

RDE - the last chance for diesel cars

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T&E: 27 COUNTRIES 49 MEMBER & SUPPORT GROUPS



Outline

- Transport and Environment
- The cost of air pollution
- The failed system of Euro Standards
- Impacts of Conformity Factors
- Next steps for RDE
- A robust framework for vehicle approval
- Why only clean diesel can slow its decline
- Summary of key messages

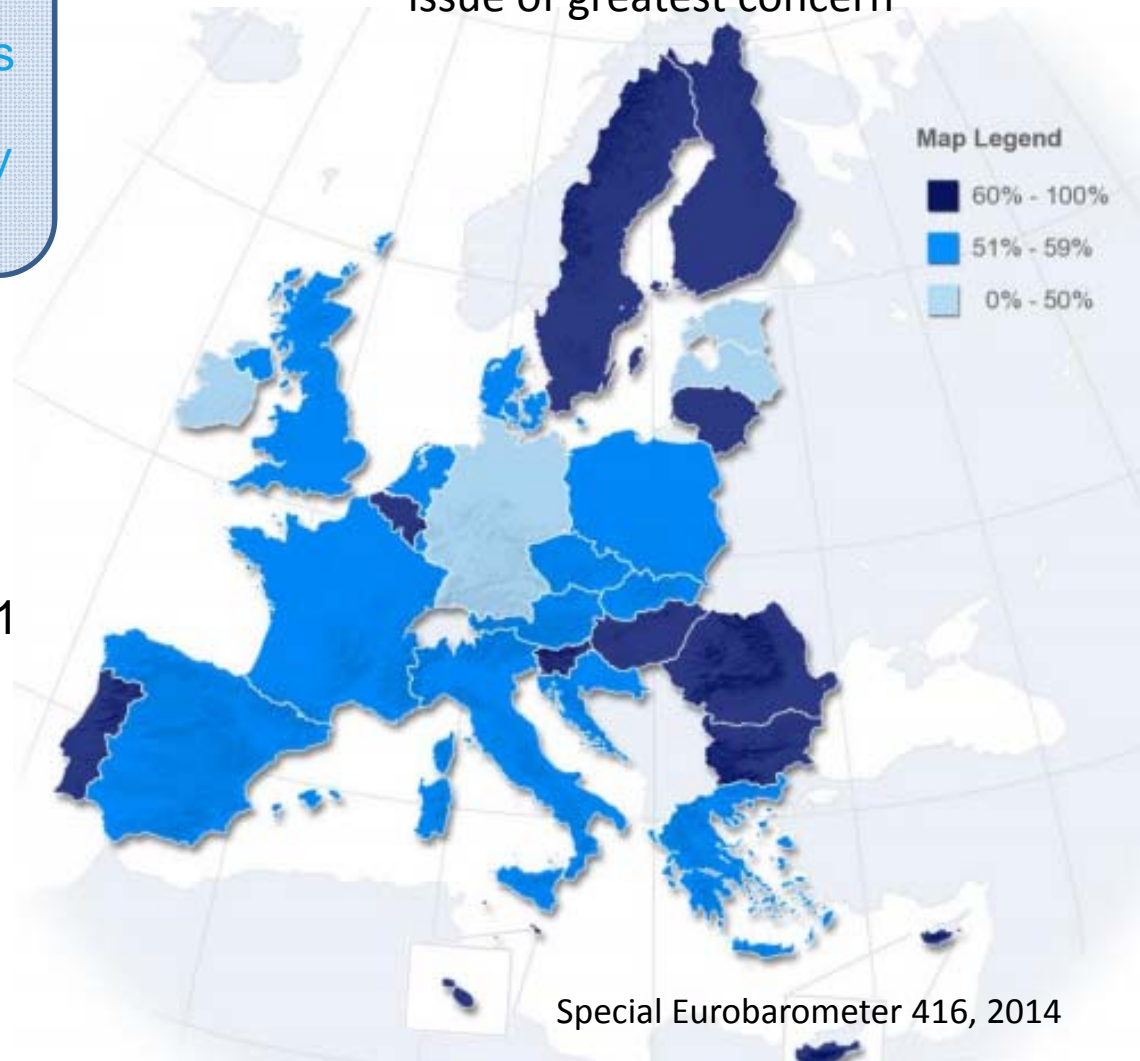


Over half of Europeans say air pollution is the environmental issue of most concern

