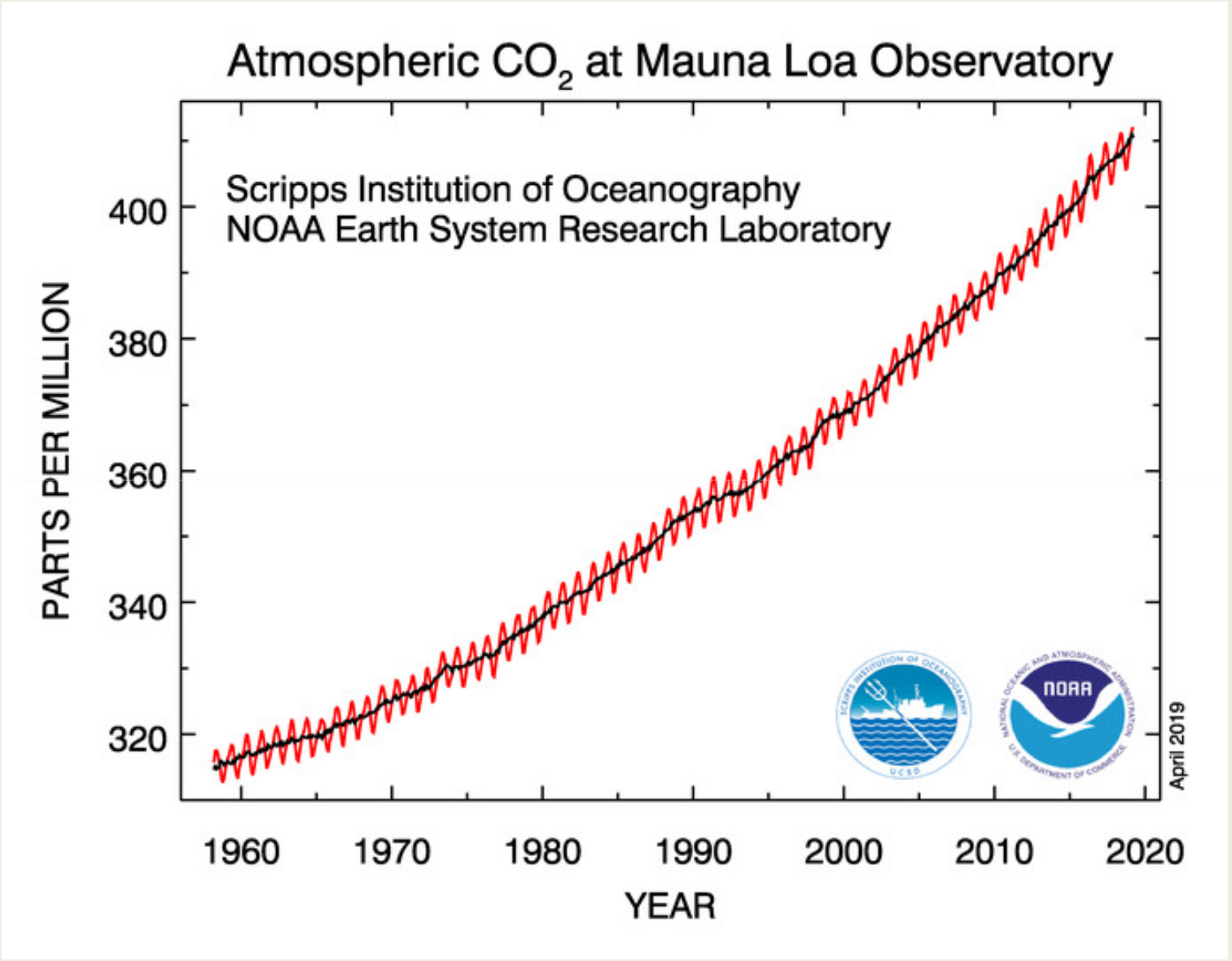
“POTENTIAL FOR GAS IN TRANSPORTATION IN SOUTH AMERICA”

