The Global Fuel Economy Initiative: Delivering Sustainable Development Goal 7

GFEI
GLOBAL FUEL ECONOMY INITIATIVE

HIGH-LEVEL POLITICAL FORUM
ON SUSTAINABLE DEVELOPMENT

7 AFFORDABLE AND CLEAN ENERGY

FIA FOUNDATION

UN environment

UCDAVIS
INSTITUTE OF TRANSPORTATION STUDIES

iea International Energy Agency

icct
THE INTERNATIONAL COUNCIL ON CLEAN TRANSPORTATION

International Transport Forum

FOREWORD

With the Sustainable Development Goals, we've made a promise to leave no-one behind. And if we are to succeed, then we also need to get transport right.

The environmental footprint of the current forms of transport of choice around the world is huge. Our addiction to fossil fuels not only spew out dangerous greenhouse gases and drive potentially catastrophic climate change, but the pollution also sends millions of people to an early grave every year.

We have the solutions. Greater vehicle efficiency – be that in light- or heavy-duty vehicles, or indeed through new technologies such as electric vehicles -- is central to addressing that. Reduced fuel use brings huge environmental, financial and health gains.

UN Environment is proud to be a partner in the Global Fuel Economy Initiative, which is making a vital contribution to improving energy efficiency of vehicles, by helping countries understand the emissions from their vehicle fleets and put in place policies to cut them.

In less than 10 years, the Global Fuel Economy Initiative is now supporting over 70 countries, and planning to work in many more. This report charts the progress of the initiative, working with countries to support them as they address their mobility challenges, and the need for greater energy efficiency – as a vital contribution to achieving the Sustainable Development Goals.

The need for a transition to zero emission vehicles and to reduce emissions from freight are two massive challenges, but also opportunities. The Global Fuel Economy Initiative is at the front and centre of meeting these challenges.

Erik Solheim
UN Environment Executive Director
and Under-Secretary-General
United Nations

1 Introduction

For nearly a decade, the Global Fuel Economy Initiative (GFEI) has been at the cutting edge of a remarkable energy efficiency revolution – supporting countries to put in place policies to accelerate improvements in the efficiency of vehicles. This support initially focused on passenger vehicles, but now covers freight as well – encompassing the vast majority of vehicles on the road. GFEI partners are also at the forefront of supporting the transition to electric mobility.

Governments around the world made a vital and unparalleled commitment when they agreed the Sustainable Development Goals (SDGs) in 2015. The SDGs are a unique set of targets for people and planet, combining economic, social and environmental dimensions – recognising both that different geographic locations and sectors are interlinked, and that change requires co-operation and co-ordination. The 2018 High Level Political Forum (HLPF) with the theme of "Transformation towards sustainable and resilient societies" explores how governments are progressing towards this objective, including a particular focus on Sustainable Development Goal 7 on sustainable energy.

GFEI supports policies that enhance the energy efficiency of vehicles. Fuel economy reduces carbon emissions and saves money as well as, for countries that import oil, bringing significant benefits in terms of energy security and for their balance of payments and even national budgets.

In 2009, GFEI set a bold goal – to double average new passenger vehicle fuel economy globally by 2030, and in all vehicles by 2050 – '50by50'. This would mean that on average the fuel used by any new vehicle would be half of that required previously. This improvement in efficiency is vital as vehicle numbers continue to grow – particularly in developing countries. GFEI's goal for new vehicles corresponds with Sustainable Development Goal target 7.3 to double energy efficiency by 2030. Achieving the GFEI target would save over 1 Gt of CO_2 a year by 2025 and over 2 Gt/year by 2050, and result in savings in annual oil import bills alone worth over $300 billion in 2025 and $600 billion in 2050.

In 2016, recognising that heavy duty vehicles are now set to see the biggest increase in oil use as global trade increases, GFEI announced a further target to improve the efficiency of HDVs by 35% by 2035, which would save millions of barrels of oil each day.

GFEI TARGETS:

50by50
Improve Light Duty Vehicle fuel economy by 50% by 2030 for new vehicles, and 2050 for all vehicles (2005 baseline)

35by35
Improve Heavy Duty Vehicle fuel consumption by 35% by 2035 for new vehicles (2015 baseline)

> *"The cars of the future have to be cleaner and more efficient. GFEI has taken a strong leadership role in building policy approaches which tell to the vehicle industry that governments are serious about fuel economy."*
>
> **The partnership for sustainable low carbon transport (SLoCaT)**

Not only do GFEI's targets align with and reinforce the Sustainable Development Goal target 7.3, they also contribute a series of other benefits, including boosting economic development (Goal 1), public health (Goal 3), urban air quality (Goal 11), and climate change (Goal 13).

2017 was a key year for GFEI, as it reached out to 65 developing countries and countries in transition. GFEI also supports policy development in developed countries and big markets like Australia, Canada, China, Saudi Arabia, and the U.S. Moreover, many national projects have resulted in the adoption of policies, for example:

- **The Philippines** has adopted a price-based progressive vehicle excise tax, lower taxes for electric and hybrid vehicles, and is developing a labelling scheme;
- **Mauritius** has adopted a stricter CO_2-based vehicle excise tax;
- In **Kenya**, an age-based vehicle excise tax scheme that puts less tax on imported second-hand vehicles 3 years old or younger was adopted;
- **Montenegro** has adopted a labelling scheme;
- **Vietnam's** previously voluntary vehicle labelling scheme has now been announced as mandatory, and will be expanded to two- and three- wheelers;
- In **Sri Lanka**, they have revised vehicle excise tax to further support more efficient vehicles and electric vehicles;
- **Thailand** has adopted CO_2 vehicle tax and labelling;
- **Peru** has increased tax for gasoline and diesel vehicles and reduced tax for gas, electric, and hybrid vehicles; and
- **Ukraine** reduced taxes on electric vehicles.

GFEI PARTNERS

GFEI brings together six expert partners who cooperate in three key ways:

1. to build a strong evidence base on the benefits of vehicle efficiency and global progress towards GFEI targets
2. to offer countries capacity-building support to promote greater fuel economy
3. to advocate for a greater focus on the key issue of vehicle efficiency

The six GFEI partners:

- the International Energy Agency (IEA);
- the United Nations Environment Programme (UN Environment);
- the International Transport Forum of the OECD (ITF);
- the International Council on Clean Transportation (ICCT);
- the Institute for Transportation Studies at University of California, Davis (UC Davis); and
- the FIA Foundation, which hosts the GFEI secretariat.

These technical specialists undertake detailed research on issues relating to vehicle efficiency, and provide practical support to countries, as well as making the wider case for prioritising improved vehicle fuel economy because of the many benefits it brings. In addition, GFEI works with a series of national and regional partners, such as Clean Air Asia, Sustainable Transport Africa and Centro Mario Molina, Chile.

COUNTRY CAPACITY-BUILDING

GFEI's capacity-building work is at the heart of our mission to work for change. GFEI supports countries in three key ways:

1. building a shared understanding of the fuel economy of vehicles in their country – the baseline – against which any subsequent progress can be measured.
2. providing tools and a toolkit to inform policymakers of the potential impacts of different policy options. This toolkit is built on existing good practice from other countries facing the same sort of challenges: https://www.globalfueleconomy.org/in-country/gfei-toolkit
3. supporting countries as they engage with their own stakeholders and relevant local interests and as they chart their way towards developing policies. GFEI also supports global policy processes - such as the UNFCCC, G20 and the framework of the Sustainable Development Goals to showcase the progress which individual countries have made.

