

THE 50 BY 50 GLOBAL FUEL ECONOMY INITIATIVE

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International Energy Agency

Created in 1974; currently 28 Member Countries

Autonomous agency linked with the OECD

Goals

- energy security
- environmental protection
- economic growth

Activities

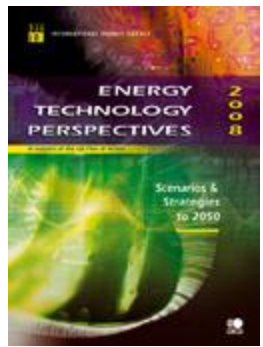
- Co-ordinates efforts to ensure energy security
- Conducts policy analysis
- Links research and governmental directives
- Compiles energy statistics
- Reviews energy policies & programs
- Convenes, mobilizes science & technology experts



www.iea.org

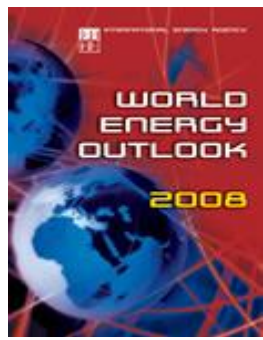


IEA scenarios: ETP and WEO



The IEA has been actively analyzing scenarios and opportunities for reducing GHG emissions

- ETP and WEO are the main IEA references for this topic
- Both include families of scenarios that try to depict different possible developments
 - Reference/Baseline
 - 550 ppm/accelerated technology (ACT), emission stabilization by 2050
 - 450 ppm/BLEU, emissions halved by 2050
- WEO projections stop in 2030
- ETP builds on WEO, focusing on the longer term (2050) and paying particular attention to the role of technology

