/working-groups/transport](http://ledsgp.org/working-groups/transport)
2. Karaguliana, F., Belisd, C.A., Dorab, C.F.C. et al. (2015) 'Contributions to cities' ambient particulate matter (PM): A systematic review of local source contributions at global level.' *Atmospheric Environment* 120: 475–483.
3. Bosu, P. (2015) 'Accelerating fuel economy policies in the ASEAN Region.' Presented at Urban Mobility India, 2015. New Delhi: Clean Air Asia.
4. ADB (2016) *Addressing climate change in transport*. Manila: Asian Development Bank.
5. Kahn Ribeiro, S., Kobayashi, S., Beuthe, M. et al. (2007) 'Transport and its infrastructure,' in Metz, B., Davidson, O.R., Bosch, P.R., Dave, R. and Meyer, L.A. (eds) *Climate Change 2007: Mitigation*. Contribution of Working Group III to the Fourth Assessment Report of the Intergovernmental Panel on Climate Change. Cambridge, UK and New York, USA: Cambridge University Press.
6. LEADS GP (2016) 'Addressing air pollutants in the transport sector – webinar and related resources,' January 28. Transport Working Group, LEADS GP.
7. EPA: 'Criteria Air Pollutants.' Washington, DC: US Environmental Protection Agency.
8. LEADS GP (2016) 'Fuels and technologies to mitigate emissions: webinar and related resources,' November 10. Transport Working Group, LEADS GP.
9. LEADS GP (2016) 'Reducing air pollution concentration by 50%: A case study from Mexico—webinar and related resources,' January 12. Transport Working Group, LEADS GP.
10. LEADS GP (2016) 'Mitigating emissions using better quality fuel—webinar and related resources,' April 14. Transport Working Group, LEADS GP.
11. UNEP: 'Partnership for Clean Fuels and Vehicles.' Nairobi: United Nations Environment Programme.
12. GFEL: [www.globalfuelconomy.org](http://www.globalfuelconomy.org)

The **Low Emission Development Strategies Global Partnership (LEADS GP)** was founded in 2011 to enhance coordination, information exchange, and cooperation among countries and international programs working to advance low emission, climate resilient growth. LEADS GP currently brings together LEADS leaders and practitioners from more than 160 countries and international institutions through innovative peer to peer learning and collaboration via forums and networks. For the full list of participants and more information on partnership activities, see [www.ledsgp.org](http://www.ledsgp.org)

The **United Nations Environment Programme (UNEP)** is the leading global environmental authority that sets the global environmental agenda, promotes the coherent implementation of the environmental dimension of sustainable development within the United Nations system, and serves as an authoritative advocate for the global environment. [www.unep.org](http://www.unep.org)

**Clean Air Asia** is an international nongovernmental organization that leads the regional mission for better air quality and healthier, more livable cities in Asia. It aims to reduce air pollution and greenhouse gas emissions in 1000+ cities in Asia through policies and programs that cover air quality, transport and industrial emissions, and energy use. <http://cleanairasia.org>

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This document is from the LEADS GP, a global program for which the United States National Renewable Energy Laboratory (NREL) and the Climate and Development Knowledge Network (CDKN) serve as the Secretariat. NREL is a national laboratory of the U.S. Department of Energy, Office of Energy Efficiency and Renewable Energy, operated by the Alliance for Sustainable Energy LLC. CDKN is a program funded by the UK Department for International Development (DFID) and the Netherlands Directorate-General for International Cooperation (DGIS) for the benefit of developing countries, with further funding from the United States Department of State for the co-management of the Low Emission Development Strategies Global Partnership (LEADS GP). The views expressed and information contained in it are not necessarily those of, or endorsed by, DFID, DGIS, the US Department of State, NREL, the US Department of Energy, or the entities managing the delivery of CDKN, which can accept no responsibility or liability for such views, completeness or accuracy of the information or for any reliance placed on them. This publication has been prepared for general guidance on matters of interest only, and does not constitute professional advice. You should not act upon the information contained in this publication without obtaining specific professional advice. No representation or warranty (express or implied) is given as to the accuracy or completeness of the information contained in this publication, and, to the extent permitted by law, the entities managing the delivery of CDKN and NREL do not accept or assume any liability, responsibility or duty of care for any consequences of you or anyone else acting, or refraining to act, in reliance on the information contained in this publication or for any decision based on it.