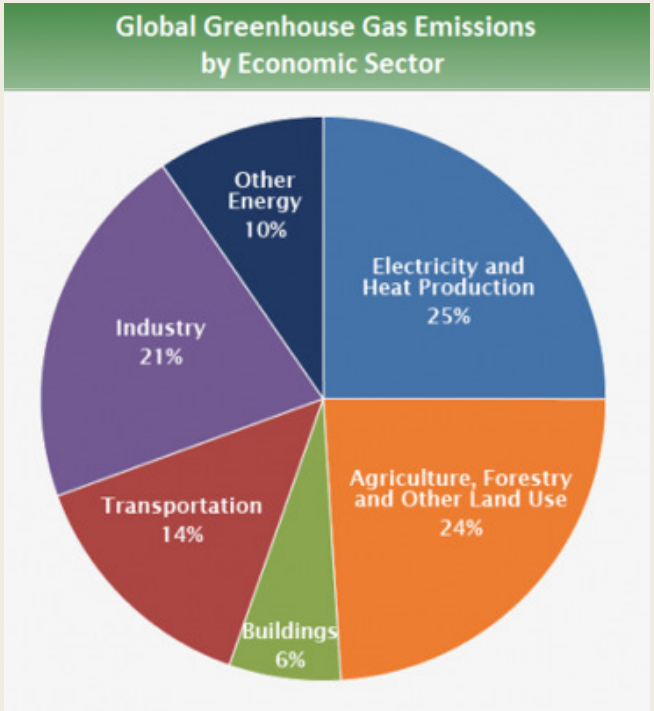
International Gas Union - EXC Workshop – Santiago