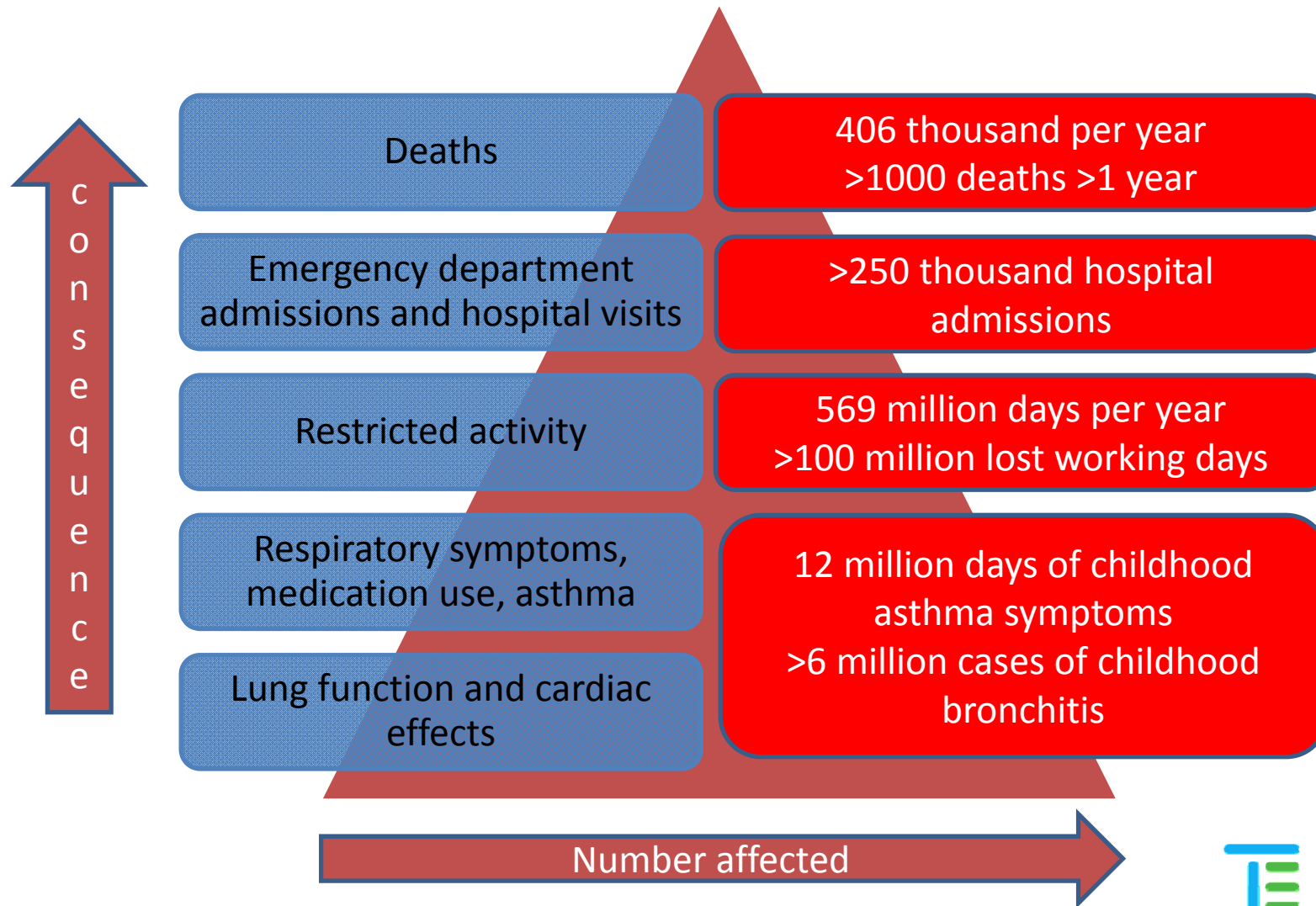
- 95% of Europeans say that protecting the environment is “important to them personally”; over half say “very important”

- 56% of Europeans say they are most concerned about air pollution
- Concern about air pollution is growing – up from 36% in 2011
- Men and women irrespective of age and education are equally concerned

