

The Shift to Cleaner Fuels in Africa



CLIMATE &
CLEAN AIR
COALITION
TO REDUCE SHORT-LIVED
CLIMATE POLLUTANTS



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18 December 2023



DISEASES DUE TO:

- O_3
- **PM2.5 AIR POLLUTION**



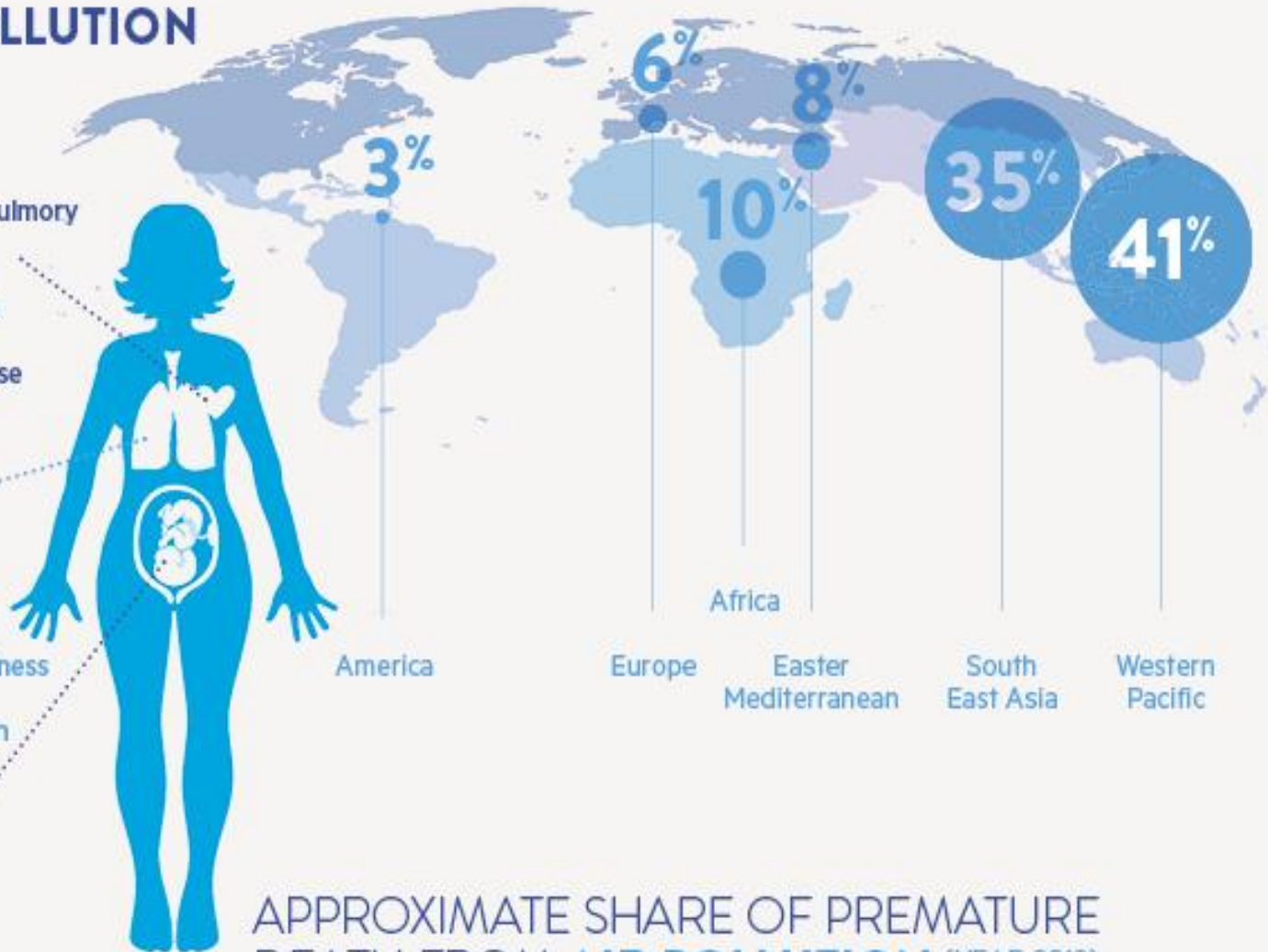
- Chronic obstructive pulmonary disease (COPD)
- Childhood pneumonia
- Ischaemic heart disease
- Stroke



- Asthma
- Breathing problems
airway inflammation
- Chronic respiratory illness
- Reduced lung function



- Low birth weight



APPROXIMATE SHARE OF PREMATURE DEATH FROM **AIR POLLUTION** (YEAR 2012)

Examples - China, Britain, France

France: 2016, car registered before Jan. 1, 1997, are barred from the city's streets from Monday to Friday, from 8 a.m. to 8 p.m. **Air pollution, in large part caused by fine particulate fuel emissions, kills 48,000 people each year in France, some 400,000 in Europe.**

