

# Workshop: Can we prevent another dieselgate?

**Compliance programs in emerging markets**  
Current practice and future plans in Latin America

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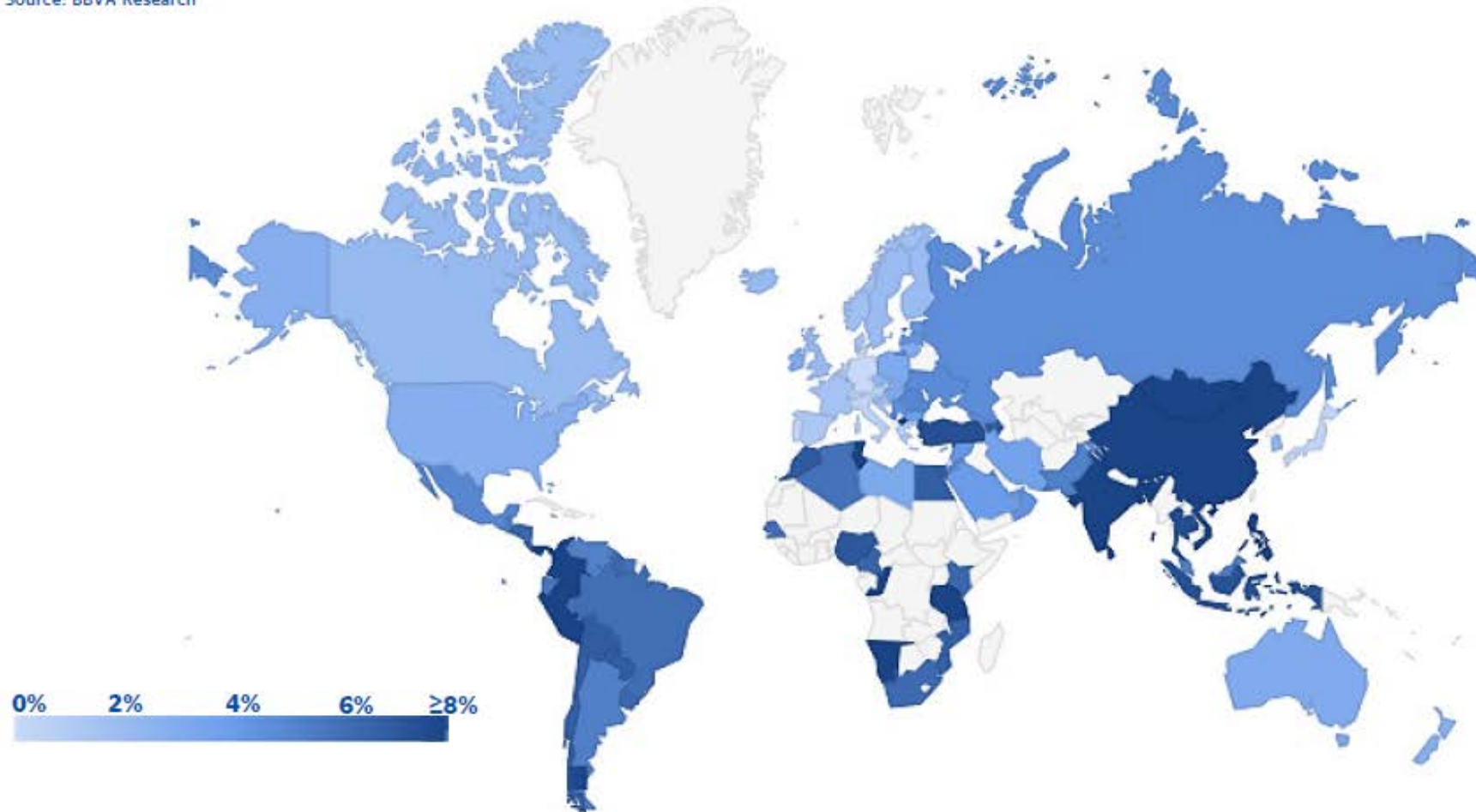
Centro Mario Molina Chile