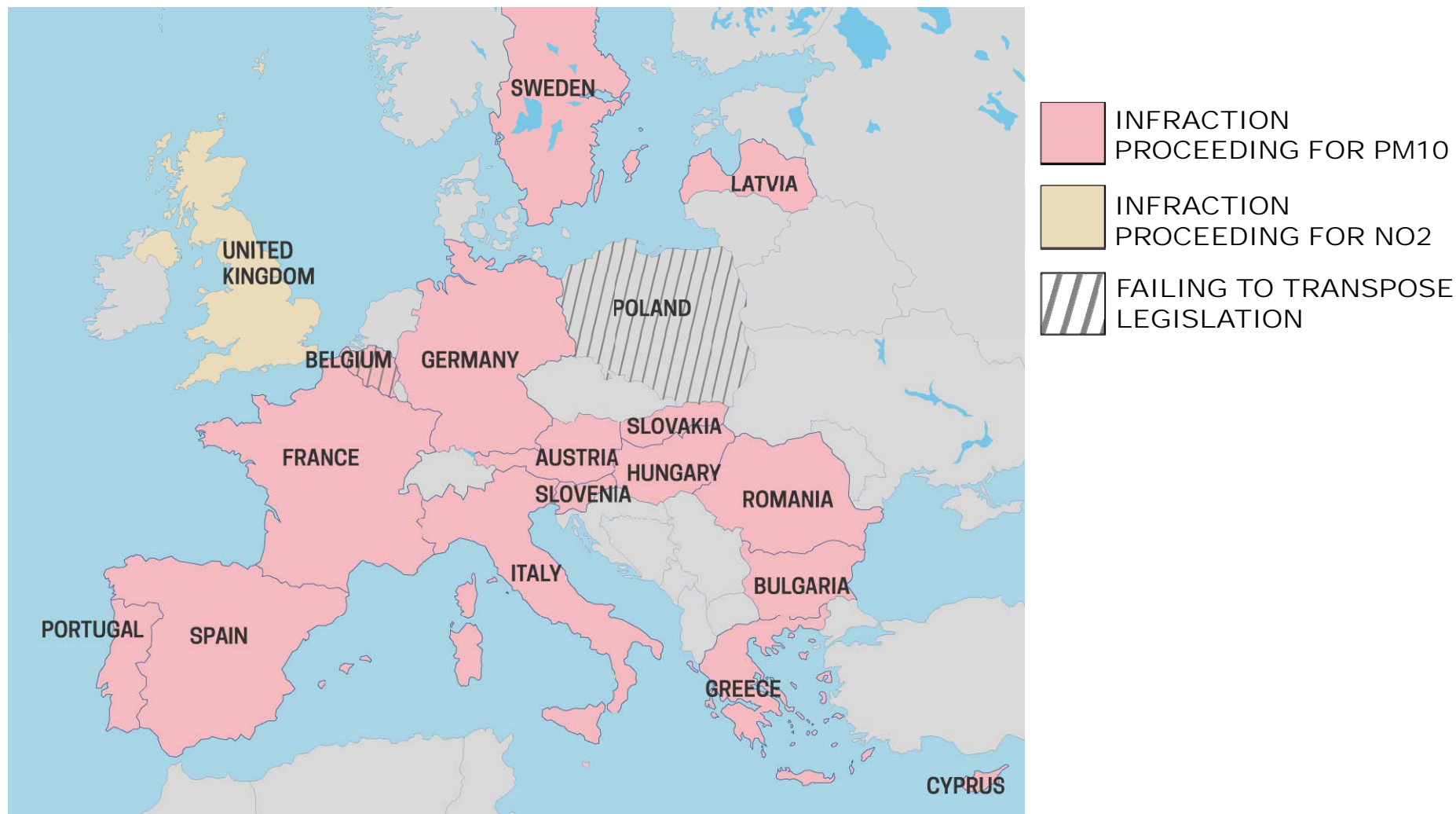
% saying air pollution is the environmental issue of greatest concern



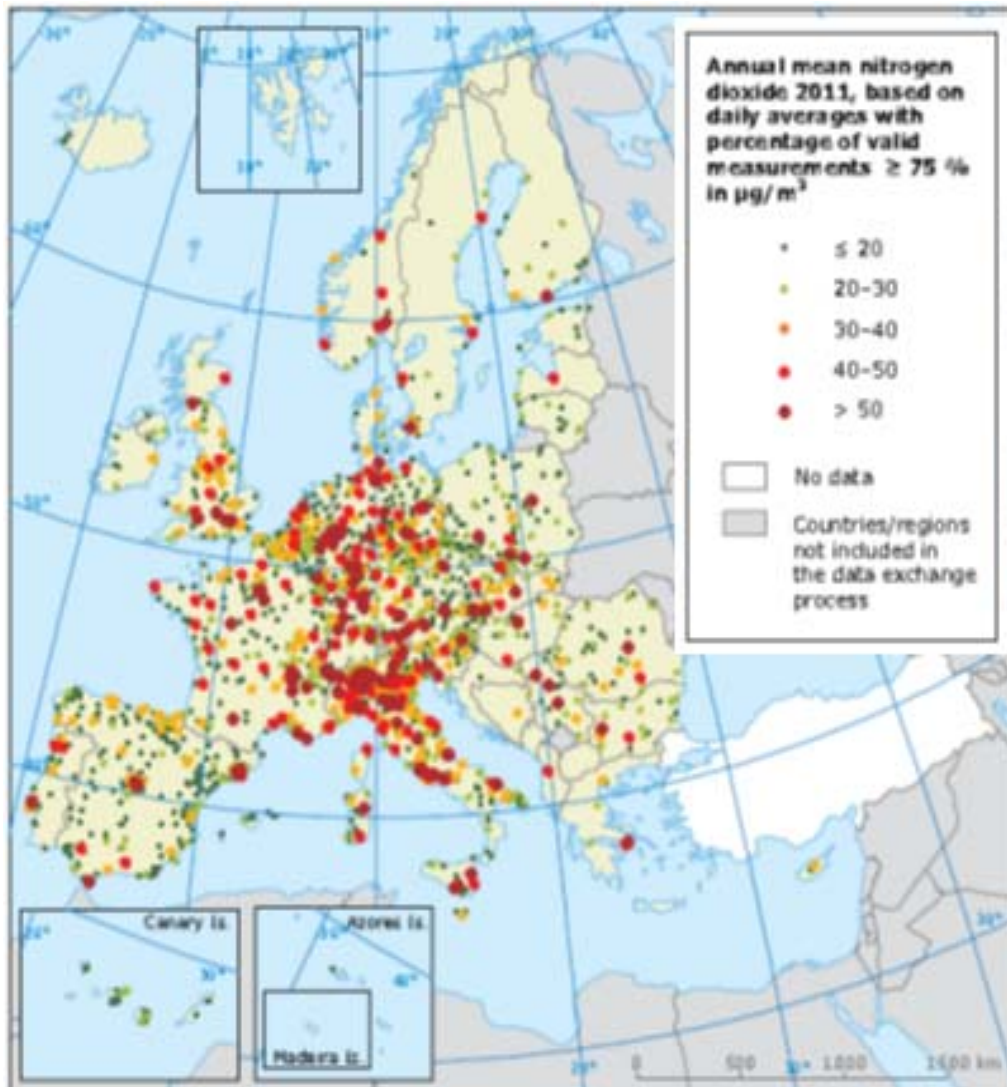
The scale of the health effects is shocking;
the cost (€330-940Bn pa) eye-watering