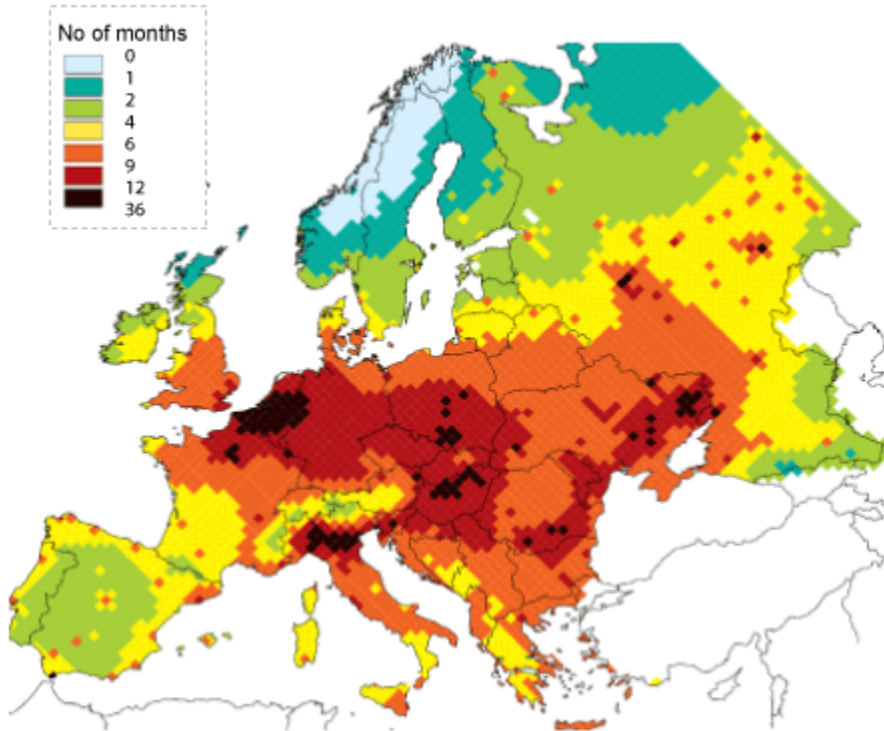
Britain: Every year, around **23,500 Britons** die prematurely from inhaling **NOx emissions** such as nitrogen dioxide (NO₂) particles, emitted by diesel engines. Another **29,000** die from inhaling **sooty particulate matter.**

China: Schools in Beijing close and outdoor construction halted. **Limits placed on car use** and some factories have been ordered to stop operations.



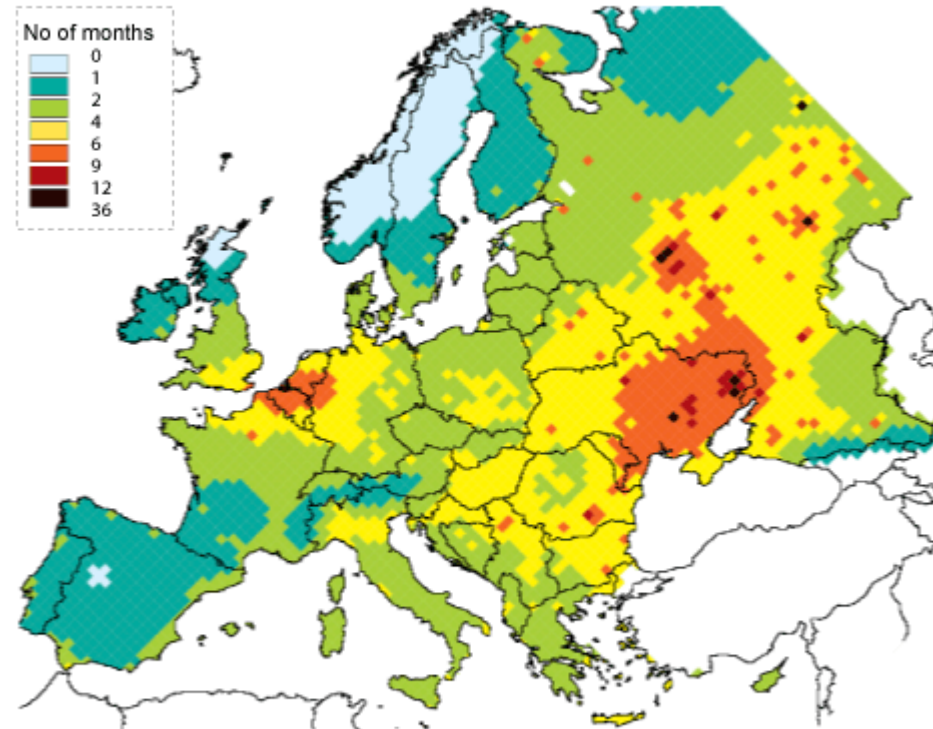
Progress in PM reductions in Europe 2000 - 2020

