# ALEX KOERNER INTERNATIONAL ENERGY AGENCY





# International Comparison of Light-Duty Vehicle Fuel Economy 2012-2013 Update

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# **Global Fuel Economy Initiative**

Six core partners: FIA Foundation, UNEP, IEA, ITF, ICCT and UC Davis, financial support from GEF and EU www.iea.ora

### **Scope**

 Promoting fuel economy improvements of passenger cars and heavy duty road vehicles

### **Activities**

- Analysis: data gathering, modeling, baseline development
- Evaluation: policy tools and options (iea
- Strategy development: organization of dialogues
- Outreach: Awareness raising, communication (

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## **GFEI** target

- Reduce new passenger light-duty vehicle specific fuel consumption (Lge/100km) by 50% until 2030
- Reduce passenger light-duty vehicle stock specific fuel consumption (Lge/100km) by 50% until 2050



# **GFEI fuel economy report**

- 3<sup>rd</sup> edition since 2010
- Unique compilation of OECD and non-OECD new light duty vehicle fuel economy data
- Dataset currently comprises 26 countries covering more than 80% of the global LDV market
- Dataset covering eight years time series from 2008 to 2013
- Next update will come in 2016 and will include data of GFEI pilot countries





# Methodology

#### Analysis based on vehicle registration data from IHS POLK

- Sales data by brand, model, powertrain, fuel, transmission type etc.
- Vehicle segment, weight data and FE/CO<sub>2</sub> data partly missing

# Missing information is completed using additional sources – government agencies, car manufacturer associations, journals

Satisfactory market coverage when CO2/FE data >80% of total sales

# For the updated report, all fuel economy and emission data has been normalized to NEDC

- Normalization based on existing conversion functions from ICCT, JAMA and own analysis
- Improves comparability while only slightly changing the overall message

#### Fuel economy results are based on sales weighted averages



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### **Regional fuel economy trends**



- Countries with FE policies in place show encouraging improvement rates
- Size shift vs. technology evolution moderates non-OECD improvement
- Normalization to NEDC affects FTP based markets most 15% increase of FE due to conversion compared to last edition



# FE improvement - Targets and reality





### FE trends – History and future



 Reaching the GFEI target requires setting of strengthened FE targets for the 2015 to 2030 period and broader coverage of FE regulations



### FE in OECD is very heterogeneous



Both, least and most efficient markets are in OECD



### **Vehicle market dynamics**



- The non-OECD market accounts for almost 60% of global PLDV sales, leading to a decreasing share of markets with fuel economy regulation
- Shifts towards least efficient markets lead to moderate average OECD FE improvement rates although more than half of the OECD markets have improvement rates >3%



# Conclusions

Reaching the GFEI target to cut by half specific lightduty vehicle fuel consumption by 2030 requires:

- to keep scaling up the market coverage of fuel economy regulations;
- to set strengthened fuel economy improvement targets for the 2015-2030 period (especially in the non-OECD);
- to monitor the stringency of fuel economy improvement targets already in place;
- to keep monitoring the developments of fuel economy worldwide.



# Thank you!





### **Evolution of vehicle size**



- With growing income a shift to larger vehicles can be observed in non-OECD
- Globally a trend towards medium sized vehicles is gaining momentum



## **Engine power and displacement**



- In the OECD and non-OECD a trend towards more powerful cars can be observed, while non-OECD cars are still significantly weaker
- Engine size is stabilizing, while non-OECD vehicles have much smaller engines