17 Member States have air pollution infraction proceedings – more will follow

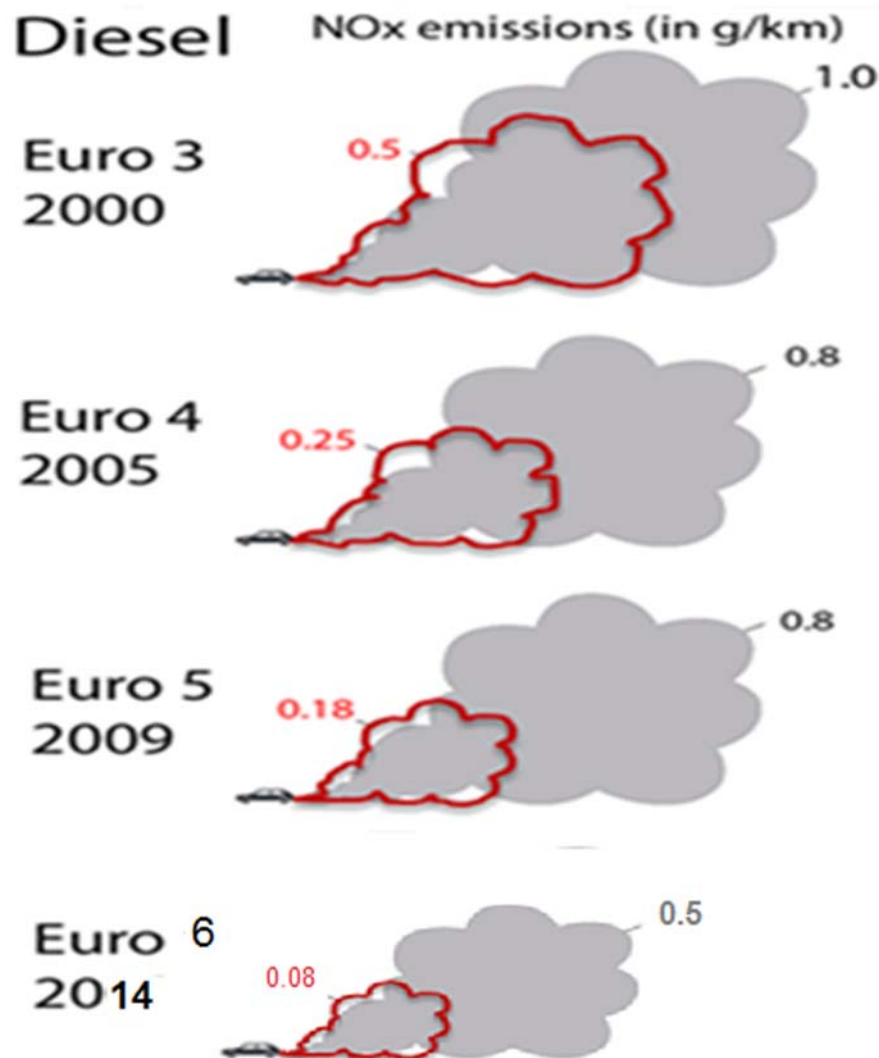


NO₂ limits are widely exceeded EU-wide in heavily trafficked areas



- NO₂ is a powerful lung irritant
- Increases asthma incidence and hospital emergency admissions
- Associated with an increase in heart attacks
- Associated with low birth weights and small head circumferences
- COMEAP report estimates NO₂ doubles UK premature deaths
- Precursor of ozone and PM_{2.5} formation
- 90% of NO₂ from traffic in city locations