→ Reduction in life expectancy due to exposure to PM 2,5
Year 2000



SOURCE: Clean Air for Europe Programme / www.environment.no

→ Reduction in life expectancy due to exposure to PM 2,5
Year 2020



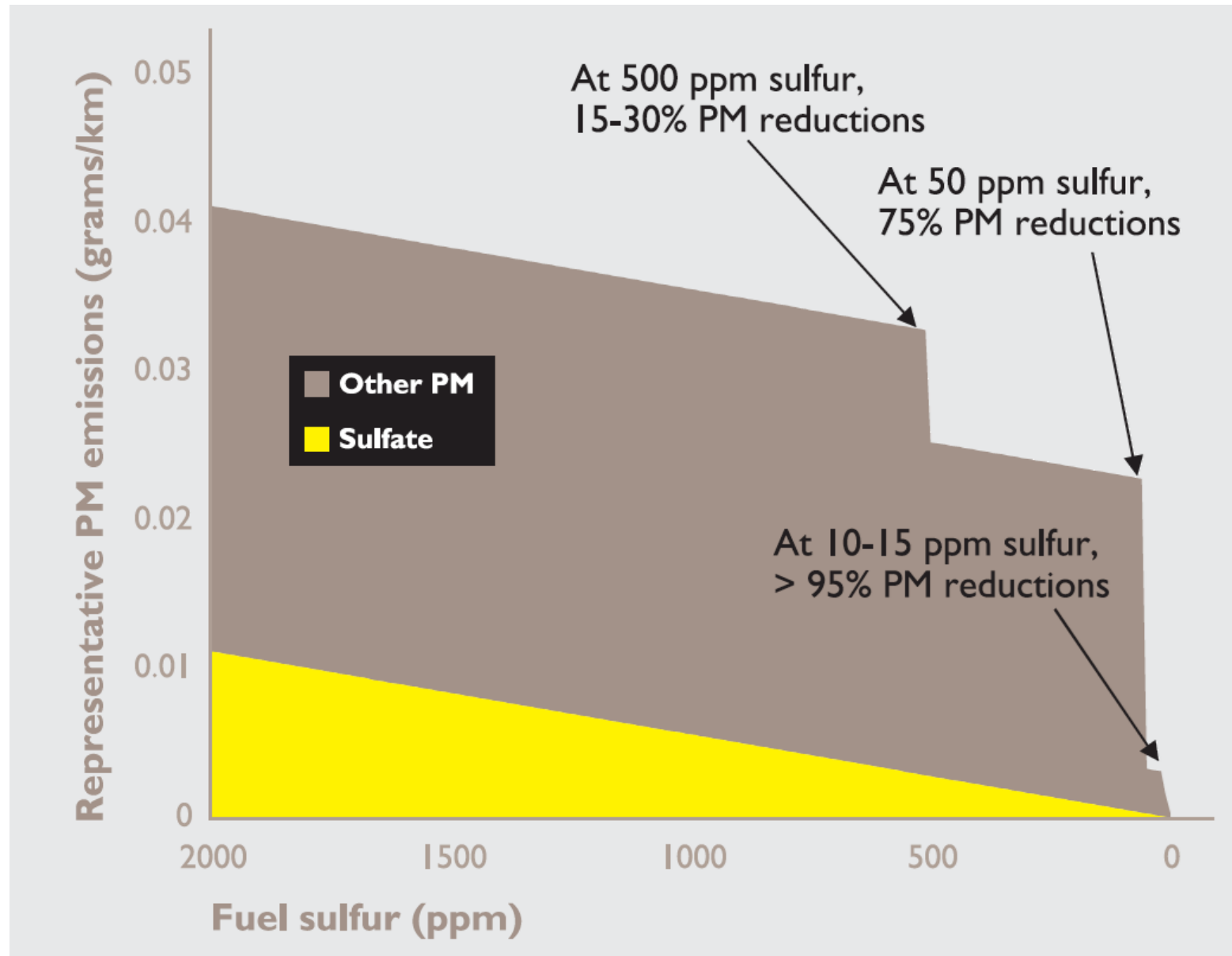
SOURCE: Clean Air for Europe Programme / www.environment.no

Systems Approach

- The systems approach links fuel quality to vehicle emission standards for max vehicle emission reduction benefits
- UNEP and PCFV/CCAC promotes cleaner fuels:
 - *Lead free petrol*
 - *Low sulphur fuels - target is 50 ppm and below fuels*
- Continues to support countries to develop long term roadmaps to strict vehicle emissions standards
 - *Min Euro 4/IV vehicle emission standards*
 - *Support for I & M programs*



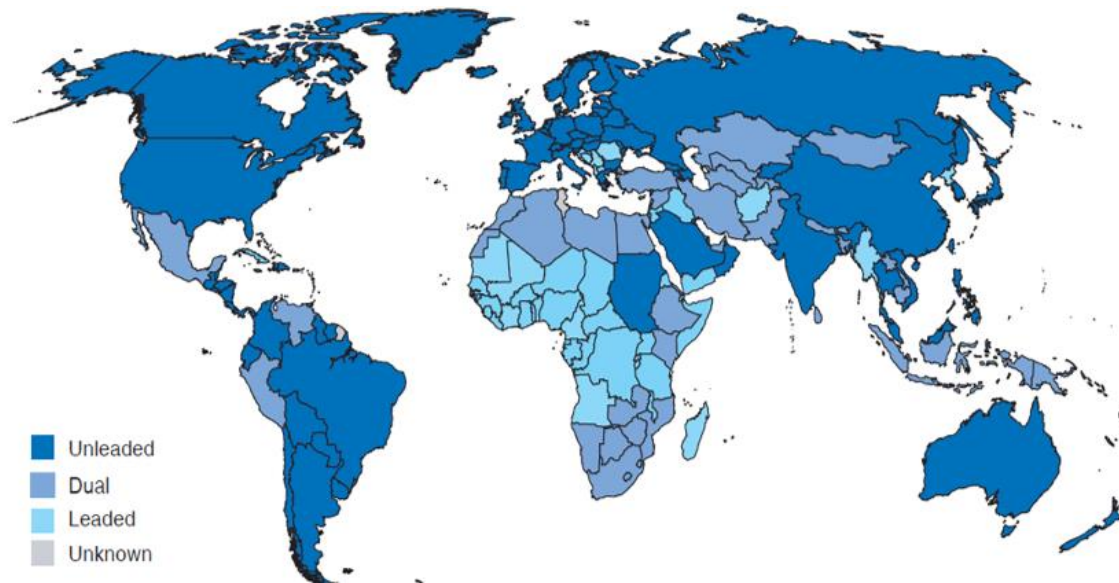
Lower Sulphur Fuels Reduce Emissions - Technology