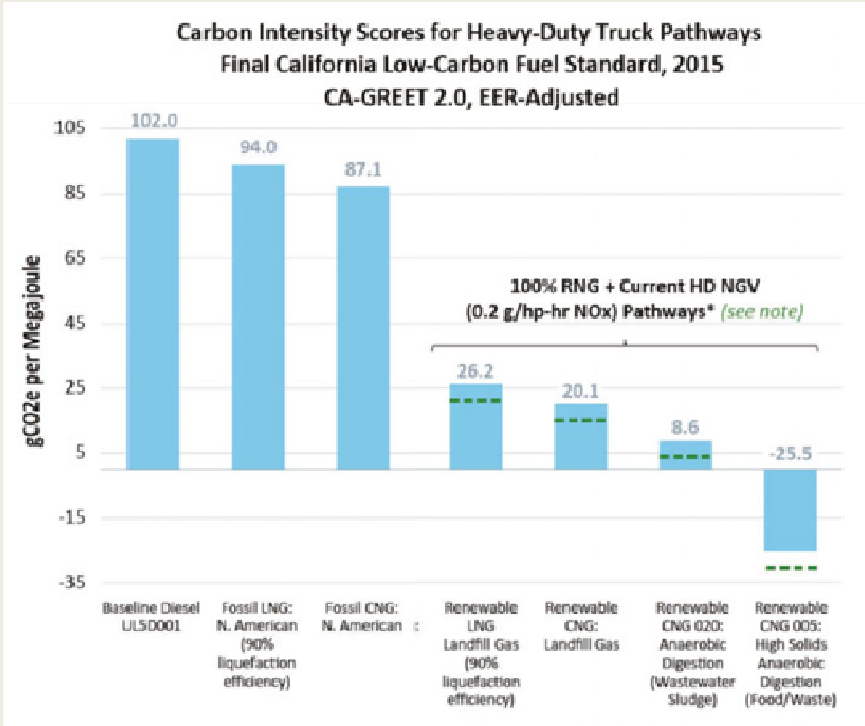
Thursday, 25 April 2019



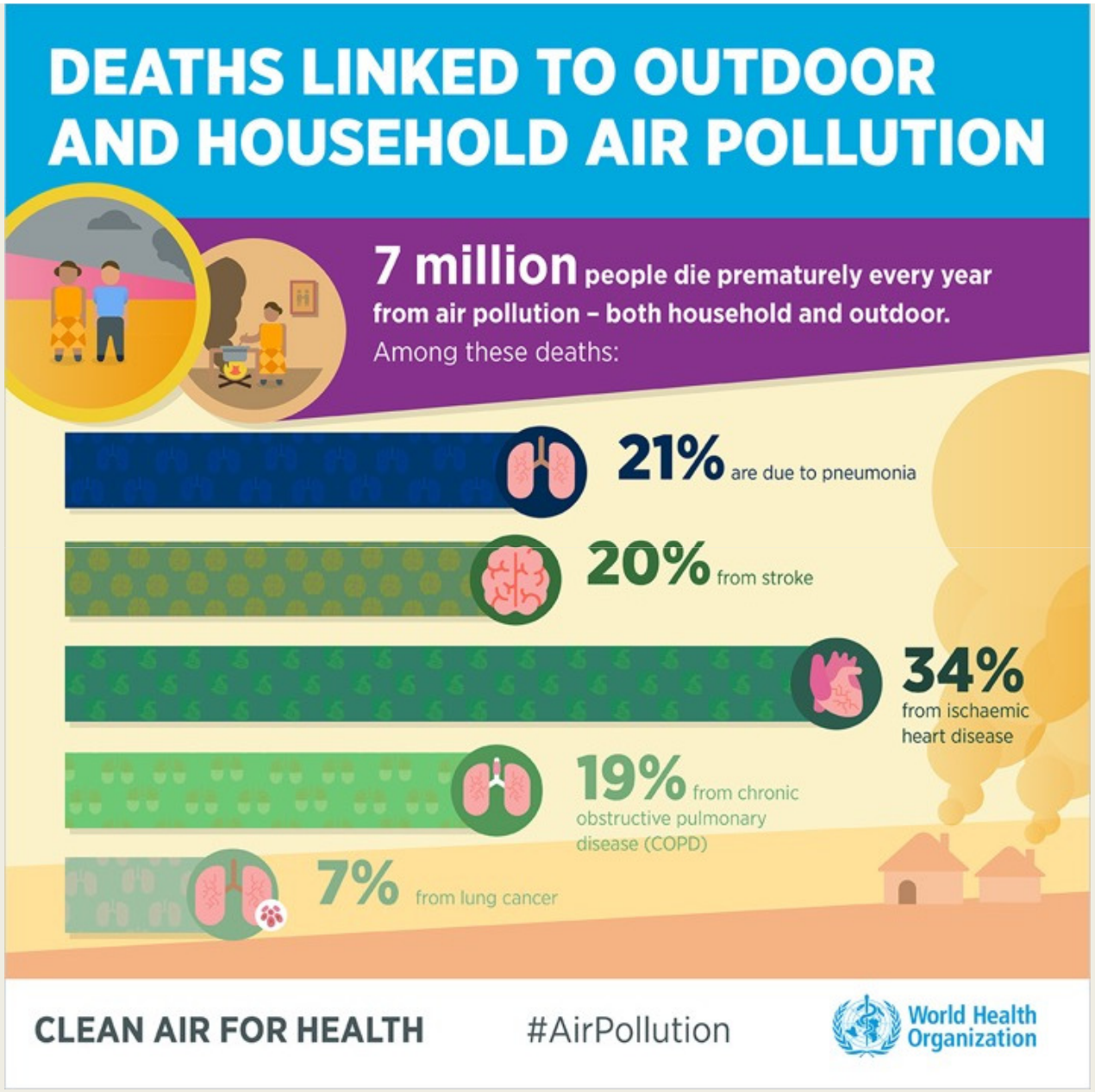
Environmental crisis at a global level

- *"The transportation sector generates a large share of greenhouse gas emissions. Greenhouse gas emissions from transportation primarily come from burning fossil fuel for our cars, trucks, ships, trains, and planes. Over 90 percent of the fuel used for transportation is petroleum based, which includes primarily gasoline and diesel." (U.S. EPA).*
- *"The Well-to-Wheel GHG emissions for Heavy-Duty Natural Gas Vehicles are 16 % lower than the Diesel baseline (Thinkstep – NGVAE)*