- **Develop fuel economy baseline to understand vehicle fleet**
- **Undertake cost-benefit analysis/ impact assessment and modelling**
- **Develop policy options**
- **Government decision / implementation**

RESEARCH AND EVIDENCE

GFEI provides the most comprehensive and only global analysis of fuel economy trends. Led by the International Energy Agency (IEA), GFEI's regular benchmarking studies draw on detailed information about vehicle registrations to track annual progress in average fuel economy around the world.

In addition, the GFEI working paper series provides in-depth analysis on key issues that affect vehicle efficiency, including recent analysis looking at how the increasing size of vehicles is counter-acting many of the fuel efficiency improvements.

GLOBAL ADVOCACY

The sustainable mobility challenge is dependent not only on changes to the patterns of mobility but also in the way energy is generated. GFEI is a unique initiative in that it works across both of these sectors. An example of this engagement is GFEI's status as an 'accelerator' platform within the United Nation's Sustainable Energy for All (SE4ALL) initiative. GFEI is working to speed up the transition to cleaner and more efficient vehicles and fuels. Increasingly this will mean electric vehicles, and so it is vital that the energy generated to power these is low carbon and does not contribute to air pollution.

Global Process	GFEI's key role
G20	Implementing organisation of the Transport Task Group (TTG)
Climate Change (UNFCCC)	Identified as a transport 'Quick win' on Transport Sustainable Development and Climate Change as part of the Paris Process on Mobility and Climate
Sustainable Development Goals	Part of the Expert Group and High Level Panel for SDG7
SE4ALL	GFEI is at the heart of the Transport and Motor Vehicle 'Accelerator' initiative

2 Transport and SDG7: Where are we now?

Vehicle fuel economy is vital to reducing energy consumption from transport. It helps valuable resources go further, reducing waste and boosting productivity. At the global level, the transport sector was responsible on average for 28 per cent of total final energy consumption annually between 2010 and 2015, and consumed around 60 per cent of global oil products. In many developed countries, transport is the single largest energy user.

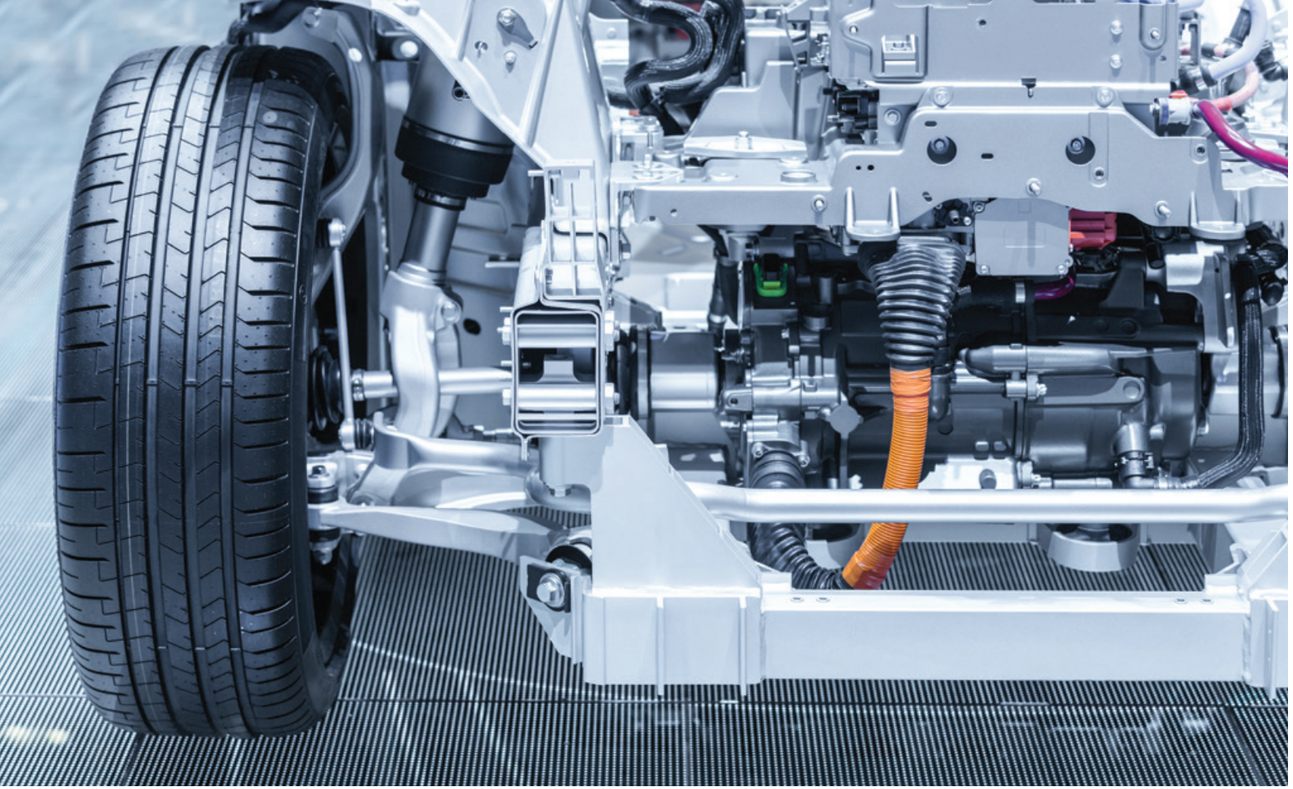
Transport energy demand has been rising faster than any other sector. Energy consumption from transport is set to continue to grow, predominantly in non-OECD countries, with the greatest growth in Asia.

Road vehicles are responsible for the largest share of transport energy use. Improving the efficiency and fuel economy of vehicles helps to manage energy demand, saving money and mitigating climate and air quality impacts from emissions. As road transport increasingly shifts towards electric mobility, it is vital that the electricity used is low carbon, and that local energy systems are able to manage and to respond to changes in demand.

In the ten years between 2005 and 2015, average vehicle fuel economy globally has improved by around 14% - the average amount of fuel needed to drive 100km has fallen from 8.8 litres of gasoline equivalent (lge) to 7.6 lge. However, faster progress is needed in order to reach GFEI's goal of doubling average vehicle fuel economy by 2030 – in line with the SDG target. The good news is that we know that the technology exists to drive forward vehicle efficiency, but there is a need for clear and consistent policy to cut emissions, save money and clean up the air.

> *"Steering vehicles towards a low-carbon world supports the SE4All agenda on doubling the improvement rate of energy efficiency. As the global car fleet is predicted to triple by 2050 - with most of the growth in developing countries - maximising fuel efficiency is not an option, but an obligation. The GFEI therefore importantly contributes towards the energy efficiency target of the Sustainable Energy for All Initiative."*

Rachel Kyte
Chief Executive Officer, Sustainable Energy for All (SE4All) Initiative



3 GFEI - improving vehicle energy efficiency country by country

Starting from just four pilot countries in 2009, GFEI has now extended its support to over 70 countries, across different continents and regions. GFEI is unparalleled in its reach, and is able to connect countries facing similar challenges in different locations to share experiences and learn from each other and provide support through the process of policy change. By including electric vehicles and heavy-duty vehicles in its remit for greater vehicle efficiency, GFEI is the only truly comprehensive road vehicle efficiency initiative. As such, it is unique in the support which it is able to offer countries.

GFEI works with countries to analyse the fuel economy trends in newly registered vehicles in order that they can develop a country-specific policy response. By setting a baseline of fuel economy before any intervention, it also allows countries to monitor the impacts of any policies they introduce. In addition, GFEI's experts have developed analytical tools to model the local impact of potential policies, and decide the best approach.