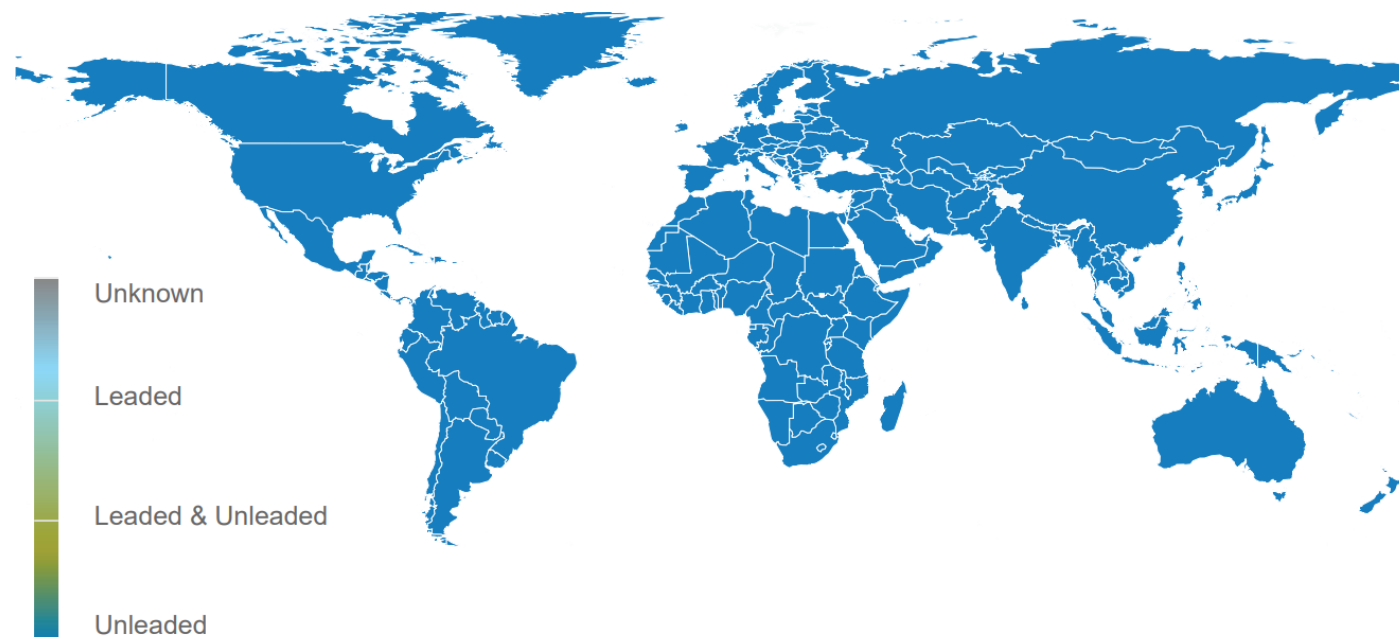
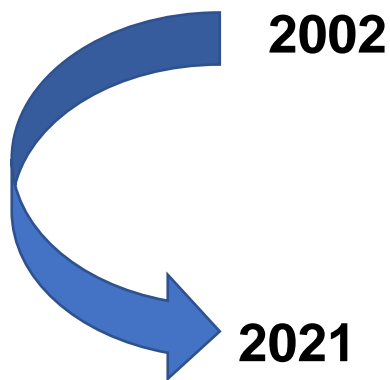
Summary of Euro Stages and Fuel Quality Standards in Europe - Timelines⁶⁷

Vehicle Emissions Standards			Fuel Quality	
Year	Light Duty	Heavy Duty	Year	Main Change in Properties
1980-90	Pre-Euro 1		1976-80	Sulfur and lead gradually reduced
1988		Euro 0	1989	Benzene (5%) and octane start to be regulated
1992		Euro I		
1993	Euro 1		1994	Further Sulfur reduction
1995		Euro II	1996	
1996	Euro 2			
2000	Euro 3	Euro III	2000	Directive 98/70/EC No Lead in gasoline Sulfur in gasoline 150 ppm, in diesel 350 ppm Aromatics, Octane, oxygen, olefins, benzene limits
2005	Euro 4	Euro IV	2005	Sulfur in gasoline and diesel 50 ppm (availability of 10 ppm must be ensured) Aromatics lowered
2008		Euro V		
2009	Euro 5		2009	10 ppm gasoline and diesel
2011			2011	E10 introduced
2013		Euro VI		
2014	Euro 6			

Source: Derived from IFQC

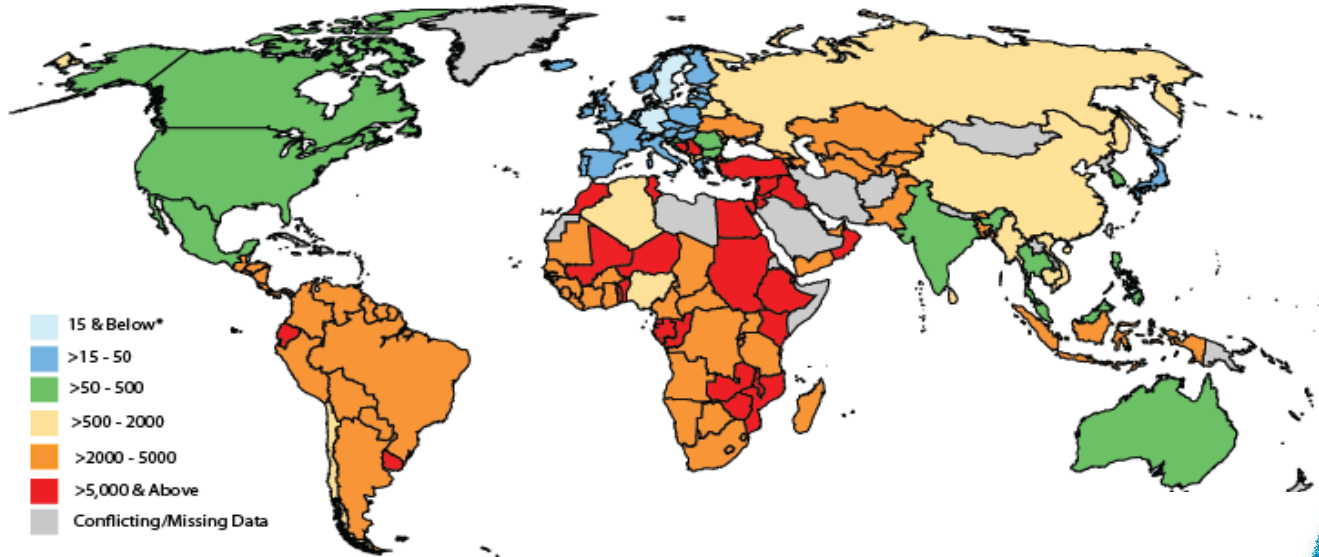


Progress towards Unleaded Petrol





Diesel Fuel Sulphur Levels: Global Status 2005



- 15 & Below*
- >15 - 50
- >50 - 500
- >500 - 2000
- >2000 - 5000
- >5,000 & Above
- Conflicting/Missing Data