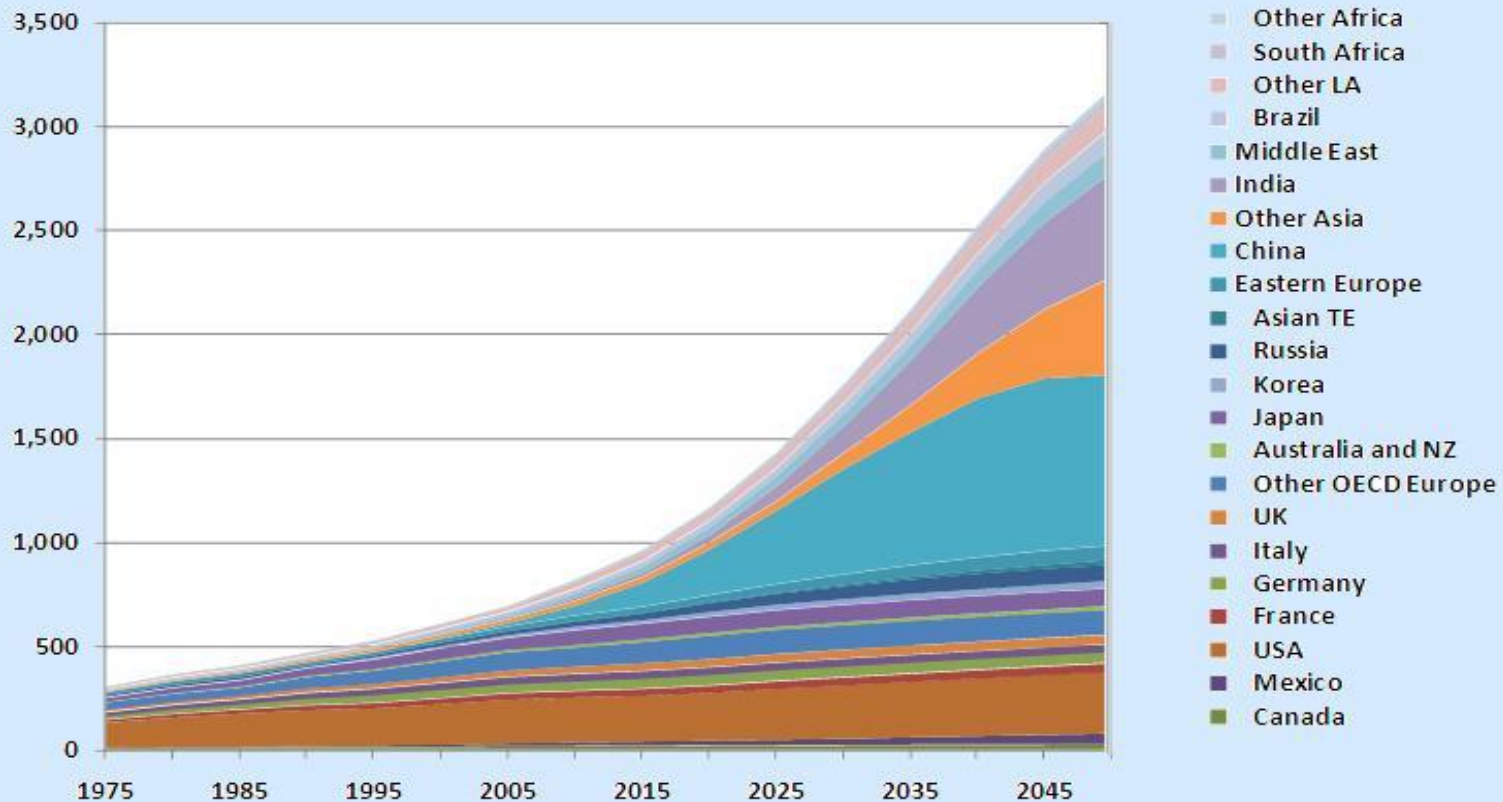


IEA ETP scenarios

Light duty vehicle stock



Millions of light-duty vehicles by region

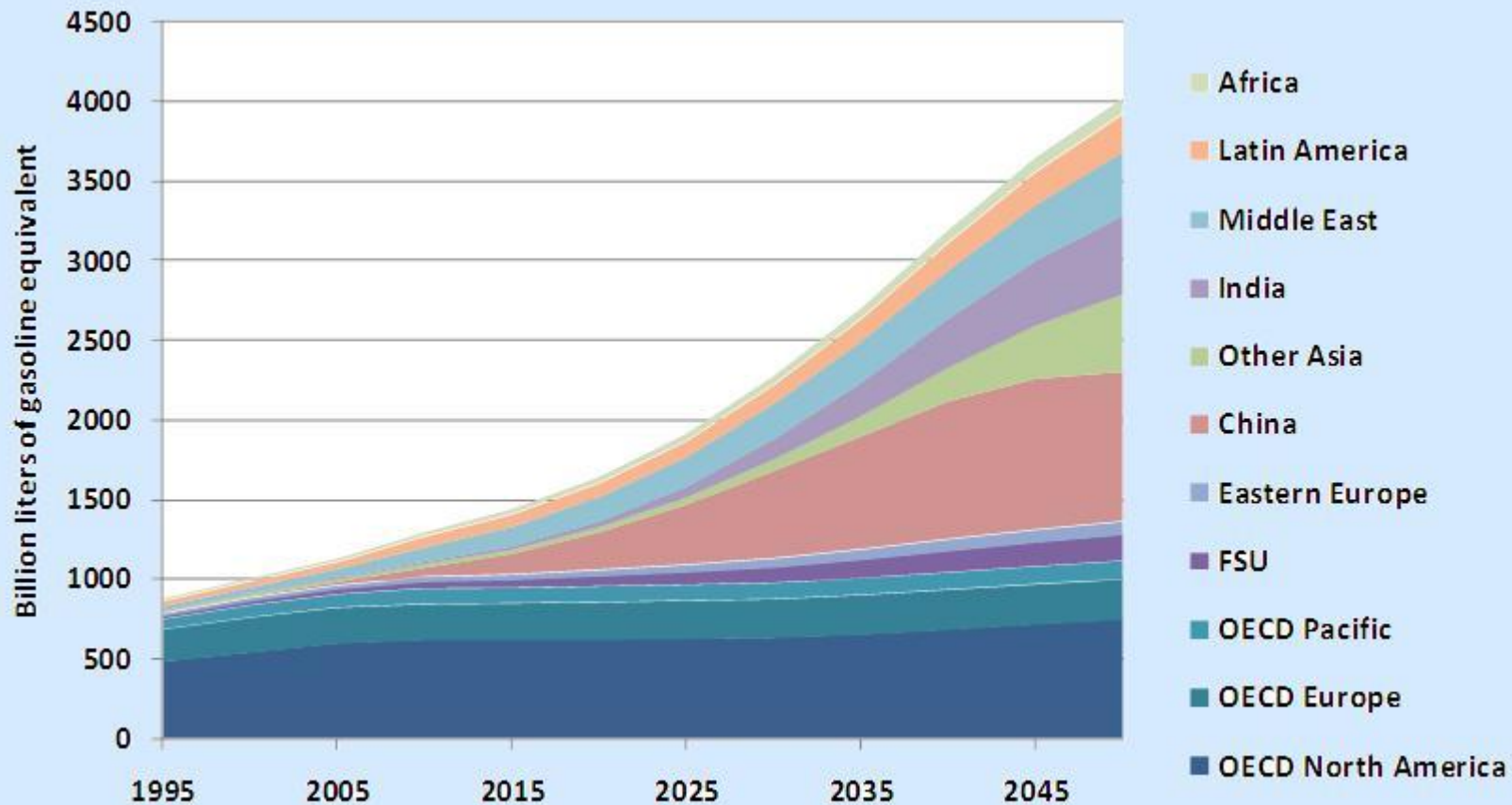


Nearly all car ownership growth is expected to occur in non-OECD countries



IEA ETP scenarios

LDV fuel use by region (baseline scenario)



Most of the increase in fuel use expected for LDVs is expected to occur in non-OECD countries



IEA ETP analysis

Outlook for transport



- For a very low CO₂ future, transport must and can achieve deep GHG reductions
- Oil use must be cut strongly if emissions are to be reduced
 - Baseline CO₂ intensity could rise dramatically with rise in unconventional oil and synthetic fuels
 - A transition will take decades
 - We will need massive oil investments in any case
- Efficiency offers substantial improvements in all modes are available at the most modest cost
 - Many solutions are entirely paid by fuel savings
 - Some (e.g. significant material substitution) are more expensive
 - Costs of other types of measures are widely variable



IEA ETP analysis

Outlook for LDVs



New LDVs can become 50% more efficient by 2030

- This is, very roughly as a global average, moving from 7.5-8 L/100 km to slightly below 4

Some countries are above 8 L/100 km, and some are already well below

- For gasoline vehicles, 8 L/100 km relate to about 180 g/km CO₂, dropping to 90 by 2030

Several individual vehicles, including hybrids like the Toyota Prius, are there already

- It involves a maximum use of available technology, including hybrids
EVs and FCVs may play a significant role, but they are not needed to reach the 2030 target

- Constraining increases in vehicle size, weight and power is important to achieve the objective

- A 50% improvement in new LDVs by 2030 would yield a 50% improvement in the entire stock of vehicles by 2050



IEA concrete action

The Global Fuel Economy Initiative (GFEI)

- Launched on 4 March 2009 in Geneva by IEA, ITF, UNEP, and the FIA Foundation



GOAL: reduction in fuel consumption per km of 50% by 2050

- The initiative is coherent with IEA's analysis of low CO₂ pathways (Energy Technology Perspectives ACT and BLUE, World Energy Outlook 550 and 450 ppm) and recommendations made to Hokkaido G8 Summit

