

# Air pollution mitigation strategies in developing cities

*Accelerating a technology shift in urban transport*

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# A common approach: carrots, sticks & sermons



- Taxes
- Fiscal incentives for cleaner technologies
- Subsidies for technology changes



- Stricter fossil fuel & emission standards
- Technical Monitoring and inspection of cars
- Vehicle restricted areas
- Low emission zones
- Driving restrictions (hoy no circula, pico y placa, etc)



- Public awareness & communication campaigns
- Labelling

## Santiago Respira



- Economic incentives for cleaner cars)



- Stricter standards, Euro VI
- Monitoring & inspection of vehicles
- LEZ restrictions



- Labelling
- Mobile apps for public awareness



## Aburrá Valley Decontamination Plan

- Incentives for cleaner fuel vehicles
- Bus dismantling and disposal programme – new ones N Gas

- Stricter emission standards
- Monitoring and inspection of vehicles
- Driving restrictions: “Pico y Placa”



# Electric mobility: Opportunities for Latin America

*UN Environment Publication*



- Sumarizes economic, social and climate benefits of electric mobility
- Analyses global and regional market
- Includes policies, incentives and experiences
- Proposes a roadmap to accelerate the transition to e-mobility in Latin America



# Electric public transport: a priority for Latin America

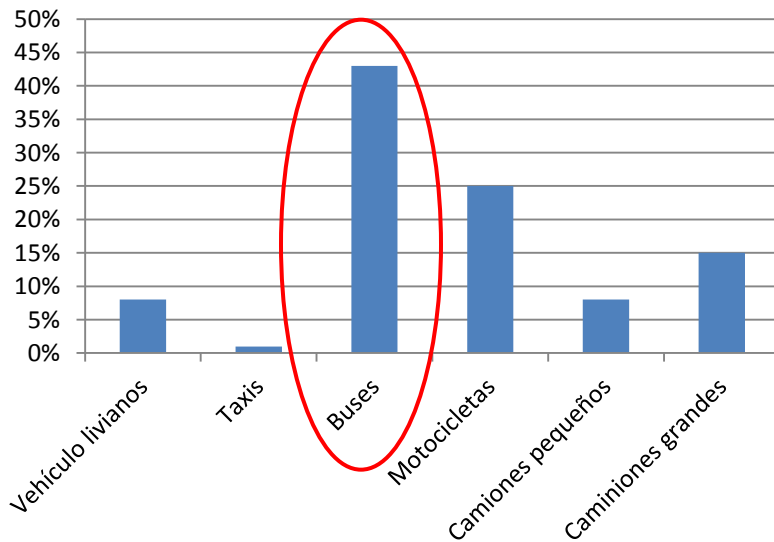




# Benefits of electric buses

- Important amounts of pollution in cities are due to HDV & buses
- Price stability: electricity cost increases less than diesel cost
- Routes predictability, intensive use and closeness to people and zero noise
- It could drive electrification of all forms of transport