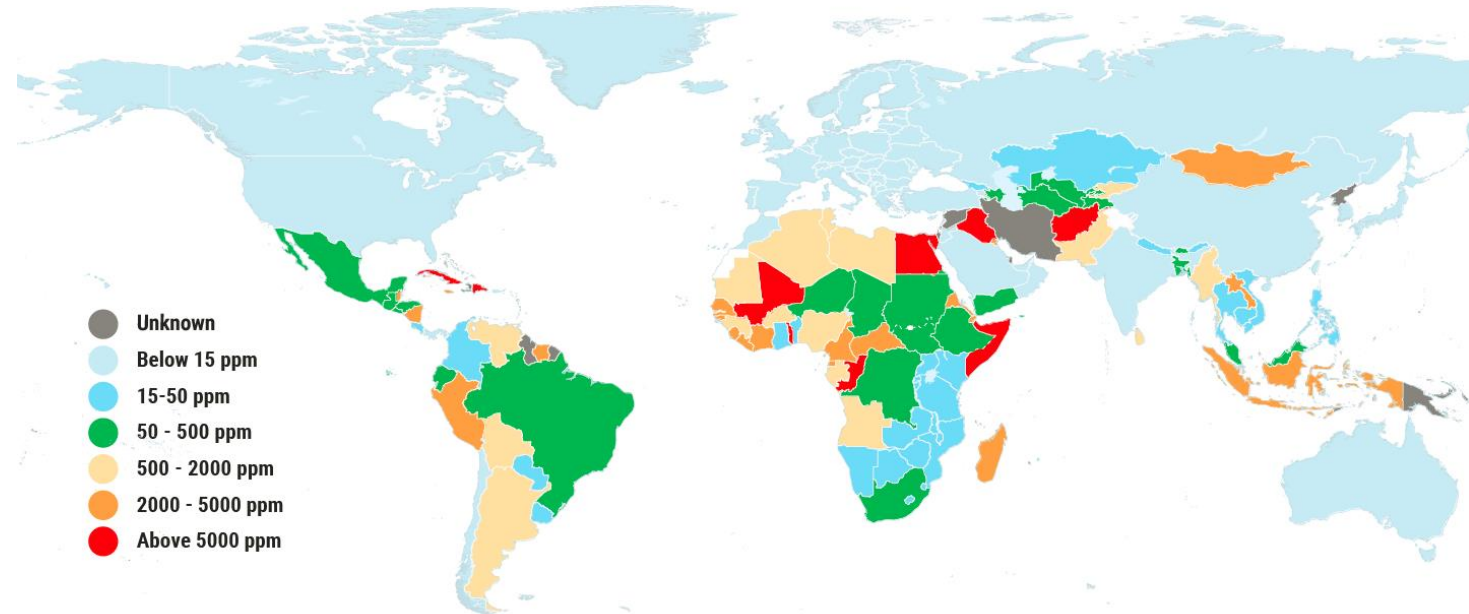
* Information in parts per million (ppm)

2005

Progress towards Low Sulphur Diesel

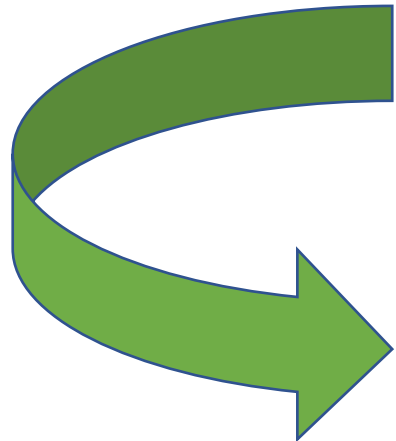


Global Diesel Fuel Sulphur Levels
June 2023

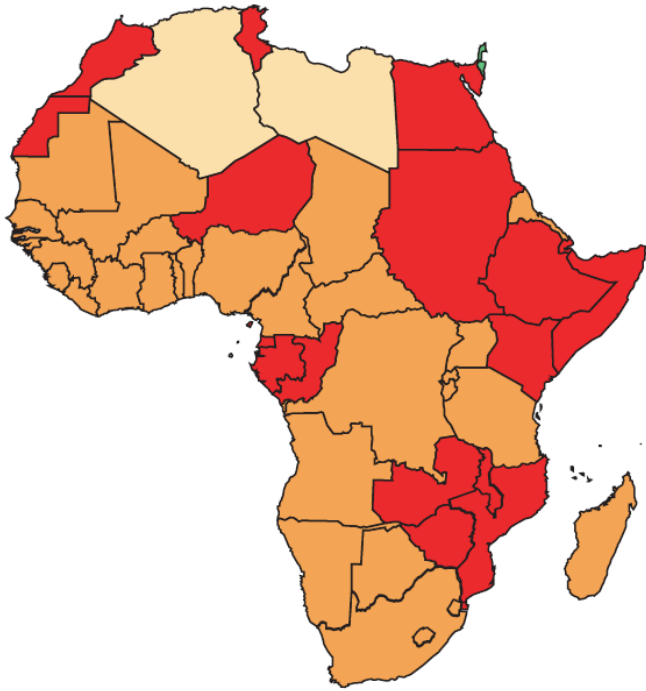


- Unknown
- Below 15 ppm
- 15-50 ppm
- 50 - 500 ppm
- 500 - 2000 ppm
- 2000 - 5000 ppm
- Above 5000 ppm