GFEI takes a comprehensive approach, targeting both the major vehicle markets and also smaller ones. The International Council on Clean Transportation (ICCT) leads work focused on G20 countries, while UN Environment provides support in developing countries and emerging markets. In all cases further technical support and analysis is provided by IEA, ITF and UC Davis. By ensuring that all countries have frameworks for clean and efficient vehicles, GFEI is supporting countries as they invest in the future, learning lessons from the experiences of other developed and developing countries, often in the face of massive vehicle fleet growth.

There are a wide range of policy options from which countries can choose. Fuel economy improvements can be achieved through improved aerodynamics, engines and powertrains; changes to alternate fuel sources such as promoting electric and zero emission vehicles through new standards; and fiscal incentives and improved consumer information. In addition, it is possible to introduce measures to improve the efficiency of trucks, including fuel economy standards and voluntary "green freight" initiatives to improve vehicle efficiency and consolidate journeys through advanced logistics and hubs where possible.

Other action that can lead to improvements includes phasing out inefficient transport-related fossil-fuel subsidies, including direct and indirect policies that encourage wasteful consumption. Another priority is research in efficient batteries and energy storage systems, including hydrogen and fuel-cell technologies, to reduce prices and increase the range of electric-powered vehicles and develop the necessary charging/refuelling infrastructure.

GFEI provides expert input to support countries to develop policy options. By hosting a country workshop GFEI helps convene the key stakeholders in each country in order to identify the key issues affecting the country and the optimal approach to improving vehicle efficiency given the particular characteristics currently observed.

THE ROLE OF ELECTRIC VEHICLES

Fully electric (plug-in) vehicles are about three times as efficient as conventional cars and almost twice as efficient as hybrids. Across the world, countries are increasingly adopting policies to incentivise electric vehicles. The two main electric car markets are China and the United States. Alongside the United States, six other countries reached market shares for electric cars of more than 1% in 2016: Norway, the Netherlands, Sweden, France, the United Kingdom and China. In 2017, several more reached this level, including Belgium, Finland, Switzerland, Iceland and Japan.

GFEI partners are proactively working to integrate policies stimulating the adoption of electric vehicles in their technical assistance and capacity building support. However, electric vehicles should not yet be seen as replacing efficiency improvements of the internal combustion engine, as many countries do not yet have the infrastructure needed for a complete shift to electric mobility, but rather electric vehicles should be seen as an increasingly important instrument to achieve greater vehicle efficiency overall.

HEAVY DUTY VEHICLES (HDVS)

Without action, worldwide fuel consumption from HDVs is on track to overtake passenger vehicles in the next decade or two.

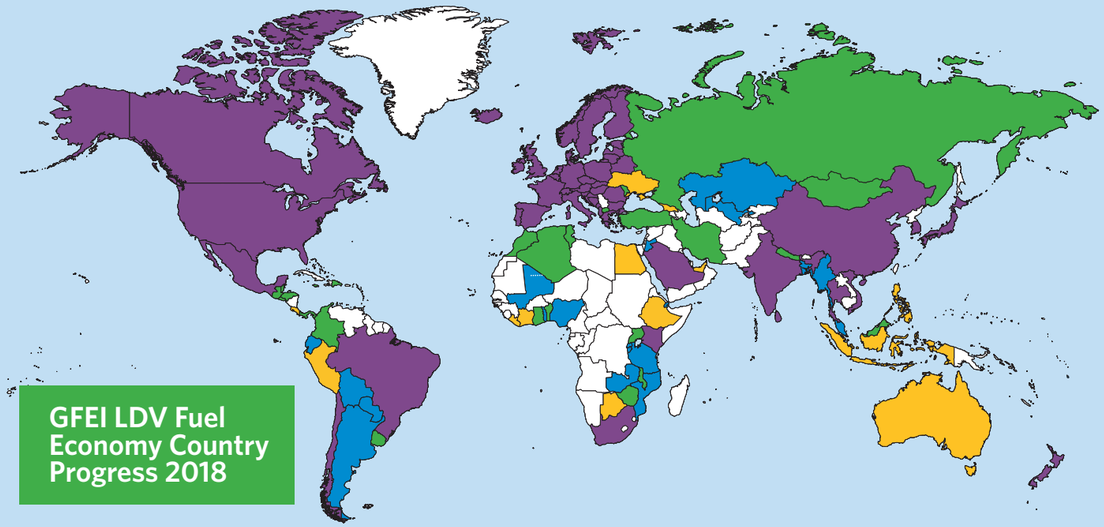
There is more diversity between regions in HDV vehicle types and drive cycles compared to passenger vehicles, which means that policies need to be tailored to each market. This is significant as modern HDVs engine, powertrain and emissions control technologies may in many instances be unsuitable for many developing countries that lack the requisite fuel quality and maintenance infrastructure to ensure the durability and continued effectiveness of emissions control technologies. GFEI partners supporting countries therefore take a comprehensive approach, working on improving fuel quality alongside clean and efficient vehicles.

GFEI partners will increasingly highlight the potential of HDV fuel economy programmes through global networks and assist countries in establishing technically sound HDV efficiency policies and standards.

4 GFEI Global Action for SDG7

100 FOR 50BY50
SAFE CLIMATE AND CLEAN AIR AT COP21

In 2015, as world leaders committed to action for sustainable development and tackling climate change, GFEI set out its own bold vision to substantially expand the number of countries committed to improving vehicle fuel economy. This vision, known as '100 for 50 by 50' aims to increase the number of countries working on doubling vehicle fuel efficiency by 2050 (50by50) to over one hundred. With funding from the European Commission, the Global Environment Facility (GEF) and the FIA Foundation, GFEI is now working with around seventy countries, and continues to work with others through regional activities and networks such as the G20.



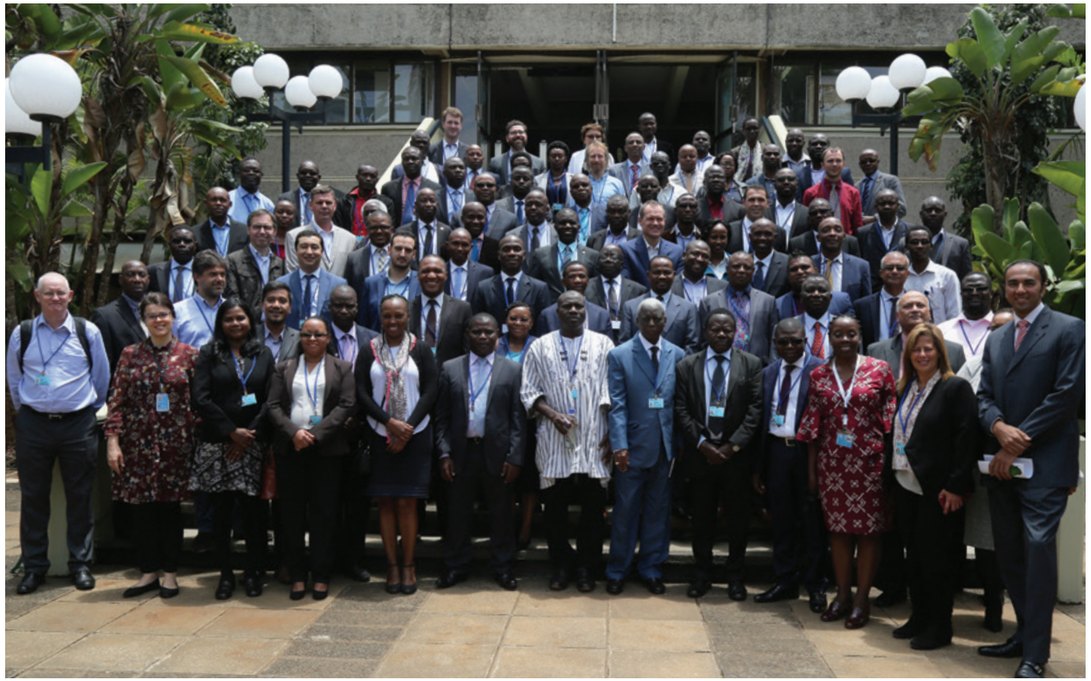
GFEI LDV Fuel Economy Country Progress 2018

GFEI works with countries to develop a baseline analysis of vehicle trends and support policy proposals.