## Particulate Matter 2.5

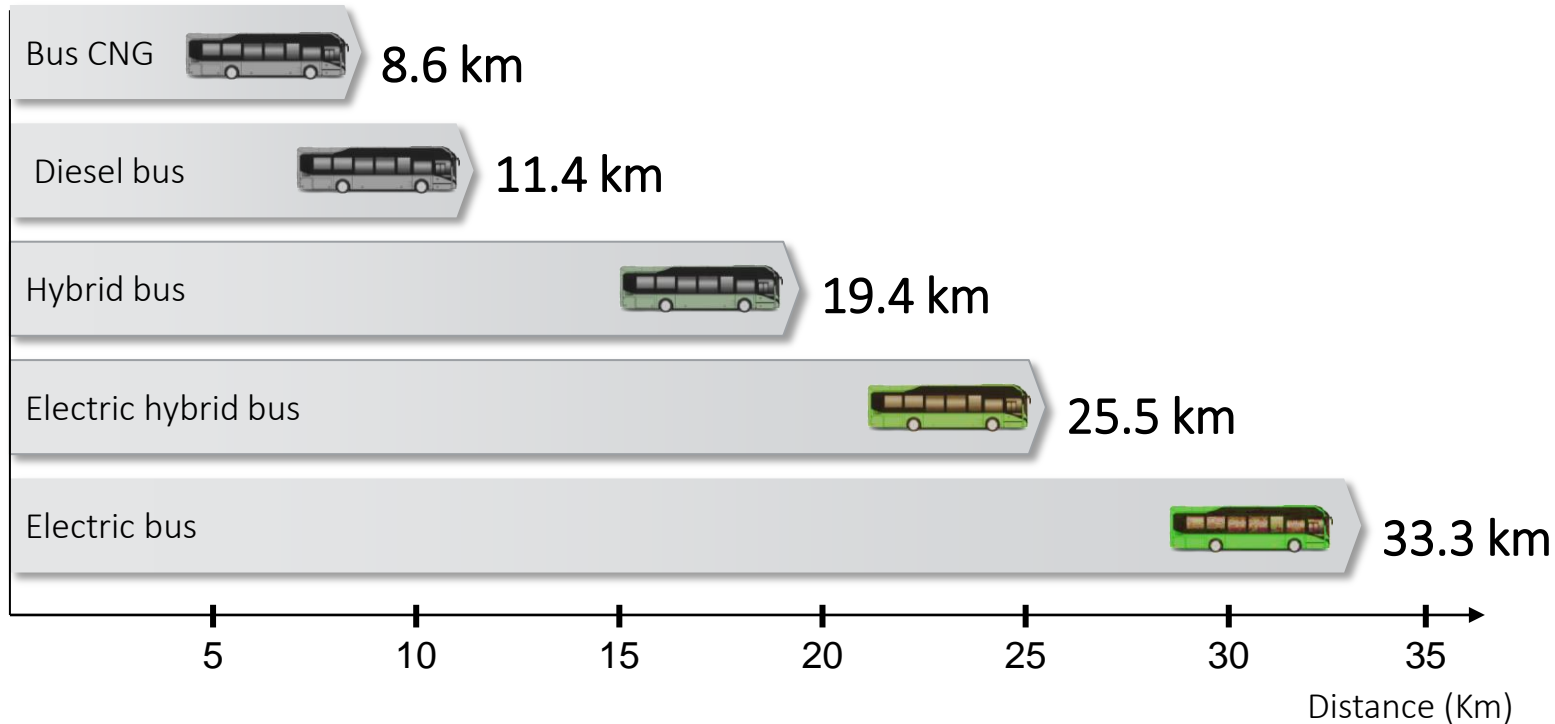


Clean Air Institute (for Latin America), 2014



# Bus efficiency scale: ...and the winner is?

- Use of energy/ km traveled: What is the travel distance of 5 liters of diesel?
- Mexico City options