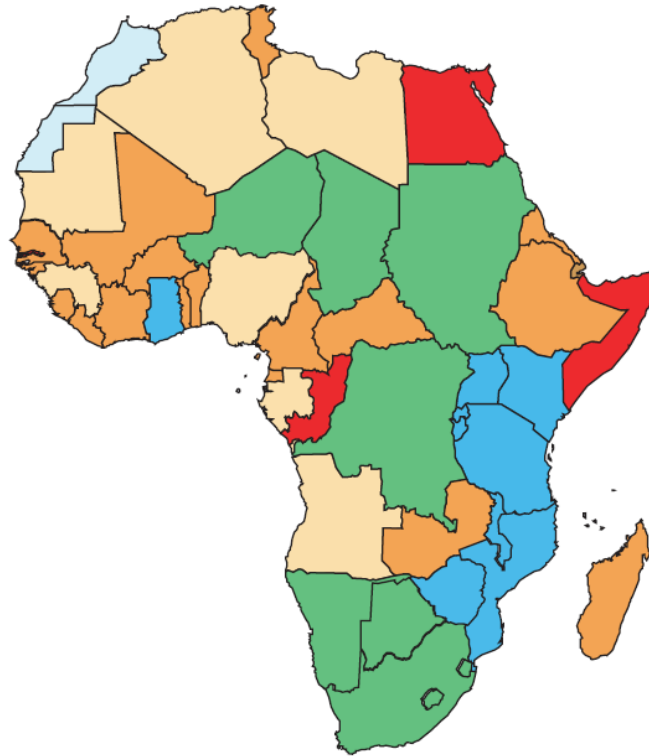
2023



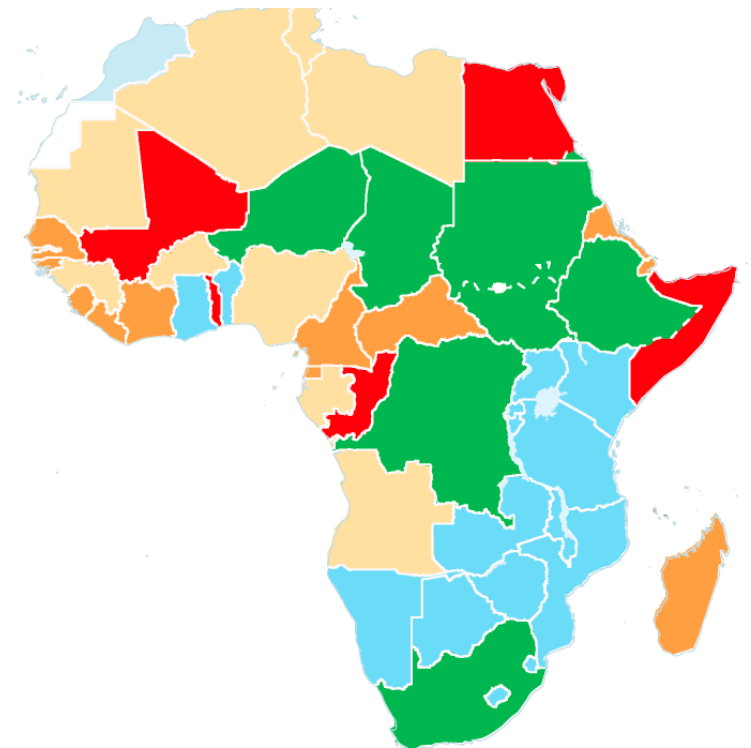
2002



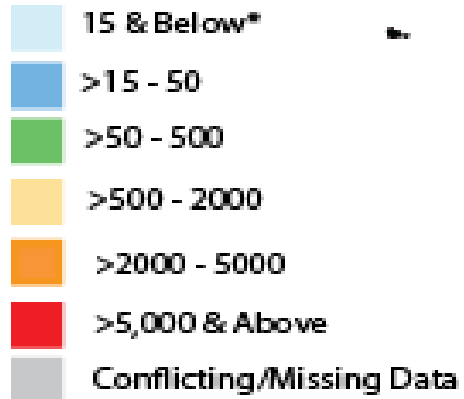
2018



2023



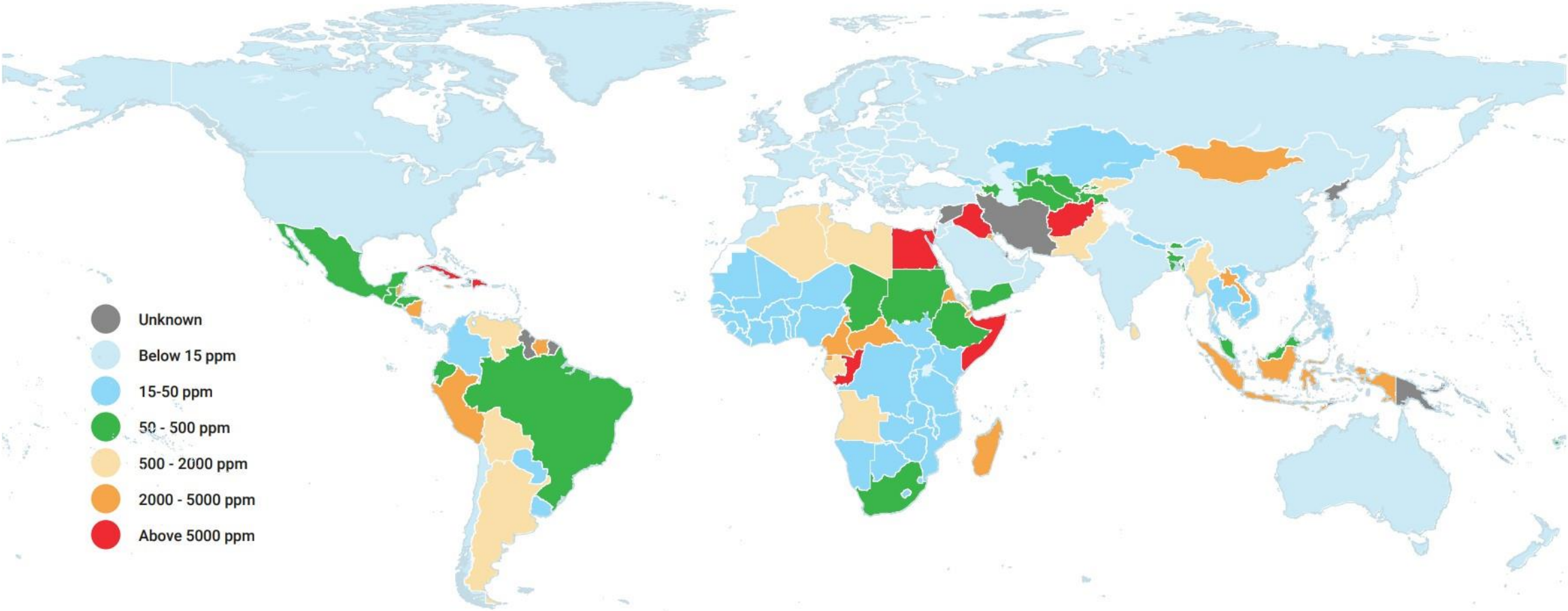
Introduction of low Sulphur Diesel fuels in Africa



Low Sulphur Diesel - based on regional commitments



Global Diesel Fuel Sulphur Levels
June 2023

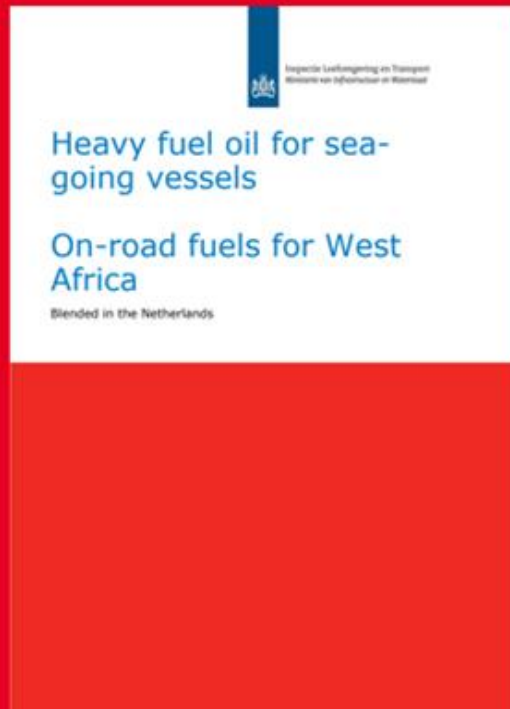


Quality of exported on-road fuels and used vehicles



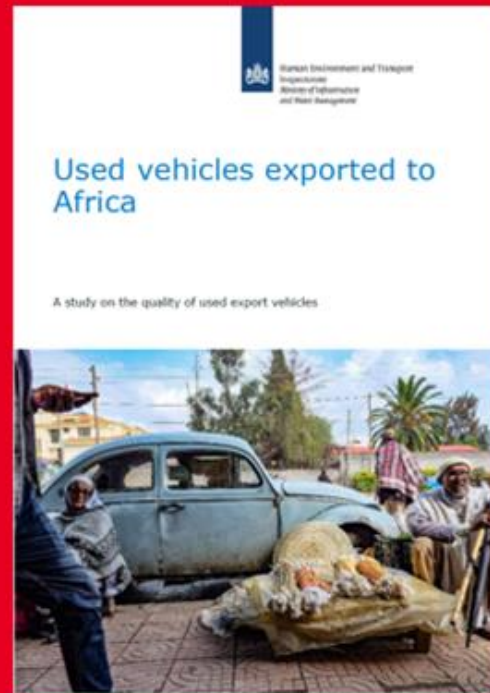