		New country	Baseline completed	Policy proposals developed	Policy Implemented
AFRICA	Algeria		■		
	Benin		■		
	Botswana	■	■	■	
	Egypt		■	■	
	Ethiopia		■	■	
	Ghana	■	■	■	
	Ivory Coast		■	■	
	Kenya		■	■	■
	Liberia	■	■	■	
	Malawi	■	■		
	Mali	■			
	Mauritius		■	■	■
	Morocco		■		
	Mozambique	■			
	Nigeria	■			
	Rwanda	■			
	Senegal	■			
	South Africa	■	■	■	■
	Tanzania	■			
	Togo	■			
	Tunisia		■		
	Uganda		■		
	Zambia	■			
	Zimbabwe	■	■		
ASIA PACIFIC	Australia			■	
	Bangladesh	■			
	China			■	■
	Fiji	■			
	India			■	■
	Indonesia		■	■	
	Malaysia	■			
	Myanmar	■			
	Nepal	■	■		
	Philippines		■	■	
	Sri Lanka		■	■	■
	Thailand		■	■	■
	Vietnam		■	■	■
EASTERN EUROPE AND THE CAUCUSES	Georgia		■	■	
	Macedonia		■		
	Moldova	■	■		
	Montenegro		■	■	■
	Russia		■		
	Ukraine		■	■	
MIDDLE EAST AND WEST ASIA	Bahrain		■		
	Iran	■	■		
	Jordan	■			
	Kazakhstan	■	■		
	Lebanon		■		
	Mongolia	■	■		
	Saudi Arabia				■
	Turkey		■		
	UAE		■	■	■
NORTH AMERICA	United States				■
	Canada				■
	Mexico				■
LATIN AMERICA AND CARIBBEAN	Argentina	■			
	Belize	■	■		
	Brazil	■			■
	Chile		■	■	■
	Colombia	■	■		
	Costa Rica		■	■	
	Dominican Republic	■	■		
	El Salvador	■	■		
	Guatemala	■	■		
	Honduras	■	■		
	Jamaica		■		
	Panama	■	■		
	Paraguay	■			
	Peru		■	■	
	Uruguay		■		

KEY

G20 Transport group Participants: Australia, Brazil, Canada, China, the European Union, Germany, India, Italy, Japan, Mexico, Russia, United Kingdom and the United States.



AFRICA

Countries across Africa have benefitted from GFEI's in-country support and regional training. In March 2018 countries from across Africa were brought together for the first Africa Clean Mobility Week, hosted by UN Environment in Nairobi. Representatives from across Africa were able to share experiences and hear from policy experts about how to improve vehicle fuel economy.

GFEI's work in Africa is led by UN Environment. UN Environment works together with regional partners, such as Sustainable Transport Africa. The International Council on Clean Transportation (ICCT), which leads on G20 countries, is providing capacity building to South Africa.

In total, GFEI is working with nearly 30 countries across Africa. There are wide differences between countries. For example, Kenya (which has an import age limit of 8 year old vehicles) has an average fuel economy of 7.3 litres/100km for new vehicles, whereas Uganda (which does not have a limit, and where the average age of newly registered vehicles is 16 years) has a considerably higher average fuel economy at 12.0 litres/100km. In some areas, such as West Africa, GFEI is also taking a regional approach to fuel economy by working with the ECOWAS community. One of the leading countries, Mauritius, which has for several years had a 'feebate' incentivising more fuel efficient vehicles, has recently adopted a new stricter CO_2-based vehicle excise tax.

KENYA
The Global Fuel Economy Initiative has supported Kenya to develop policies to improve fuel economy, based on analysis of the fuel economy of the vehicle fleet. It has supported the government to explore a range of policy options, including labelling, and variable taxation schemes. This includes a variable taxation scheme that charges more for importing used vehicles more than five years old (the limit is eight years old). The country is also continuing to develop proposals for a fuel economy label.

FOCUS ON JAMAICA

DEVELOPING EFFICIENT VEHICLE POLICY FOR CLEAN AIR AND CLIMATE

Jamaica is a successful example of how GFEI's expertise combined with detailed policy analysis in the country can help drive forward energy efficiency and sustainable transport, and work to secure multiple environmental and economic benefits. GFEI was launched in Jamaica in August 2015, at an event which was introduced by the Jamaican Environment Minister who set out why improving vehicle efficiency is a priority for the government.

Jamaica has to import all the fuel it uses – both oil and ethanol (it has a 10% mandatory ethanol blend in gasoline). In total the transportation sector consumes 30% of all oil imports. Fuel economy has multiple benefits, as improved vehicle efficiency reduces consumption of oil, saving producing valuable savings, and also reduces tailpipe emissions, including harmful climate pollutants such as CO_2.

Jamaica's National Determined Contribution (NDC) for the Paris Agreement states that "Jamaica seeks support for the expansion of energy efficiency initiatives in the electricity and transportation sectors, in line with sector action plans and policies currently under development"

Jamaica requested support to develop a clean and efficient vehicles policy and committed USD 400,000 of their GEF 5 STAR allocation to the GFEI Project.

> *The greenhouse gas emissions from the transport sector in 2012 was second only to that of public electricity and heat production. It is clear that any initiative relating to fuel economy and the transportation sector will be an important part of the suite of actions that Jamaica is taking to lower its overall emissions levels.*

Ms. Gillian Guthrie
Senior Director, Environment and Risk Management Division

> *In Jamaica the GFEI has allowed us for the first time to develop a database of the light duty vehicle fleet. Our experience has shown that GFEI goes beyond the usual consultancies and technical expertise. Indeed the initiative has been keen to ensure that people right here in Jamaica are trained to use the tools that will complement the ongoing work to improve the fuel economy of our light duty fleet. We are happy to be part of this global initiative as we look towards transitioning to a local carbon economy, and are proud to be the first in the Caribbean region to participate in this initiative.*

The Honourable Minister Daryl Vaz, MP
Minister without portfolio, Ministry of Economic Growth and Job Creation

The formal launch event followed a previous meeting held in the capital Kingston in February 2014. Earl Jarrett of the Jamaican Automobile Association, introduced the event, highlighting the benefits of fuel economy for the Caribbean, saying "It is critical that countries, such as Jamaica; and others in the Caribbean Region, tackle the risks posed by the continued use of fossil fuels and uninhibited vehicle emissions that can have a negative impact on our people and the environment."