High diesel vehicle emissions are the primary reason for the persistence of high air pollution



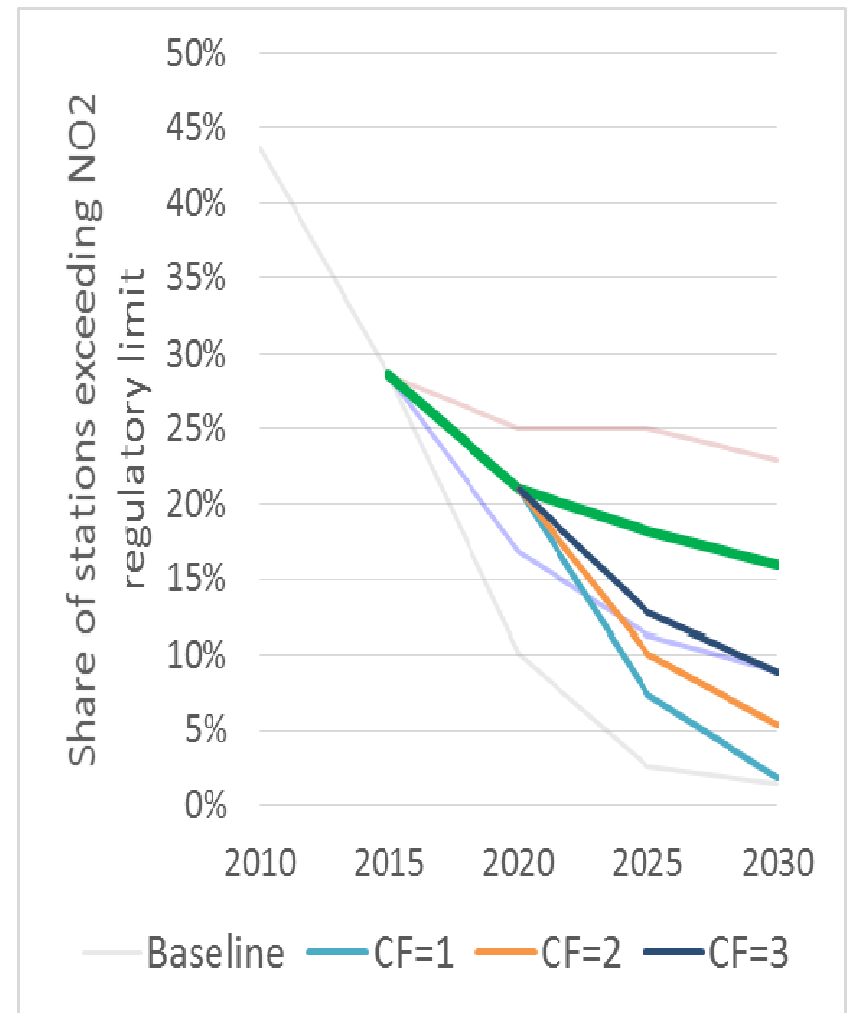
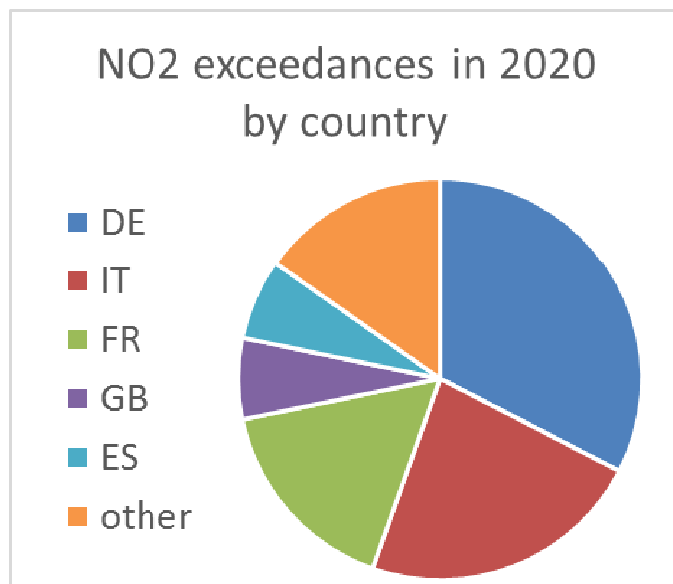
- Euro 6 diesel NOx emissions on the road are on average 7 times the limit value
- “Cycle beating” is endemic to meet air pollution limits
- Euro 6 diesel vehicles typically emit more NOx on the road than the Euro 3 limit
- Euro 6 diesel NO_x c x10 gasoline emissions on the road
- **The current system of testing vehicles on a chasis-dyno using the NEDC cycle is not fit for purpose and discredited**