Human Environment and Transport
Inspectorate
Ministry of Infrastructure
and Water Management

2018



[Investigations of the Dutch Inspectorate: heavy fuel oil for sea-going vessels and on-road fuels for West Africa. | Report | Inspectie Leefomgeving en Transport \(ILT\) \(ilent.nl\)](#)

2020



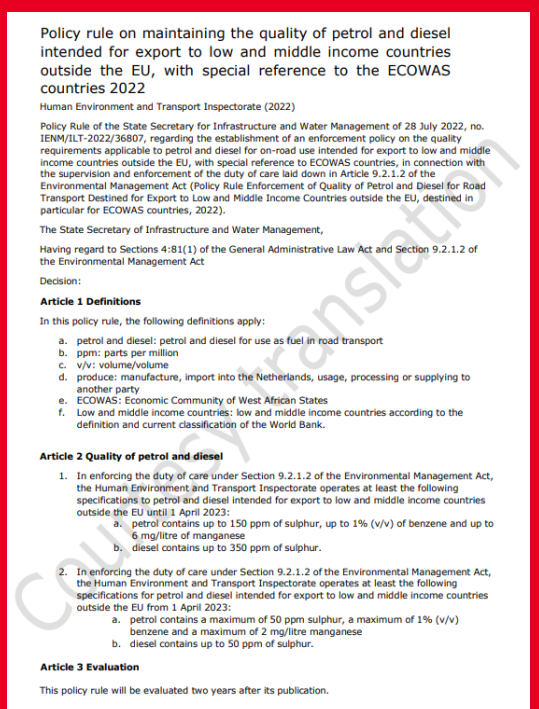
[Rapport - Used vehicles exported to Africa | Rapport | Inspectie Leefomgeving en Transport \(ILT\) \(ilent.nl\)](#)