In June 2016, GFEI held a further fuel economy workshop in Kingston to review the completed vehicle fuel economy database. Thirty stakeholders from key institutions in the energy, environment and transport sectors attended the workshop. This baseline data shows a small improvement in average fuel economy over a nine year period. The average fuel economy of the vehicles newly registered vehicles has improved from a high of 8.65 lge/100km in 2008, but since 2012 it has fluctuated around 7.3 lge/100km. In addition, vehicle numbers are growing in Jamaica. Although numbers of imported vehicles (as Jamaica does not manufacture any) fell between 2008 and 2010, they have increased every year since then.

Most recently GFEI held a successful workshop in Jamaica on 4th March 2018 to review progress in policy development and plan next steps. At the event, the national working group meeting discussed options for fiscal and non-fiscal policies, and reviewed case studies of GFEI projects in Asia Pacific. The next activities will include the development of a fuel economy labelling proposal. The project is now holding national stakeholder consultations that aim to develop proposals for policy and legislation to support actions at the national level for the mitigation of greenhouse gas emissions in the road transport sector. The government is also very interested in the links between fuel efficiency and electric mobility.

Jamaica has developed a number of policies, including revised Motor Vehicle Emissions Standards, which are to be promulgated under the Road Traffic Act; the Petroleum (Quality Control) Act (1990), which provides for fuel specification, including sulphur content of fuels; and the Air Quality Regulations of the Natural Resources Conservation Authority (NRCA).

> *Jamaica has enacted regulations that seek to reduce air pollution and emissions. Cleaner, more efficient vehicles will result in a reduction in fuel use per kilometre and a reduction in pollutants.*

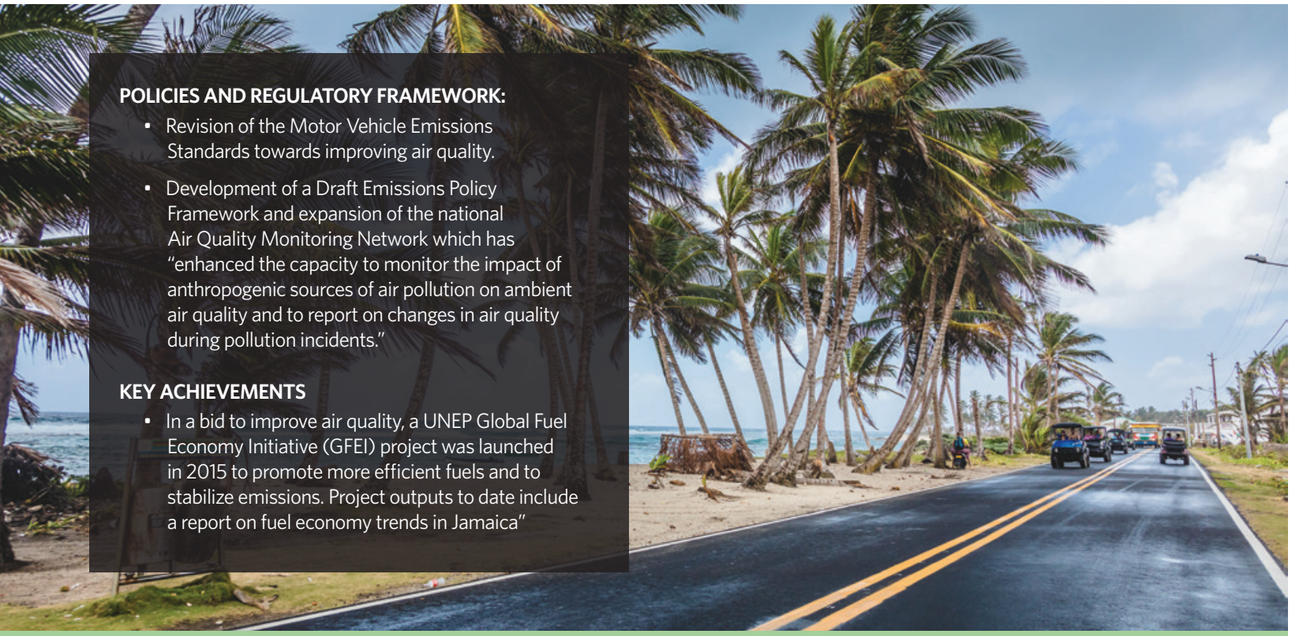
Fayona Lewis
Pollution Prevention Co-ordinator National Environment and Planning Agency

FOCUS ON JAMAICA

JAMAICA'S VOLUNTARY NATIONAL REVIEW
Jamaica's National Review highlights the importance of fuel economy to Jamaica:

"Energy security and efficiency are critical to Jamaica's sustainable transformation to developed country status.... Policy, legislative and operational reforms are underway to address the main challenges in the sector... a national project was launched in 2015 under the Global Fuel Economy Initiative (GFEI) with the aim of improving fuel economy and efficiency in the transport sector, reducing vehicle emissions and improving air quality through the use of cleaner fuels. Among the achievements to date is the establishment of a national auto fuel economy database (for light duty vehicles) and a diagnostic study report on air quality management in Jamaica. The private sector has also been actively engaged in developing policy proposals towards a cleaner, more efficient transport sector.

The transport sector is a significant consumer of fossil fuels (almost one-third of petroleum imports), contributing to greenhouse gas emissions and air pollution (particulate matter, sulphur dioxide, nitrous oxides and others).



POLICIES AND REGULATORY FRAMEWORK:

- Revision of the Motor Vehicle Emissions Standards towards improving air quality.
- Development of a Draft Emissions Policy Framework and expansion of the national Air Quality Monitoring Network which has "enhanced the capacity to monitor the impact of anthropogenic sources of air pollution on ambient air quality and to report on changes in air quality during pollution incidents."

KEY ACHIEVEMENTS

- In a bid to improve air quality, a UNEP Global Fuel Economy Initiative (GFEI) project was launched in 2015 to promote more efficient fuels and to stabilize emissions. Project outputs to date include a report on fuel economy trends in Jamaica"

TOGO
Togo is one of around a dozen African countries that have recently launched a GFEI national project. The country held a successful launch and is working on the analysis for the fuel economy baseline to understand the current fuel economy levels in the country before developing policy options.

Togo has reported its performance through a voluntary national review every year since the SDGs were agreed in 2015, with its 2018 report the third year that the country has made progress.

IVORY COAST
GFEI partner UN Environment is co-ordinating work among ECOWAS countries in West Africa. In July 2017, nine ECOWAS countries, the ECOWAS Commission and UN Environment participated in a workshop. This drew on the findings of a national fuel economy meeting in the Ivory Coast which had identified policy options for the country to promote imports of fuel efficient vehicles. Among these policy recommendations was for a vehicle labelling and a fee/rebate taxation system to encourage imports of more fuel efficient vehicles.

MALI
The national GFEI project was launched in a workshop, held in Bamoko in May 2017. The lead agency in Mali for GFEI work is Direction Nationale de l'Assainissement et du Contrôle des Pollutions et des Nuisances (DNACPN). The country has started data collection to develop a vehicle inventory baseline of the average fuel economy of new cars. Subsequently a study will be carried out to assess the options for clean and efficient vehicle policies and potential impacts in Mali, which will also include fiscal policies. By the end of the year, the task force that is spearheading the activity is expected to have a report on fuel economy proposed policy options and draft policies which will be submitted to government.

SOUTH AFRICA
GFEI has also been supporting South Africa to explore vehicle fuel economy policies. South Africa's new passenger vehicle fleet is the largest on the African continent and the 18th largest globally. South African manufacturers sold more than 412,000 new vehicles in 2015, and exported more than 333,000 units in that year.