8 June 2016

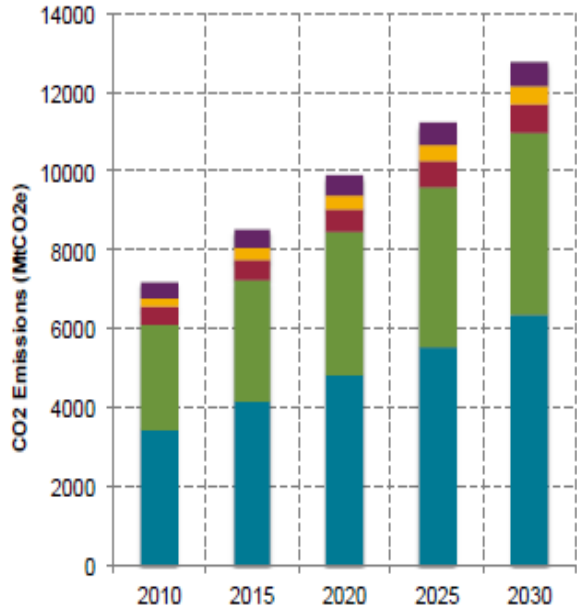
# Expected annual increase in car fleet for the next decade concentrated in Asia and Latam

## Expected annual increase in World Car Fleet (2010-2020)

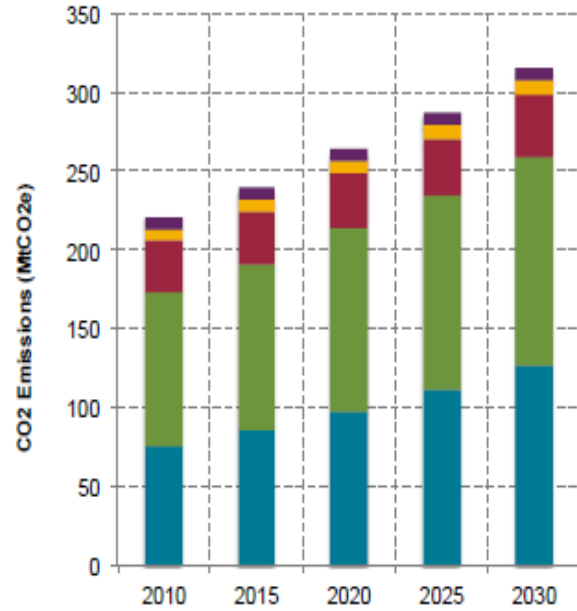
(% yearly growth)  
Source: BBVA Research