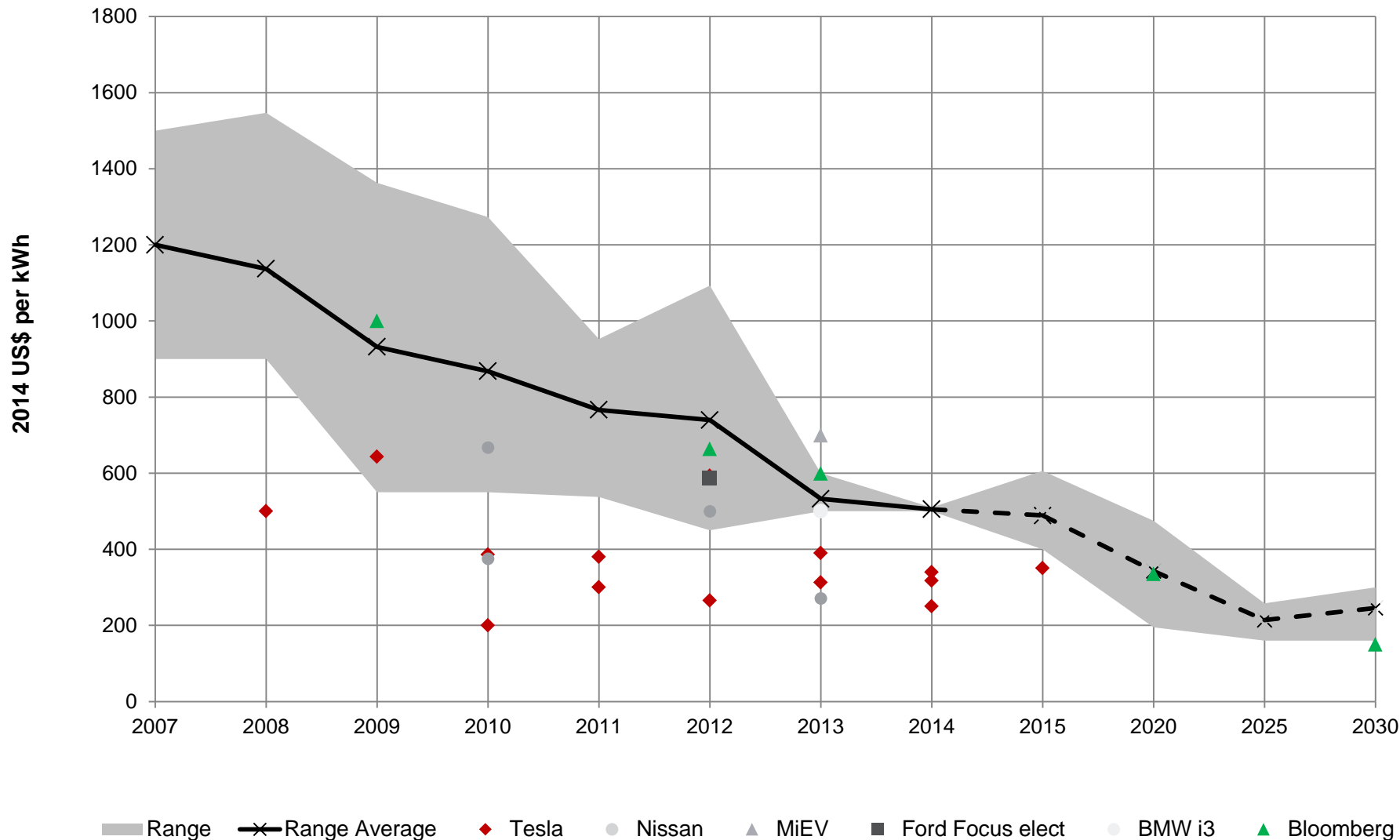


Fuente: Volvo, 2016

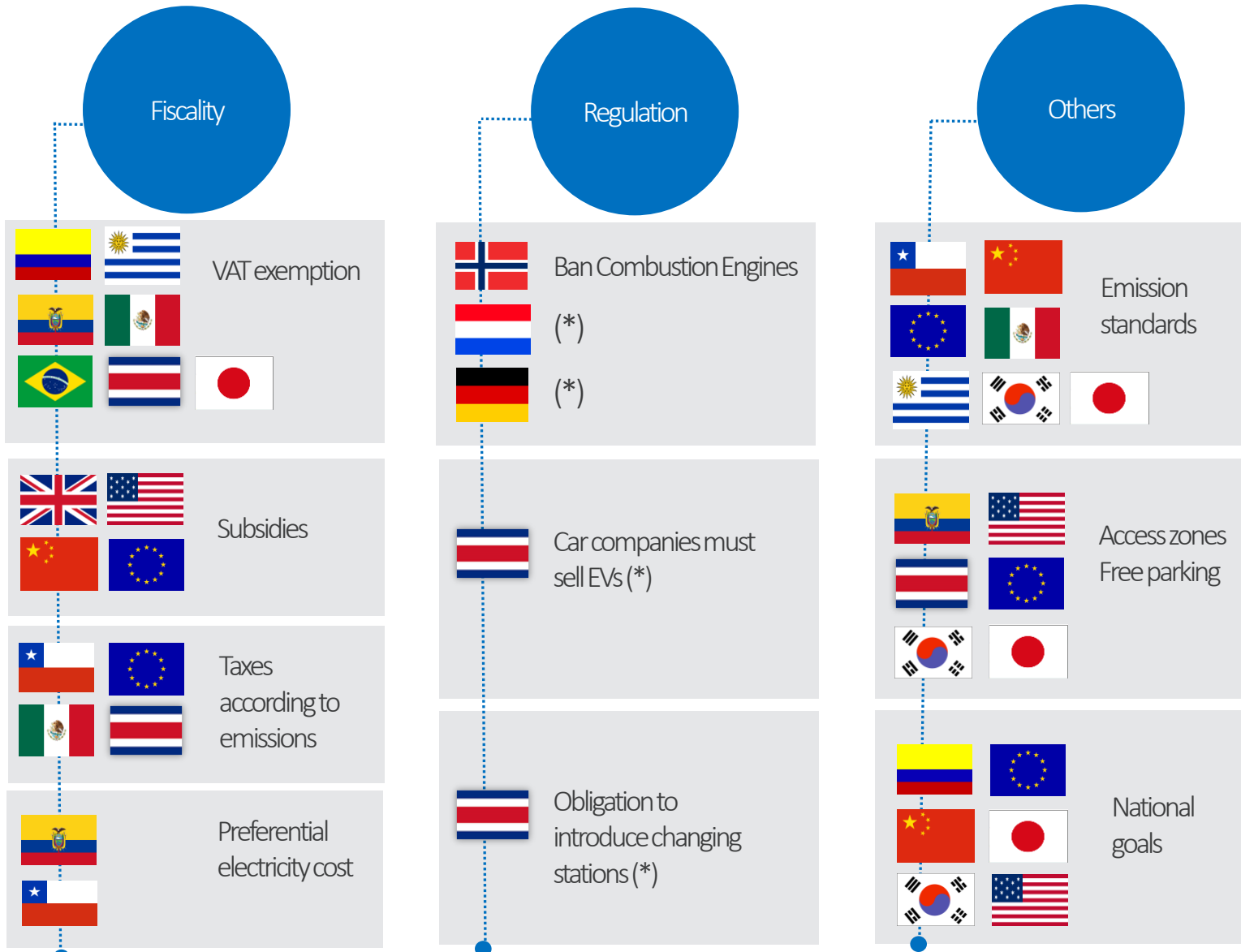




# Constant reduction in battery cost: 14% annually



# Key policies used to accelerate e-mobility



# Roadmap to accelerate e-Mobility in Latin America

From: *Opportunities to Accelerate Electric Mobility in Latin America, UN Environment, 2016*



Important gaps remain.  
Status varies from country  
to country ...

## 1 Accelerate energy efficiency

- Emissions & fuel standards
- Energy labelling
- Emission taxes
- Strengthen testing & enforcement

## 2 Eliminate market distortions

- Discourage fuel subsidies
- Regulate importation of used vehicles

3

## Incentivize EVs

- Supporting policies/laws
- Fiscal incentives
- Tax breaks/ import breaks

4

## Develop EV infrastructure

- Charging stations
- Differentiated tariffs
- Capacity-building
- Public-private innovation platforms
- Pilot projects

Need to focus in parallel to  
steps 1 & 2 to create  
market and regulatory  
conditions



# Before taking action

E-mobility generates great interest but, eBuses need an in-depht evaluation & local adaptation so effective services can be provided



What are the advantages of the different eBuses tecnologies available in the market in the mid term?

How do they charge? What cost?  
How do you address extra investment cost for charge-infraestructure?



e-mobility challenges

What is needed from eBuses to operate in equivalent conditions as conventional buses do (service, trust, comfort, etc)?

Which regulatory changes are necessary for the operation of eBuses?



If challenges are not overcome through customized solutions, the consequence may be white elephants which may not meet expectations

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# Fossil fuels: impacts



- Estimated health costs of air pollution: US\$ 3,9 billion (OCDE, 2010)
- ½ of these costs attributable to transport sector (OCDE, 2010)
- Main pollutants from transport sector are associated to diesel and are a known cause of cancer and other diseases (WHO)