Analysis by the International Council for Clean Transportation (ICCT) for GFEI indicated that South Africa's passenger car fleet emits 21% more CO_2 than the average European passenger car, indicating lower average efficiency of vehicles in South Africa. However, the study also identified large potential improvements in fuel economy through adopting new standards.

OTHER PROGRESS IN AFRICA
GFEI is supporting work across Africa. In North Africa, GFEI has recently worked with Egypt through partner CEDARE (Centre for Environment and Development for the Arab Region and Europe) and developed policy options for improved fuel economy.

In West Africa, in addition to Ivory Coast, Togo and Liberia, GFEI is working with Ghana, Mali and Nigeria. Ghana has recently completed its vehicle fuel economy baseline analysis, while Mali and Nigeria have held launch events and are completing their vehicle inventory.

In East Africa, GFEI is currently working with Rwanda, Tanzania and Uganda. Work in Rwanda and Tanzania is at an early stage, while Uganda has completed a vehicle inventory and Makere University developed policy options, including a possible 'feebate' tax incentive scheme for more efficient vehicles.

In Southern Africa, GFEI is working with Botswana, Mozambique, Malawi, Zambia, and Zimbabwe, as well as South Africa. Botswana, Malawi, South Africa and Zimbabwe have completed baseline analysis and are developing (or have developed) policy recommendations, while Mozambique and Zambia are still continuing to develop their vehicle inventory and analysis.

LATIN AMERICA AND CARIBBEAN

GFEI is supporting a range of countries to develop fuel economy policies in South America and the Caribbean. One of the first countries that GFEI supported was Chile, which has introduced a series of policies to promote improved fuel economy, including labelling and tax incentives for more efficient vehicles. Other countries, such as Argentina are now following suit, by proposing a new vehicle labelling scheme.

GFEI's work in the South America and Caribbean is led by UN Environment. UN Environment works together with regional partners, such as Centro Mario Molina, Chile and CEGESTI. The International Council on Clean Transportation (ICCT), which leads on G20 countries, has provided capacity building support to Brazil. The International Energy Agency (IEA) provide global analysis and vehicle efficiency training.

COLOMBIA
The GFEI project for Colombia started in January 2017 with the aim to help create an enabling environment that will lead to the development and implementation of national fuel economy policies. The Cleaner and More Efficient Fuels and Vehicles project, led by UN Environment, CEGESTI, and the Centro Mario Molina Chile, supports the work that Colombia has been carrying out in the transportation sector, and will produce a fuel economy baseline study for their light duty vehicle fleet.

The Ministry of Environment and Sustainable Development was identified as focal point for the project. The development of the fuel economy baseline was undertaken by the University of Technology of Pereira. A further workshop to present the baseline report with analysis and recommendations took place in March 2018. Additionally, the next activities for Phase 2 of policy development were discussed, which will be taken forward in the coming months.

> *"Centro Mario Molina Chile supports GFEI because it provides a clear answer to the sustainable transport challenge in Latin America. The vehicle fleet in the region is growing rapidly but our regulations and policies are not yet ready to prevent increasing GHG emissions and energy risk.*
>
> *The GFEI approach in Chile has been to conduct a baseline study of vehicle fuel economy in the market and support a mandatory labelling scheme and tax disincentives for new vehicles with poor fuel economy and high emissions. This same successful experience is starting to be adopted for another countries in the region. If we build on these efforts we can reach the 50by50 target in Latin America."*

Gianni López
Director, Centro Mario Molina Chile

PERU
GFEI has been supporting the government of Peru since 2016. The launch event involved around 40 national participants from various public and private institutions related to transportation, energy efficiency and fuels, and subsequently a national working group was convened to discuss possible regulations and other instruments for promoting cleaner and more efficient vehicles.

In January 2018, GFEI held a follow up workshop which included analysis of the vehicle fleet. Representatives of four Peruvian ministries—Environment, Energy, Transport, and Economy and Finance—participated. The baseline analysis shows that more than 99% of vehicles imported since 2013 were new. This means that the government has a good opportunity to introduce policy measures to ensure that these vehicles have advanced technologies to improve fuel efficiency.

At the workshop Ms. Zifei Yang from GFEI partner the International Council on Clean Transportation (ICCT) provided an overview of financial incentives and feebates, a system of fees and rebates, as tools to improve vehicle fuel efficiency for Peru. Ms. Miryam Yepes Salazar from the Ministry of Economy and Finance provided an overview of the existing vehicle and fuel taxation system in Peru and discussed the progress of on-going reforms, which incentivize use of natural gas, hybrid, and electric vehicles.

ARGENTINA (NEW LABELLING)
GFEI started working with Argentina in 2016. A fuel economy baseline is being led by the Ministry of Environment and Sustainable Development and Centro Mario Molina Chile.

A first result of the project, Argentina adopted a resolution in 2017 on Energy Efficiency for the labelling of light duty vehicles that requires fuel consumption to be declared for each new vehicle model starting from 2018, an Energy Efficiency vehicle label will then be developed and applied from 2019 (Resolution 797-E / 2017).

DOMINICAN REPUBLIC
GFEI was launched in the Dominican Republic in December 2016 and the national fuel economy baseline analysis commenced in January 2017, coordinated by the Ministry of Energy and Mines. The fuel economy baseline report was presented at a national workshop in December 2017.

There is a high level of interest and commitment from the country, although the country also has major challenges with their fuel quality as they have two refineries producing fuel with high sulphur levels (7,000ppm). In collaboration with the Climate and Clean Air Coalition, GFEI partner UN Environment has started a further project to help the country address the fuel quality and vehicle emissions standards issues.

OTHER HIGHLIGHTS
GFEI is also providing ongoing support to Belize, Brazil, Guatemala, Honduras, Panama, Paraguay and Uruguay. Of these countries, all have undertaken a baseline and held national workshops to develop plans with the exception on Honduras and Panama, which are still finalising these, and Paraguay and Uruguay which are preparing to hold their launch event. The largest economy, Brazil already has some fiscal incentives and a fuel economy label, but is developing a new project with GFEI to review further opportunities to improve vehicle fuel economy. GFEI has already provided support to Costa Rica.

EASTERN EUROPE, MIDDLE EAST AND WEST ASIA

GFEI works across Eastern Europe and the Caucuses, as well as the Middle East and West Asia. In Eastern Europe, many countries are particularly looking to align their policy frameworks with the European Union. Across the Middle East a number of countries have introduced fuel economy measures, including Saudi Arabia, which has introduced fuel economy standards, and the UAE, Bahrain, Kuwait, Oman and Qatar which all have introduced vehicle fuel economy labelling schemes.

GFEI's work in Eastern Europe is led by UN Environment. UN Environment works together with regional partners, such as REC (the Regional Environment Centre for Central and Eastern Europe).

GFEI's work in the Middle East and West Asia is led by UN Environment. UN Environment works together with regional partners, such as CEDARE (Centre for Environment and Development for the Arab Region and Europe).The International Council on Clean Transportation (ICCT), which leads on G20 countries, has provided capacity building support to Saudi Arabia.

MONTENEGRO (NEW LABELLING)

Montenegro has introduced a new labelling programme for passenger vehicles. It has also developed a new vehicle database and explored policy options including a one-time CO_2 tax for passenger vehicles. GFEI held a conference to conclude the country support it has provided to Montenegro in October 2017 in Podgorica. The conference was organised and held by the Montenegro country office of the Regional Center for Central and Eastern Europe (REC).