Based upon ICCT, 2013

Ambitious Conformity Factors are needed to address NO₂ exceedances

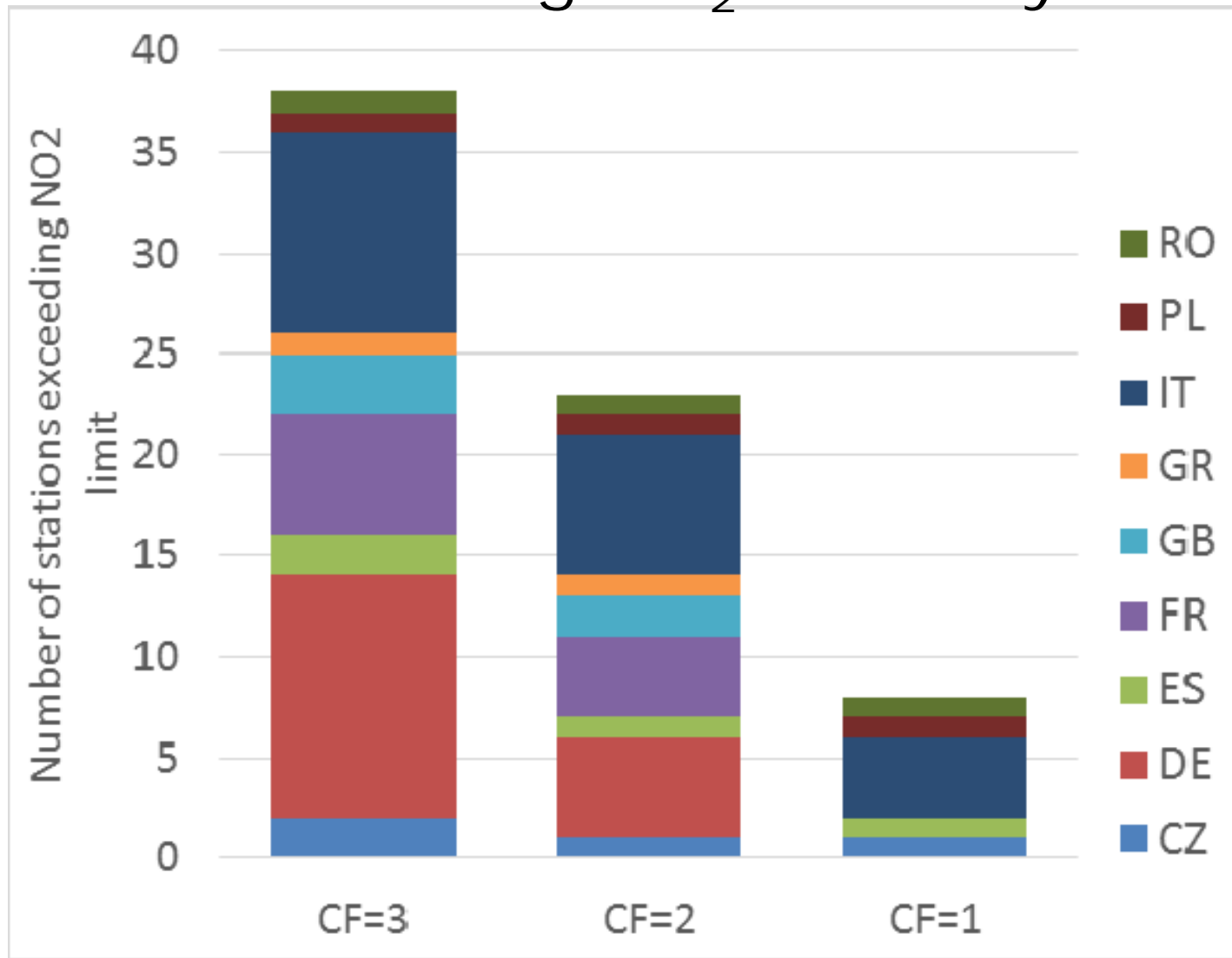
T&E reanalysed IIASA data to examine the impact of introducing different low conformity factors from 2020:

- 15% of sites exceed in 2030 without RDE
- Even with a CF = 1 (in 2020) 2% of stations still exceed in 2030
- With a CF = 2 the number of exceedances more than doubles
- With a CH = 3 10% of sites exceed in 2025



Source: Elaborated from IIASA GAINS results

CF=1 reduces by x5 the number of countries and sites exceeding NO₂ limits by 2030