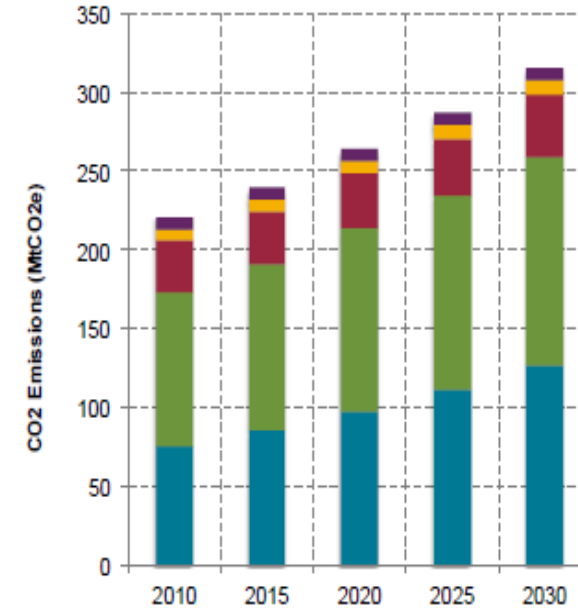
# GLOBAL



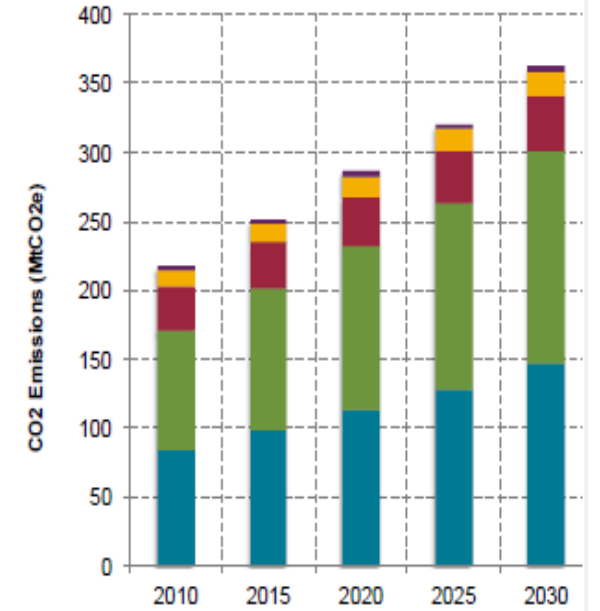
# LATIN AMERICA-31



# BRAZIL



# MEXICO



Legend: Rail (purple), 2,3-Wheelers (yellow), Buses (red), HDTs (green), LDVs (blue)

CO2 emission transport sector - Latina America ICCT

## Emission standards compliance in Latin America

- Mostly of regional compliance is focus on certification process.
- In countries with massive vehicle production the certification depends on vehicle manufactures.
- In countries that are assembling and/or importing there are no authorities with independing capacity for verification of data provide by car dealers/manufactures (except Chile).

	Laboratory Testing	Conformity of Prodction	In Use surveillance
UE	Tested by manufacture under NEDC cycle	Random samples tested by the manufacture	Under manufacture responsibility (only local pollutants)
EEUU	Tested by manufacture under US cycles. Authority run confirmatory test on 15% of vehicles.	Selective enforcement audit	Under manufacture responsibility. Random samples by the authority.
Chile	Authority test for 100% of the vehicles.	Random samples tested by the authority	Not in place
Brazil	Tested by manufacture under FTP cycle	Samples tested by manufactures in Brazil (weak audit by the authority)	
Argentina	Tested by manufacture under NEDC	Not in place	Not in place
Colombia /Uruguay	Authority review certificates and data provide by dealer/manufacture	Not in place	Not in place
Peru/Ecuador	Authority request a sworn declaration of compliance made by the dealer/manufacture	Not in place	Not in place
Costa Rica /Bolivia/Paraguay	Not in place	Not in place	Not in place

# Problems in LAC

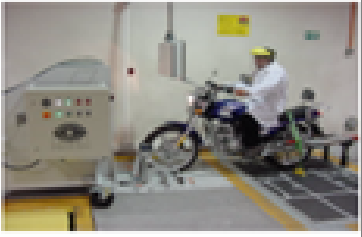
- Some similar problems to EU and USA, but main issue is the lack of capacities.
- Actual emission compliance scheme is vulnerable to bad practice from manufactures and car importers, because the authority take decision of compliance only on documentation review, totally provided by manufactures.
- Also, the institutional bodies in charge of those activities presents (in mostly of the cases) lack of knowledge and experience in testing procedures and vehicle technologies.
- Those problems of capacity provide a poor base for a successful introduction of more clean and efficient vehicles, beyond the problems of compliance observed in EU and USA.

# Chile compliance system

- Chile is top 7 in economic freedom at global level. Vehicle are coming from all over the world.
- In 1992 Government established first emission standards.
- After same cases of dealers/manufactures cheating in documentary certification process the Government decided the creation of an independent state own world class vehicle emission laboratory (3CV Center).
- 3CV is in operation from 1997 under Ministry of Transport and Telecommunications.
- Key for successful: very clear institutional attributions, robust technical body with long term stability, and high credibility in the industry.
- Rest of the regional countries expressed interest in to reply this experience without success until now (Colombia, Peru, Uruguay, Costa Rica).