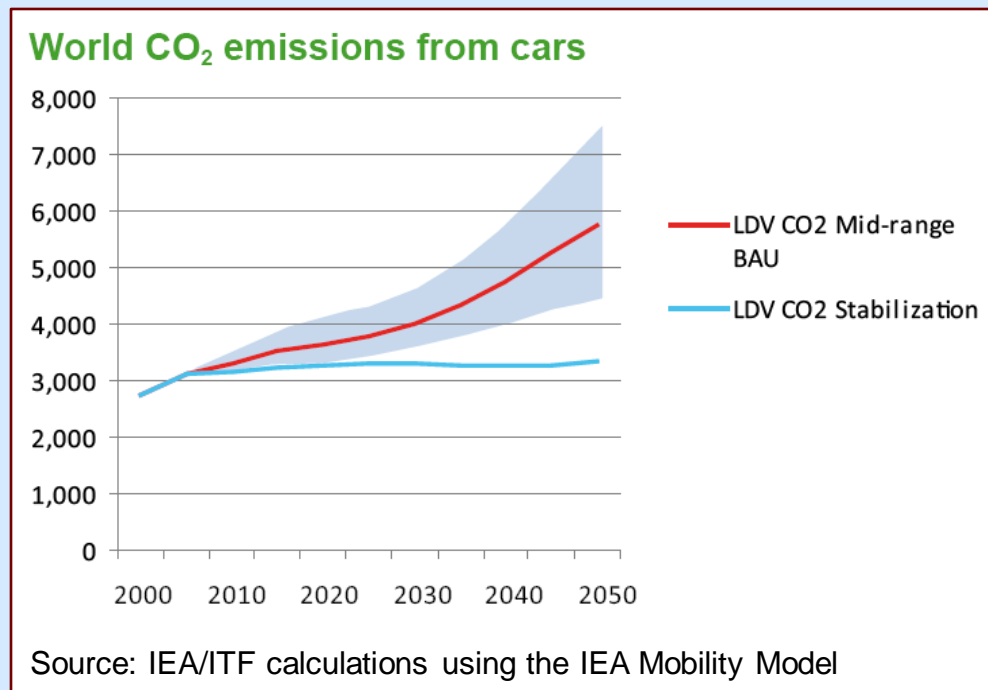


Global Fuel Economy Initiative

Opportunities (1)



- Savings of six billion barrels of oil and 2 Gt of CO₂ per year (equivalent to half the total current annual emissions of the EU) are achievable through an ambitious world wide programme



- 2 Gt CO₂ reduction per year by 2050, about 1 Gt per year by 2025
- Million tonnes within a few years of new policies implemented (although stock-effects are important)
- Need to act to limit eventual rebound effects



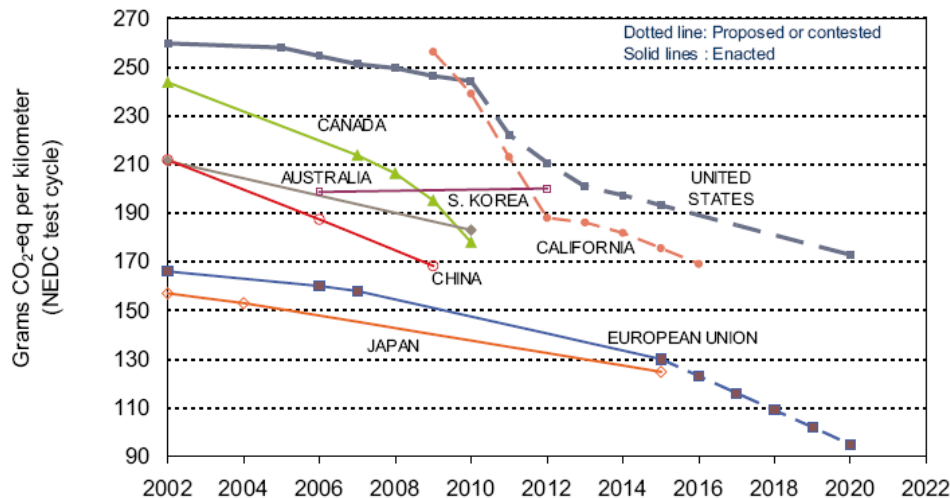
Global Fuel Economy Initiative

Opportunities (2)



- Aligned policies and regulatory systems would be cheaper to comply to for manufacturers
 - Currently fuel economy is dealt with through a set of country/region based policies (US, Japan, EU), almost none in non-OECD (only China)
 - Test procedures differ (European NEDC, Japanese JC08, US CAFE)

New Car Fuel Efficiency / CO₂ Emissions Standards



Source: Passenger Vehicle Greenhouse Gas and Fuel Economy Standards: A Global Update, ICCT. January 2009 update

□ Significant co-benefits

- Hundreds of billions of cost savings to consumers in oil importing countries
- Reductions in some pollutant emissions (e. g. HC)
- Safety, related to lighter vehicles (e.g. to pedestrians, non-motorized traffic)



