## Heavy-duty vehicle fuel efficiency potential in the

## Dr. Felipe Rodríguez ICCT

Von CO2-Grenzwerten bis zur Oberleitung: Wohin steuert der klimafreundliche Lkw?

Berlin, 23.03.2017

EU



## Key messages

1. What is the current situation in the EU?

- In the EU 45% of on road CO<sub>2</sub> emissions are projected to come from HDVs in 2030
- Tractor trailers account for ~70% of truck CO<sub>2</sub> emissions
- 2. What is the potential for long-haul tractor trailers?
  - 28% in the 2025 timeframe and 43% in the 2030 timeframe

icct THE INTERNATIONAL COUNCIL ON Clean Transportation

## What is the current situation in the EU?



# 45% of $CO_2$ emissions from on-road sources is projected to come from HDVs in the EU



THE INTERNATIONAL COUNCIL ON Clean Transportation

Muncrief, R., & Sharpe, B. (2015). *Overview of the heavy-duty vehicle market and CO2 emissions in the European Union*. International Council on Clean Transportation. Retrieved from http://www.theicct.org/overview-heavy-duty-vehicle-market-and-co2-emissions-european-union

#### Tractor trailers account for $\sim 70\%$ of CO<sub>2</sub> emissions



# What is the potential for long-haul tractor trailers?



## Technology penetration in trucks over 16 tonnes



Clean Transportation

Rodriguez, F., Muncrief, R., Delgado, O. & Baldino, C. (**In publication process**). Market Penetration of Fuel Efficiency Technologies for Heavy-Duty Vehicles in the EU, US and China. **ICCT.** 

7

#### 4x2, tractor trucks — baseline

Cycle	Payload [t]	FC [l/100 km]
Regional	12.9	35.77
Long-haul	19.3	33.56

Value
4C
14.4
25.6
4x2
12.8
350
Euro VI
45
AMT
12
14.93-1.0
2.64
Radia
315/80R22.5
0.52
6
5.5
5.6

icct THE INTERNATIONAL COUNCIL ON Clean Transportation

Delgado, O., Rodriguez, F. & Muncrief, R. (**Under review**). European Heavy-Duty Vehicles – Fuel efficiency technology baseline and potential for the 2020-2030 timeframe . **ICCT.** 

#### **Preliminary results**

#### 4x2, tractor trucks — energy balance



cles

9

- Fuel efficiency technology baseline and potential for the 2020-2030 timeframe . ICCT.

#### **Preliminary results**

#### 4x2, tractor trucks — individual technologies



Fuel consumption reduction in line-haul operation

icct THE INTERNATIONAL COUNCIL ON Clean Transportation

Delgado, O., Rodriguez, F. & Muncrief, R. (**Under review**). European Heavy-Duty Vehicles – Fuel efficiency technology baseline and potential for the 2020-2030 timeframe . **ICCT.** 

#### **Preliminary results**

#### 4x2, tractor trucks —technology packages

Potential fuel consumption reduction from selected tractor-trailer efficiency technologies in the 2020-2030 timeframe over the VECTO long haul cycle



CCT THE INTERNATIONAL COUNCIL ON Clean Transportation

Delgado, O., Rodriguez, F. & Muncrief, R. (**Under review**). European Heavy-Duty Vehicles – Fuel efficiency technology baseline and potential for the 2020-2030 timeframe . **ICCT.** 

#### For more detail, please visit the ICCT website



Felipe Rodriguez f.rodriguez@theicct.org



icct THE INTERNATIONAL COUNCIL ON Clean Transportation