The conference commenced with an opening speech by Ms. Srna Sudar, Director of REC Montenegro, who emphasised how the project had been successful in creating an enabling environment that will lead to a new national fuel economy policy in Montenegro. Mr. Mugosa Director of Directorate for Climate Change from the Ministry of Sustainable Development and Tourism gave the opening and closing remarks. He stressed the importance of combating climate change highlighting the current role of the Paris Agreement that Montenegro has recently officially ratified, pledging to reduce greenhouse gas emissions as part of the fight against climate change.

UKRAINE (NEW EV POLICY)

Ukraine chose to launch a new incentive policy for electric vehicles at the Global Fuel Economy Initiative meeting in Kiev in October 2017. The Ministry of Infrastructure announced plans for the national EV industry to be backed by a 40% decrease in VAT for electric vehicles (EVs) in the next 5 years, with EVs allowed to use bus lanes and receiving free parking for 15 years. In addition, there will be 0% corporate tax on lithium extraction and battery production - Ukraine has one of the largest lithium deposits in Europe. The regulation is in effect on a temporary pilot basis for 2018. A more comprehensive regulation is being developed to create a sustainable environment for further development of electric mobility in Ukraine.

OTHER COUNTRIES

GFEI is also working in Lebanon, Jordan and Iran as well as Moldova and Kazakhstan. Work in Jordan and Lebanon is just beginning, whereas in Kazakhstan, Moldova and Iran the fuel economy baseline analysis is nearly complete.

ASIA

GFEI has been working across Asia to improve vehicle fuel economy. GFEI partner the International Council on Clean Transportation (ICCT) supports the larger G20 countries, including India and China, which have both introduced fuel economy policies. Across the other countries, there has been a range of progress, with increasing numbers of countries, such as Thailand and Vietnam introducing fuel economy policies such as labelling. GFEI's work in developing countries in Asia is led by UN Environment. UN Environment works together with regional partners, such as Clean Air Asia and other local country partners.
GFEI also provides regional support across Asia through ASEAN and other groups, helping to develop a fuel economy roadmap for countries to work towards, and leading fuel economy dialogue at the Asia Pacific Clean Air Partnership.

VIETNAM

UN Environment together with regional implementation partner, Clean Air Asia, has supported the Vietnam Register under the Ministry of Transport to develop fuel economy standards for Vietnam. National Fuel Consumption Limits for Motorcycles, Mopeds, and Light-Duty Vehicles were developed and subsequently adopted as voluntary standards. Vietnam Register implemented vehicle labelling for locally assembled and imported light-duty vehicles with up to 7 seats by 1 January 2015. Car manufacturers or importers must publish fuel economy data for car models tested in Vietnam or in reputable foreign laboratories, and the labelling scheme has been mandatory since 2018. Follow-up activities on fuel economy are now being conducted by Vietnam Register to further develop their vehicle fuel economy policies.

SRI LANKA

Sri Lanka has included fuel economy as one of the 'main messages' in its 2018 Voluntary National Review, which highlights how "fuel efficient vehicles are being introduced to modernize transport".

Sri Lanka has promoted fuel economy by basing the vehicle excise tax system to imports of promote cleaner, more efficient vehicles. Electric vehicles have the lowest excise rate, followed by hybrid petrol vehicles, whereas diesel vehicles have the highest rate. This incentive structure has led to high sales of hybrid vehicles in recent years – over 130,000 in 2017.

GFEI, together with the country partner Clean Air Asia, has been engaging with the government around the vehicle excise tax. Clean Air Sri Lanka members together with key government agencies discussed the potential options for the country's revised vehicle excise tax, which was introduced

in 2018. The updated tax is based on engine capacity, with duty on electric vehicles removed altogether. There are also proposals to develop a fuel economy labelling scheme for the country that includes electric vehicles.

PHILIPPINES (NEW TAXATION AND LABELLING)
GFEI has been supporting the Philippines since 2016, which has particularly focused on developing a fuel economy-based vehicle excise taxation scheme with the Department of Finance and the development of the fuel economy label with the Department of Energy.

For the vehicle excise tax scheme, GFEI partner UN Environment supported Clean Air Asia in meeting with relevant stakeholders including testifying in a Senate hearing. The approved vehicle excise tax was based a progressive scheme based on price, as shown below.

- **4%** for up to PHP 600,000 (~US$12,000)
- **10%** for over PHP 600,000 (~US$12,000) to PHP 1 million (~US$20,000)
- **20%** for over PHP 1 million (~US$20,000) up to PHP 4 million (~US$80,000)
- **50%** for over PHP 4 million (~US$80,000)

The approved vehicle excise tax exempts electric vehicles, and hybrid vehicles are charged only half of the effective excise tax. Based on analysis by Clean Air Asia, this approach should bring about a 2% improvement in vehicle fuel economy leading to less fuel consumption and emissions. The fuel economy label is expected to be adopted by the end of 2018.

> *"GFEI is an essential platform that helps shape fuel economy trajectories around the globe. Such a platform is critical in influencing markets such as those in developing Asia, where even small improvements in vehicle fuel economy can lead to huge cumulative benefits."*

Bjarne Pedersen
Executive Director
Clean Air Asia

CHINA (NEW EV MANDATE)
China's Ministry of Industry and Information Technology (MIIT) recently published their final rule on passenger car fuel economy standards, which includes a new mandate for ultra-low/zero emission Electric Vehicles (EVs). The existing fuel economy standards with a target of 5 L/100 km in 2020), will stay the same.

This will be the world's first ZEV mandate policy at the national level, which will significantly drive China's EV sales, especially after the phase-out of China's national purchase subsidy for NEVs in 2021.The mandatory requirements on New Energy Vehicle credits will start in 2019. They are equivalent to a zero emission vehicle (ZEV) mandate, such as has been implemented in California.

Drew Kodjak, Executive Director of GFEI partner the International Council on Clean Transportation said "It is vital for the climate and urban air quality that governments adopt policies to promote a rapid transition to efficient, zero emission vehicles. Since China is the world's largest auto market, this policy will undoubtedly speed up the global transition to a zero emission fleet. We will continue to track the market response to this new innovative policy."

OTHER COUNTRIES
GFEI is also supporting new work in Fiji, as well as Bangladesh, Nepal, Mongolia, Malaysia and Myanmar. In these countries, work is being undertaken to develop the fuel economy baseline before policy options are developed. GFEI is also working with other organisations in the region in the effort to promote a sub-regional roadmap for fuel economy policy development for the Association of Southeast Asian Nations and its member states (ASEAN).

5 SDG7 and the High Level Political Forum

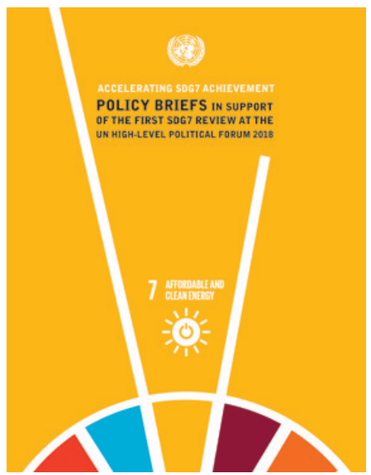
In the lead up to the 2018 High Level Political Forum (HLPF), there have been a series of meetings bringing together key partners engaged in action that will contribute towards Goal 7 of the SDGs, which have convened by the United Nations Department of Economic and Social Affairs (UN DESA).

Sheila Watson, GFEI Executive Secretary, is the only principally transport-focused member of the UN DESA Technical Advisory Group on SDG7 and has highlighted the vital contribution of improved vehicle efficiency to sustainable energy at two events in Norway, held in October 2017 in Trondheim and Oslo. Involvement in this group is further recognition of GFEI's leading role in accelerating energy efficiency in road transport.