2021

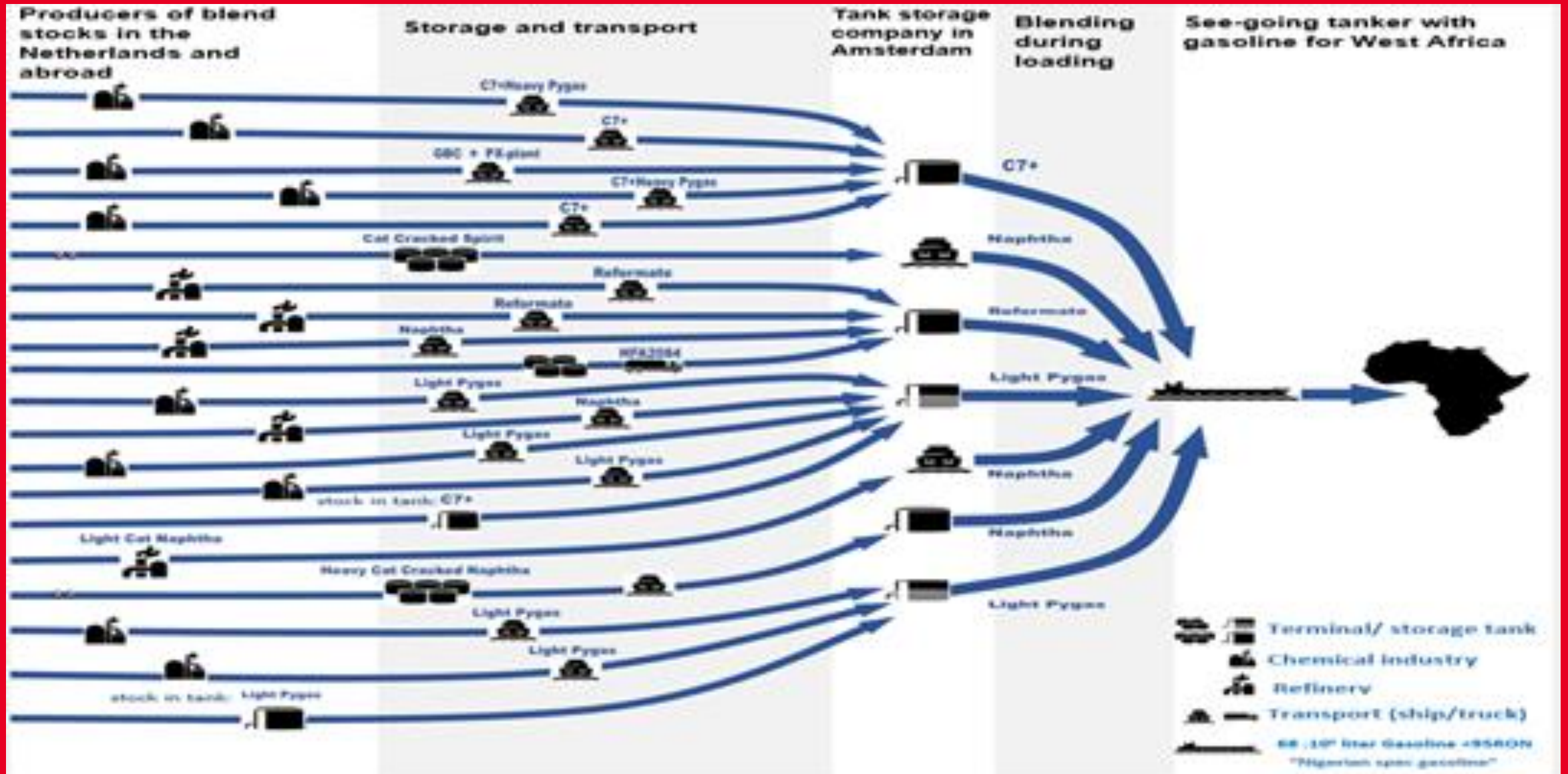


[Petrol fuel quality and its effects on the vehicle technology and the environment. | Report | Inspectie Leefomgeving en Transport \(ILT\) \(ilent.nl\)](#)

2022



[Policy rule on maintaining the quality of petrol and diesel intended for export to low and middle income countries outside the EU, with special reference to the ECOWAS countries 2022 | Publication | Inspectie Leefomgeving en Transport \(ILT\) \(ilent.nl\)](#)



- Our website www.english.ilent.nl
- Contact with the team: qualityexportfuels@ilent.nl

Low Sulphur activities in Southern Africa

- Together with SADC Secretariat, 4 sub-regional workshops have been held in person
 - Johannesburg Sub-regional outcomes – July 2015
 - The proposed timeframe for low sulphur diesel fuels by importing countries is:
 - a. 50 ppm by January 2016; and
 - b. 10-15 ppm by 2020;
 - The proposed timeframe for low sulphur diesel fuels for refining countries is 50 ppm by 2020;
 - Botswana SACU Outcomes – Aug 2016
 - Mozambique Outcomes – Nov 2016
 - South Africa – June 2019
 - March 2023 – virtual
- National level sensitization supported
- SADCSTAN regional harmonization of fuel standards



Next steps to sustainable transport

Cleaner fuels and matching vehicle standards (Euro 4 and above)



Clean soot free buses esp for BRTs/ Green Freight (Euro IV and above)



Fuel economy vehicles/ electric vehicles



NMT policies and infrastructure



Thank you



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