Global Fuel Economy Initiative

Direction of work



- We need data and research
 - There is little information on fuel economy levels, trends and improvement potential for most developing countries
- We need to build capacity and improve information for governments
 - At a recent workshop on fuel economy in Bangkok, governments of most South-East Asian countries appeared to have little awareness of fuel economy as an issue or area for setting policies
 - A similar situation can be identified in Latin America
- We need to assist governments to develop and implement strong, cost-effective fuel economy policies
 - Alignment across regions will also help, especially on the manufacturer's side
- We need to promote consumer awareness
 - Informing consumer is essential for achieving the acceptance of fuel economy policies and to make them a success



Global Fuel Economy Initiative

Main activities and objectives



Anticipated five-year horizon for activities

- The initiative will feature four key elements
 - Analysis of current fuel economies and technology penetrations by country/region (in OECD and non-OECD countries). Evaluation of fuel economy potentials. Work started in the IEA
 - Support for national and regional policy-making efforts
 - Outreach to stakeholders (e.g. fleets, vehicle manufacturers)
 - Information campaigns around the world to educate consumers, stakeholders
- Indicative targets related to vehicle fuel economy and CO₂ reduction have been identified
 - 30% improvement in new car fuel economy (reduction in L/100km) worldwide by 2020, 50% improvement by 2030
 - Leading to a 50% reduction in stock average fuel economy by 2050 (the “50 by 50” campaign)



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Targets



	2020	2030	2050
New cars	<p>30% average fuel economy improvement (reduction in L/100 km) for new vehicles worldwide, mainly from incremental efficiency improvements to engines, drive trains, weight, aerodynamics and accessories.</p> <p>Plug-in hybrids, electric and fuel cell vehicles are not required to meet this target but certainly may help to reach it, reach it faster or even exceed it.</p>	<p>50% average improvement for new vehicles, worldwide; mainly from incremental improvements and full hybridisation of most models of vehicles.</p> <p>Plug-in hybrids, electric and fuel cell vehicles are not required to meet this target but certainly may help to reach it, reach it faster or even exceed it.</p>	<p>50%+ (currently unspecified target): Additional improvements in new car fuel economy are possible from on-going light-weighting, shifts to electric motor drive, possible adoption of fuel cell vehicles – all of which could also occur before 2030 but are expected to become much more important after.</p>
Stock of all cars	<p>20% improvement in stock-average (on-road) efficiency, reflecting both the improvements in new car fuel economy (with some lag time for stock-turnover) and additional measures such as eco-driving, improved aftermarket components, better vehicle maintenance, etc.</p>	<p>35% improvement in stock, roughly trailing new car improvements plus on-road improvement measures.</p>	<p>50% (50 by 50: the Ultimate Goal) improvement in global stock average fuel economy, following the new car improvement in 2030 and with in-use improvement measures.</p>



Global Fuel Economy Initiative

Current status



- Project scope
 - Currently focused on cars (LDVs) but can be expanded to other vehicle types (e.g. 2-wheelers, buses, trucks)
 - Primary focus on new vehicles but will also contain elements related to in-use fuel economy of all vehicles (e.g. maintenance, driver training)
- Developing a global/regional approach
 - Research and information development/dissemination on a global basis
 - Regional dialogues - have already begun in SE Asia; planning for Latin America, possibly East Africa
- Potential support from the Global Environment Facility and other external agencies is under discussion



Conclusions

- It is possible to cut global transport CO₂ emissions dramatically by 2050, but it will be very challenging
 - Fuel economy improvement is a key measure
- Without policy interventions in the developing world, vehicle energy use and CO₂ could increase several-fold by 2050
- IEA and several partners have launched the Global Fuel Economy Initiative
- It appears reasonable to target a 50% improvement in new LDV fuel economy (reduction in vehicle energy intensity), on average around the world by 2030, with interim targets
 - This would achieve an estimated 2 Gt reduction (or greater) in CO₂ emissions per year by 2050
 - Interim targets: 50% reduction in new car energy use per km by 2030, 30% by 2020