The work of the Global Fuel Economy Initiative on the interlinking issues of energy and transport was also significantly recognised in the 'Accelerating SDG 7 Achievement' report. The publication, which was launched at a high level briefing for member states at the UN in New York in April, was written to support the thematic review of Sustainable Development Goal 7 (SDG 7) at the High Level Political Forum (HLPF) meeting in July 2018.

Over 50 global organisations took part in developing 27 briefs which cover key issues around SDG7, including briefing paper number 16 on transport and energy. The importance of energy for transport is recognised in the key recommendations of the report, particularly around "accelerating the pace of transition towards renewable energy", and enhancing "innovation systems, including research, development, deployment and diffusion". The report explicitly highlights the important role of GFEI, setting out how *"the Global Fuel Economy Initiative, a partnership of concerned international bodies, is working towards ensuring real improvements in fuel economy and the deployment of fuel economy technologies."*

"Billions of people stand to benefit from the achievement of Sustainable Development Goal 7 through technological advancements, new economic opportunities and jobs, empowered women, children and youth, better education and health, more sustainable, equitable and inclusive communities, and greater protections from, and resilience to, climate change. We must not let them down" UN Under-Secretary-General and chief of UN DESA Liu Zhenmin.

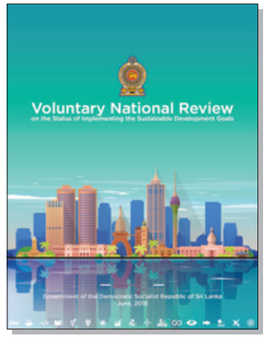


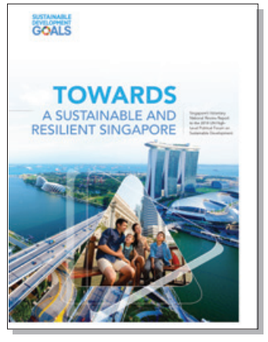
6 Voluntary National Reviews

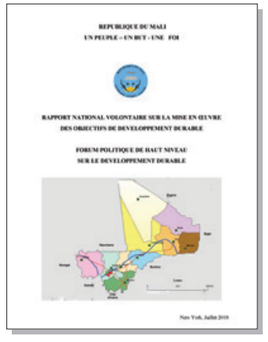
The High Level Political Forum gives countries the opportunity to share the progress they are making towards achieving the Sustainable Development Goals, by undertaking 'Voluntary National Reviews' (VNRs). During the 2018 High Level Political Forum, 47 countries are publishing these progress reports, which "aim to facilitate the sharing of experiences, including successes, challenges and lessons learned, with a view to accelerating the implementation of the 2030 Agenda". Fuel economy is identified as a priority in many of these reports, and GFEI will continue to offer countries support to develop and implement policies.

It is pleasing that so many countries have chosen to highlight how they are prioritising policies to improve fuel economy or vehicle efficiency in order to help reduce emissions, conserve energy and secure efficient economic growth to achieve the Sustainable Development Goals, as shown by the following examples:

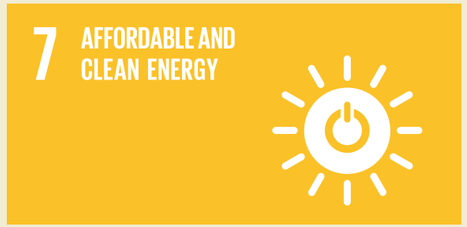
Country	Reference to fuel economy (*= translated)
Dominican Republic	"Reducing emissions means moving towards... more efficient transport systems"*
Ireland	"Irish vehicles registration and motor taxation systems were changed in July 2008 to be based on CO_2 emissions rather than engine size. The tax changes, which applied to vehicles purchased in 2008 or later, had an immediate and substantial positive effect in changing buyer behaviour encouraging the take up of low CO_2 emission vehicles... The net effect has been to accelerate the reduction of carbon emissions within the national fleet and significant fuel and energy savings over the lifetime of each vehicle. This measure has been considered a very effective means of influencing purchasing decisions by motorists in favour of more fuel efficient vehicles"
Mali	"The National Transport Policy aims... to create an environment conducive to the emergence of efficient, economic, reliable and safe transport"*
Singapore	"To help vehicle purchasers make more informed decisions, we introduced the Fuel Economy Labelling Scheme which provides information on the fuel efficiency of each vehicle model. We also introduced a scheme that provides rebates for low-emission vehicles and levies surcharges for high-emission ones."
Sri Lanka	"The government has introduced fiscal policy instruments to promote the high-fuel efficient vehicles through manipulating the tax structure. These include engine capacity based taxing (higher tax/cm3 for high engine capacity vehicles), age based import restrictions (should be less than 3 years) and taxing hybrid and electric cars at relatively low rates."
Togo	"As part of the Global Fuel Economy Initiative (GFEI), Togo with the support of the FIA Foundation, launched on March 31, 2017 the project "Sustainable low emission transport ". This project will: (i) develop an inventory new or used vehicles (cars, motorcycles) imported in 2005, 2008, 2011, 2013, 2016 and (ii) develop a strategy for the promotion of fuel economy and low-emission transport for the period 2018-2027."*
Uruguay	"In order to meet the country's objective of more efficient transport vehicles established the Interinstitutional Energy Efficiency in Transportation Group" and also "Mandatory labelling of EE in light combustion vehicles"*







SUSTAINABLE DEVELOPMENT GOAL 7



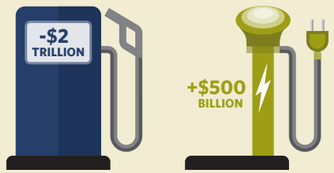
Goal 7 of the Sustainable Development Goals aims to ensure access to affordable, reliable, sustainable and modern energy for all. As part of this, target 7.3 aims to double the global rate of improvement in energy efficiency. This includes vehicle fuel economy.

SUSTAINABLE DEVELOPMENT GOAL 13

Goal 13 aims to take urgent action to combat climate change and its impacts. The transport sector is responsible for nearly a quarter of CO_2 emissions, and improved fuel economy can help reduce this.

WHAT CAN FUEL ECONOMY DELIVER?

FINANCIAL SAVINGS



$2 trillion savings

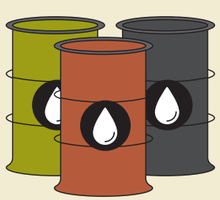
A total of **$2 trillion** could be made in fuel savings by 2025, **$500 billion** of which would fund the costs of initiating a transition to electric vehicles.

LOWER CARBON EMISSIONS

300 fewer power stations

The **33Gt** of CO_2 that could be saved between 2015 and 2050 is roughly the equivalent of closing **300** coal power stations over the same time period.

REDUCED DEPENDENCE ON OIL



AIR QUALITY BENEFITS

From associated improved vehicle emissions standards

GLOBAL FUEL ECONOMY INITIATIVE

Secretariat

Global Fuel Economy Initiative
60 Trafalgar Square
London WC2N 5DS
United Kingdom
+44 (0)207 930 3882 (t)
+44 (0)207 930 3883 (f)

Contact us

Email: **info@globalfueleconomy.org**
Web: **globalfueleconomy.org**

@GlobalFuelEcon | #GFEINetwork

FIA FOUNDATION · UN environment · UC DAVIS Institute of Transportation Studies · iea International Energy Agency · icct The International Council on Clean Transportation · International Transport Forum

With the support of gef · FIA FOUNDATION