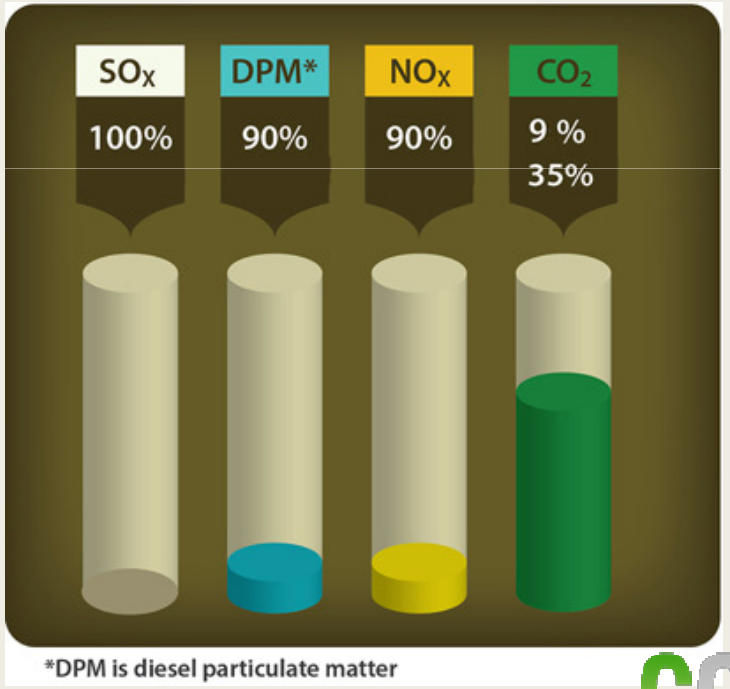




Environmental crisis at a local level


DEATHS LINKED TO OUTDOOR AND HOUSEHOLD AIR POLLUTION
7 million people die prematurely every year from air pollution – both household and outdoor.
Among these deaths:
21% are due to pneumonia
20% from stroke
34% from ischaemic heart disease
19% from chronic obstructive pulmonary disease (COPD)
7% from lung cancer
CLEAN AIR FOR HEALTH
#AirPollution
World Health Organization

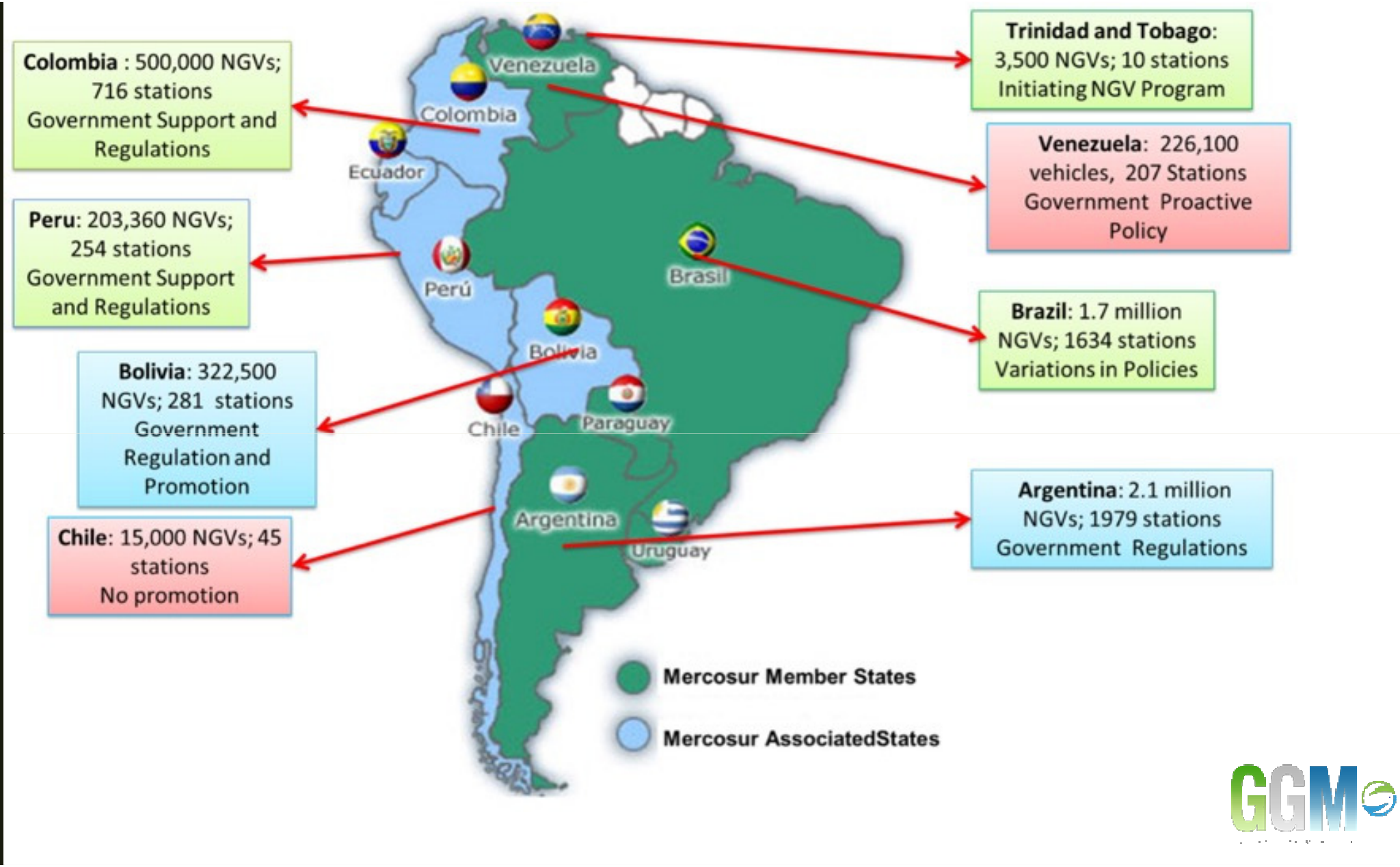
- *“Ambient air pollution is the leading environmental health risk factor globally, resulting in nearly 3.5 million premature deaths in 2017 from stroke, ischemic heart disease, chronic obstructive pulmonary disease, lung cancer, lower respiratory infections, and diabetes. The global transportation sector is a major source of this health burden through its contribution to elevated fine particulate matter (PM2.5), ozone, and nitrogen dioxide concentrations.” (ICCT)*