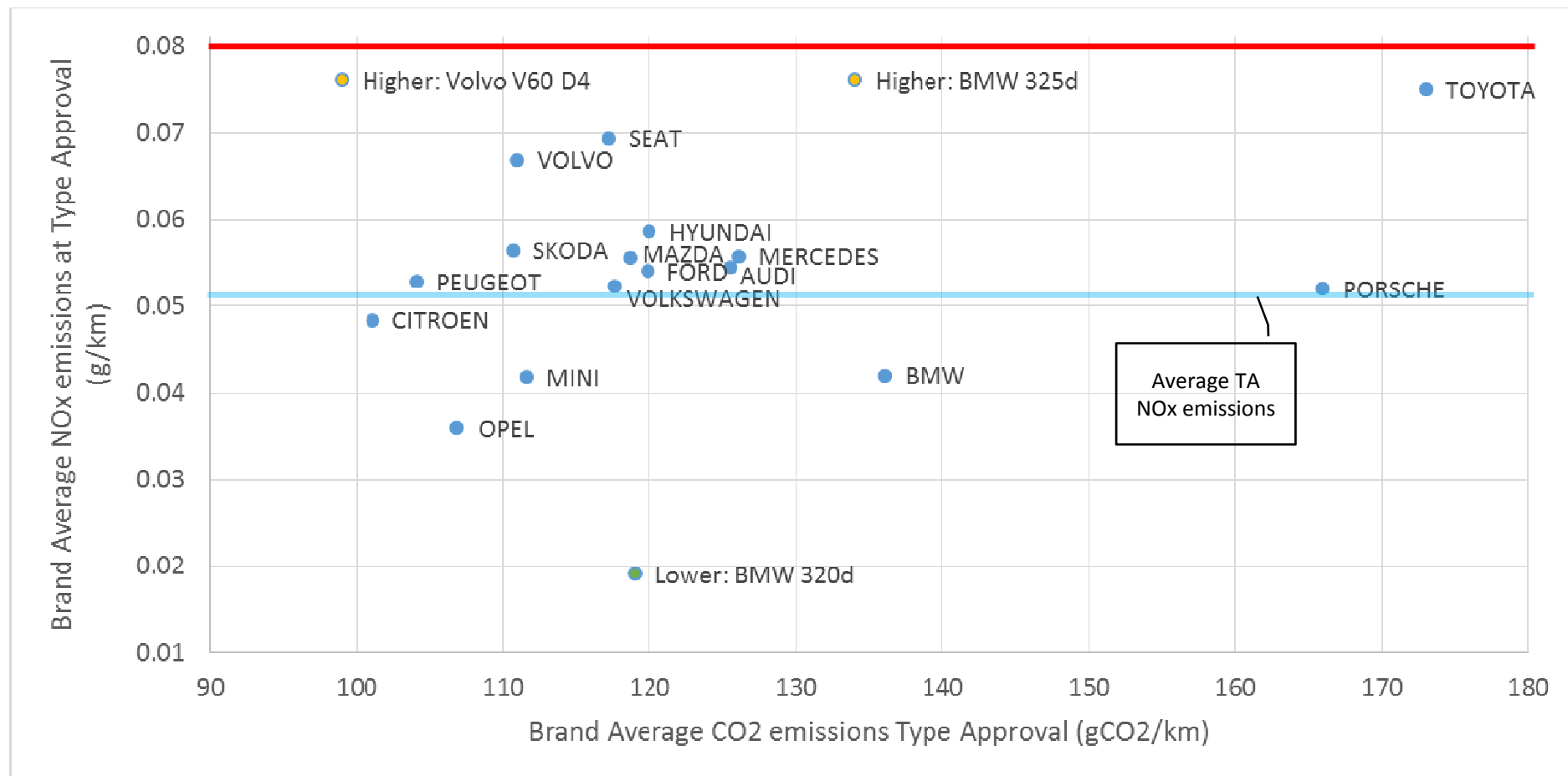


A two step introduction of conformity factors is a pragmatic way forward

NOx	CF = 1.5	CF = 1
New Type Approvals	9/2017	9/2019
All Registrations	9/2018	9/2020
End of series extension	9/2019	9/2021

- PEMS testing for all pollutants, gasoline and diesel cars
- PN limits to commence from 2017 with the same timetable for introduction
- Inclusion of cold start and regeneration factor
- Publicly available data during monitoring phase
- Member States should support the German compromise on the testing methodology at TCMV in May

Average type approval of Euro 6 diesels are 50mg/km a CF of 1 includes a significant RDE test margin of tolerance



RDE and WLTP are not the whole answer - a strengthened testing framework is needed to ensure environmental regulations are met on the road

Type approval framework

- European Type Approval Authority with oversight of National Type Approval and Testing Authorities
- OEMs responsible for performance of the vehicle on the road

Type Approval

- Strengthened system of testing under WLTC
- PEMS tests for CO2 and air pollution
- Consistent operation of Type Approval and Testing