# Chile compliance system

Certification of LDV/MDV and motorcycles



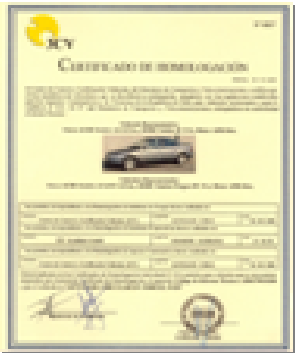
Emission certification under USEPA or Euro protocols



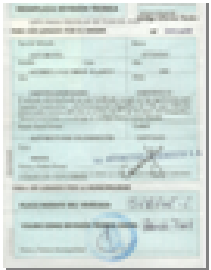
Safety requirements and components certification



Model certificate



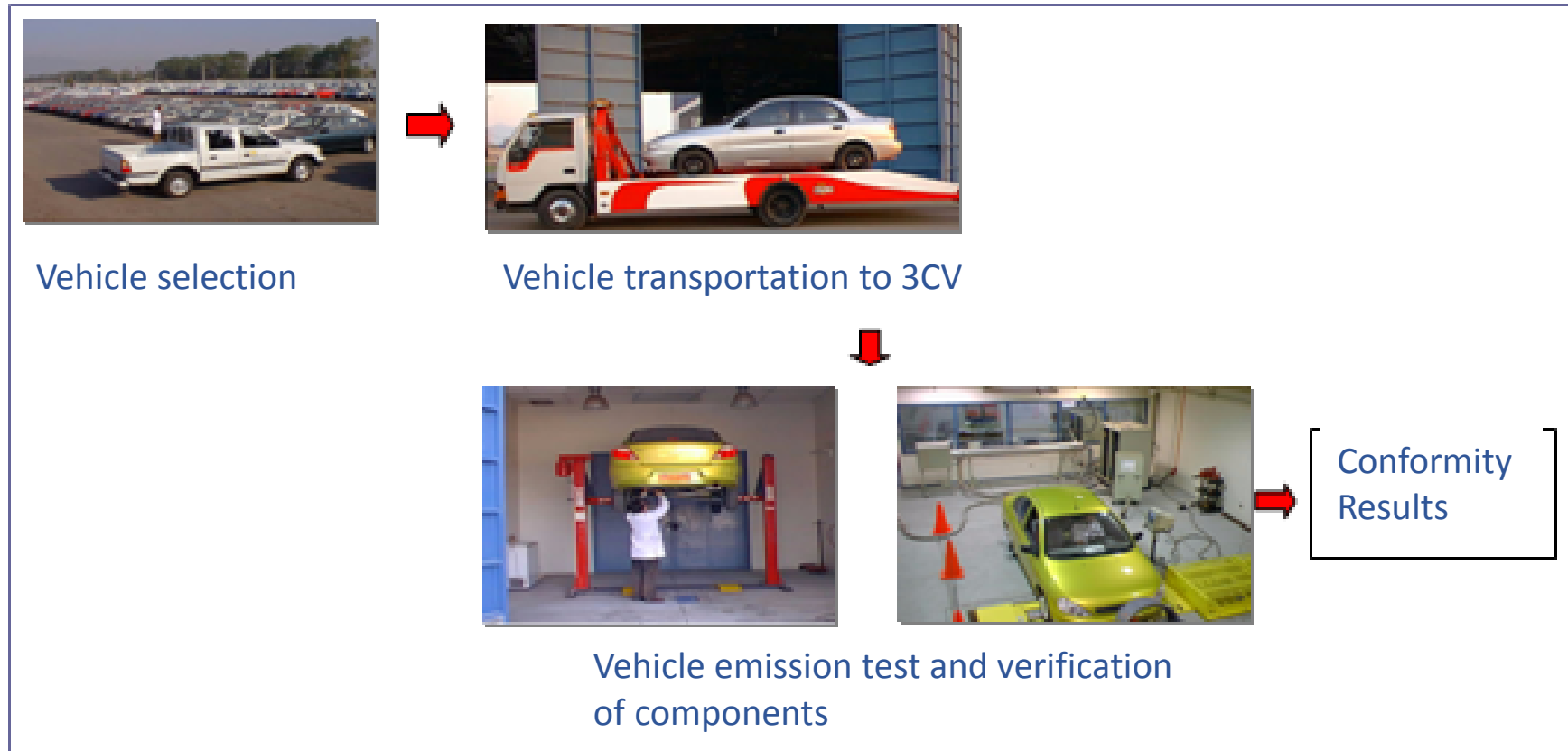
Individual vehicle certificate



- Information is also use for:
- Energy efficiency labelling scheme
  - Tax for Nox and Fuel consumption

# Chile compliance system

Conformity of production of LDV/MDV and motorcycles





# Experience on emission certification

## Certification:

- Mostly of manufactures presents vehicles that meet standards with no problems.
- But some of them face problems bringing vehicle that fails in emission test, more critical when emission standards are updated.
  - Key stament from a manager of an european manufacture that face a lot of problems with diesel vehicles in certification of new Euro 5 standard in 2014:  
“...congratulations, when you update your standards we need to change our product in the market...”  
**??????**

# Experience on conformity of production

- 16 years of conformity of production;
- At the beginning several problems detected.
- Manufactures that are entering to the market fails more often (South Korea at the beginning of last decade; China at the end of last decade).
- Some European manufactures with regional production also fail.

LDV/MDV models that failed in emission conformity of production from 2010



Manufacturer	Model	Problem in conformity of production
Citroen	C4 1.6 Lts. Sedán 4P T/M Motor Diesel	Vehicle sample fails on Nox