NG powered transportation

South American gas powered mobility : Current Status

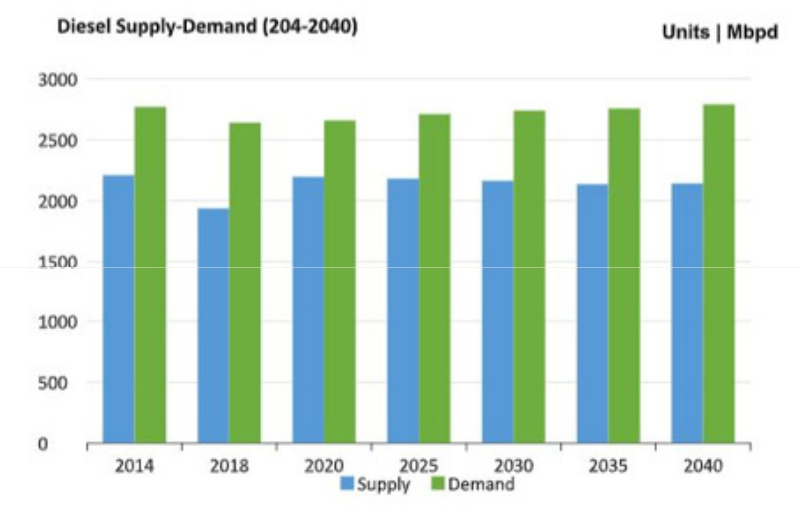
- Mainly CNG
- Mainly light duty & passenger cars
- Colombia: leader in Gas powered public transport on CNG
- LNG slowly starting (Peru, Argentina, Brazil)
- Marine use: practically zero (LNG ferry Buenos Aires-Montevideo)
- OEMs are ready to invest and promote Natural Gas in trucks and buses in South America (IVECO and SCANIA)


Colombia : 500,000 NGVs; 716 stations Government Support and Regulations
Peru: 203,360 NGVs; 254 stations Government Support and Regulations
Bolivia: 322,500 NGVs; 281 stations Government Regulation and Promotion
Chile: 15,000 NGVs; 45 stations No promotion
Trinidad and Tobago: 3,500 NGVs; 10 stations Initiating NGV Program
Venezuela: 226,100 vehicles, 207 Stations Government Proactive Policy
Brazil: 1.7 million NGVs; 1634 stations Variations in Policies
Argentina: 2.1 million NGVs; 1979 stations Government Regulations
Venezuela
Colombia
Ecuador
Perú
Brasil
Bolivia
Chile
Paraguay
Argentina
Uruguay
Mercosur Member States
Mercosur AssociatedStates

South American gas powered mobility : Potential benefits

- Public Transport on CNG: Easy implementation with huge benefits for population, users and government (reduction of diesel-fuel subsidies). (e.g. Buenos Aires has 18000 buses which receive U$D 8000 per unit per year).
- Urban Transport on CNG: Air quality improvement and economic benefits for fleets
- Heavy transport on LNG: Cost reduction for fleets, GHG reductions and air quality improvement
- LNG for marine use: compliance of IMO sulphur cap, GHG reduction, air quality improvement
- Reduction of diesel imports (Argentina in 2016 would have saved 356 million USD by replacing diesel imports with LNG)

South American gas powered mobility : Potential



Dependency on imported diesel provides a big opportunity for Natural Gas

Road freight transportation: between 70% and 95% of total goods volume is transported by road

Southern Cone Blue Corridor proposal

Conclusions

- Huge potential for gasification of heavy duty transport.
- Potential benefits for the population in terms of costs and air quality
- Possibility of regional integration
- Challenge: need for political decision and reduction of regulatory restraints

Muchas Gracias

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