Production conformity

- Increased inspection regime including whole vehicle tests
- Performance within 4% of type approval for CO2 and air pollution emissions

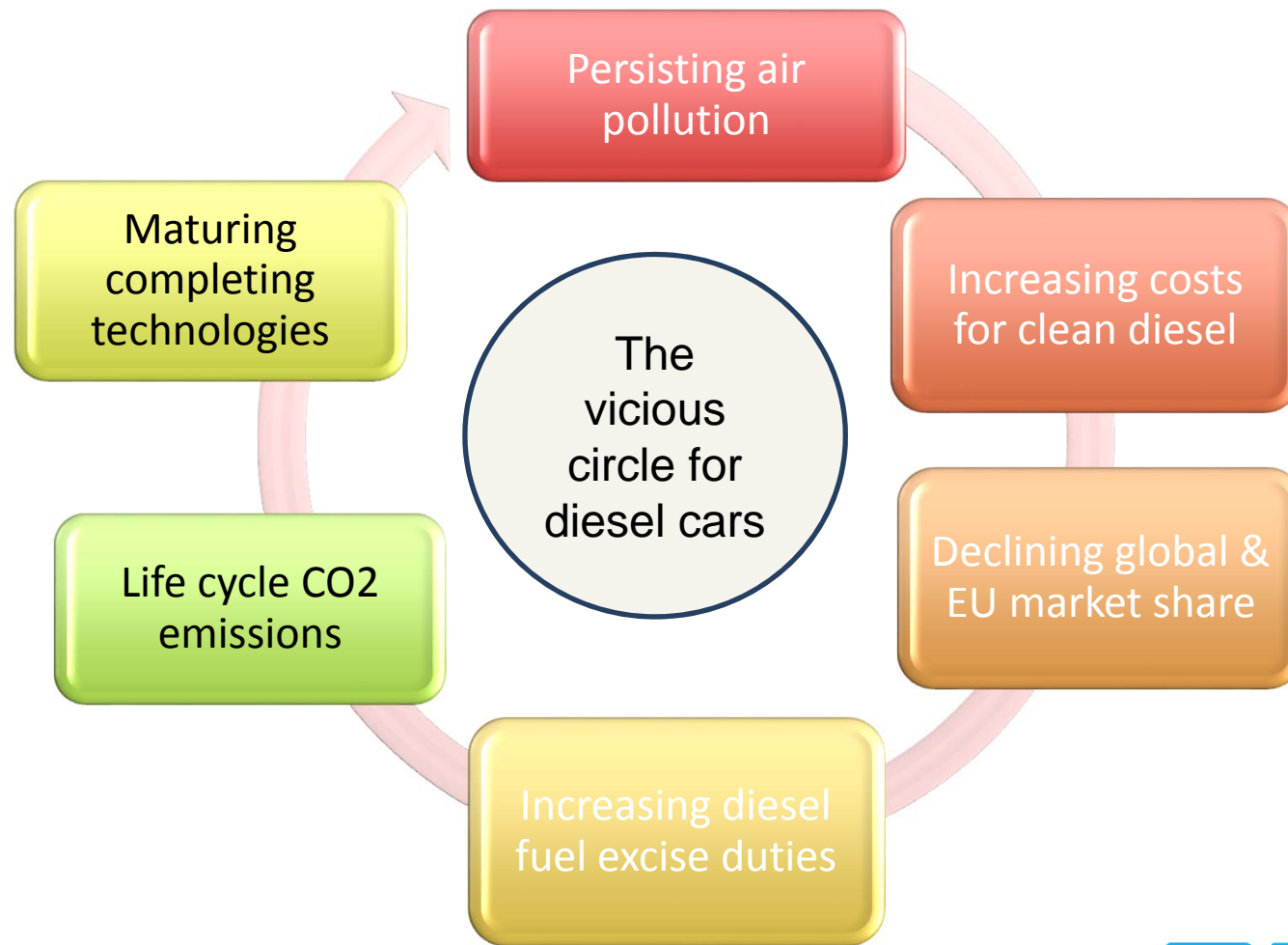
In-service conformity

- On-road vehicle PEMS testing and performance requirements for CO2 and air emissions

Periodic technical inspection

- Avoidance of OBD
- Real-world measurement of vehicle fuel economy

Diesel can be clean – but current diesels are not! Failing to clean up diesel NO_x will accelerate the diesel decline



Key messages ... any questions?

- The societal costs of diesel exhaust is shocking
- RDE tests must deliver real world improvements if diesel cars are to continue to be used in cities
- Euro 6 limits will not be effectively enforced until >10 years after their introduction.
- A diesel NOx limit of:
 - 120g/km should apply from 9/2017
 - 80mg/km from 9/2019

23 ?

The number of EU citizens
dying as a result of air
pollution during this
presentation