BMW	316i 1.6 Lts., DOHC Sedán 4P Motor Otto	Vehicle sample fails on HC
Geely	LC 1.3 Lts., DOHC Hatch Back 5P T/M Motor Otto	Vehicle sample fails on CO
Peugeot	Partner Tepee Outdoor 1.6 Lts., DOHC HDI Station Wagon 5P T/M Motor Diesel	Vehicle sample fails on MP
JMC	Boarding 2.8 Lts., SOHC DC 4P 4x4 T/M Motor Diesel	Vehicle sample fails on MP
Lifan	320 1.3 Lts., Hatch Back 5P T/M Motor Otto	Vehicle sample fails on CO
Geely	CK 1.3 Lts., DOHC Sedán 4P T/M Motor Otto	Vehicle sample fails on CO
Renault	Koleos 2.5 Lts., DOHC Station 5P T/A Motor Otto	Vehicle sample fails on CO
Lifan	520 1.6 Lts. Sedán DOHC 4P T/M Motor Otto	Vehicle sample fails on CO
Mahindra	Scorpio S5 2.2 Lts., CRDI DOHC Station Wagon 5P 4x2 T/M Motor Diesel	Vehicle sample fails on Nox and Nox+HC
Hyundai	Eon HA 0,8 Lts. SOHC Hatch Back 5P. T/M Motor Otto	Vehicle sample fails on CO
Dongfeng	V01-216 (DF 2900) 1,1 Lts. SOHC Pick Up Doble Cabina 4P. T/M Motor Otto	Vehicle sample fails on HC and CO
Ssangyong	Korando 2.0 Lts., Station Wagon 5P T/A Motor Otto	Vehicle sample fails on NMHC
Changan	S200 1.0 Lts DOHC Pick Up Doble Cabina T/M	Vehicle sample fails on NMHC

# VW scandal in Chile

- On October, 2015 the Executive Director of 3CV suspended the certification of 23 vehicle models related with the scandal, setting a formal prohibition to sell more vehicles corresponding to those models.
- The situation will be solve when VW's dealer in Chile (Porsche Chile S.P.A) will presents information that describe the technical solution that will be implemented to solve the problem in cars that are in stock. Cars sold before the prohibition depends on consumer protection law (there are not legal basis for recall in Chile).

Vehicle models  
with emission  
certification  
suspended in  
relation with  
VW scandal

Volkswagen	Tiguan 2,0 Lts. TDI DOHC Station Wagon 5P. T/A 4x4 Motor Diesel
Volkswagen	Tiguan 2,0 Lts. TDI DOHC Station Wagon 4x2 5P. T/M Motor CFF Diesel
Volkswagen	Sharan Highline 2,0 Lts. TDI CR DOHC Station Wagon 5P. T/A Motor CFFB Diesel
Volkswagen	Caddy 2,0 Lts. TDI DOHC Furgón 5P. T/M Motor CFHC Diesel
Volkswagen	Tiguan 2,0 TDI DOHC Station Wagon 4x4 5P. T/A Motor CBA Diesel

Audi	A4 2,0 Lts. TDI DOHC Sedan 4P. T/A Motor CAGA Diesel
Audi	Q5 2,0 Lts. TDI DOHC Station Wagon 5P. 4x4 T/A Motor CGLB Diesel
Audi	Q3 2,0 Lts. TDI DOHC Station Wagon T/A 4x4 Motor CFGC Diesel
Audi	A4 2,0 Lts. TDI DOHC Sedan 4P. T/A Motor CJCA Diesel
Audi	Q5 2,0 Lts. Tdi DOHC Station Wagon 5P. 4x4 T/A Motor CGLC Diesel
Audi	A6 2,0 Lts. TDI DOHC Sedan 4P. T/A Motor CGLC Diesel

Skoda	Octavia 1,6 Lts. TDI DOHC Sedan 4P. T/A Motor CAYC Diesel
Skoda	Octavia 1,6 Lts. TDI DOHC Sedan 4P. T/M Motor CAYC Diesel
Skoda	Fabia 1,6 Lts. TDI DOHC Hatch Back 5P. T/M Motor CAYC Diesel
Skoda	Yeti 2,0 Lts. TDI DOHC Station Wagon 5P. T/M Motor CFHA Diesel
Skoda	Yeti 2,0 Lts. TDI DOHC Station Wagon 5P. T/A 4x4 Motor CFHC Diesel
Skoda	SuperB 2,0 Lts. TDI DOHC Sedan 4P. T/A Motor CFFB Diesel
Skoda	Rapid 1,6 Lts. TDI DOHC Sedan 5P. T/M Motor CAYC Diesel
Skoda	Rapid Spaceback 1,6 Lts. TDI DOHC Hatch Back 5P. T/M Motor CAYB Diesel
Skoda	Rapid 1,6 Lts. TDI DOHC Sedan 4P. T/M Motor CAYB Diesel
Skoda	Rapid Spaceback 1,6 Lts. TDI DOHC Hatch Back 5P. T/A Motor CAYB Diesel
Skoda	Rapid 1,6 Lts. TDI DOHC Sedan 4P. T/A Motor CAYB Diesel
Skoda	Fabia 1,2 Lts. TDI DOHC Hatch Back 5P. T/M Motor CFWA Diesel

# Proposal for compliance improvement in Latin America

- Difficulties to reply Chile system can be solved thru the development of more simple solution for compliance using the best recommendations that came from dieselgate:
  - Adopt Euro 6c for LDT ASAP.
  - Certification under manufactures responsibility.
  - RDE test done by the authority.
  - Introduction of conformity of production, considering RDE.
  - Develop first regional experience in – use surveillance.

# Specific proposals for short term (3 years) in LAC

- Supporting the improvement of Chilean scheme including WLTP cycle, real driving emission (RDE) test in certification and conformity of production, introducing also in use surveillance, to keep this scheme like an example for the rest of the region.
- Improve the scheme of a country with domestic vehicle production, including WLTP cycle for manufactures test and RDE done by the authority. Introduction of conformity of production, considering RDE.
- Creation of a first example of more simple compliance scheme, based on RDE in conformity of production, that can be a solution for countries that today use only documentation review. It's a more realistic approach compare to create vehicle emission labs.
- Provide training in relevant governmental agencies in selected countries on best practices of compliance and enforcement of vehicle emissions.