Comparison of Electric Vehicle Policies and Institutional Arrangements

Regional Meeting on Just Transition to Low Carbon Mobility in Asia and the Pacific and 
Joint Workshop on Electrification of Public Transport
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Global Policy Support has accelerated EV adoption

- Initial measures designed to reduce price gap with conventional vehicles.
- Clear long term goals prevalent in most countries (EV Share, Net Zero)
- Initial policy support for even private vehicles (USD 120 b spent on supporting E-car sales !!!)
- Policy support also shifting to Buses and LCVs due to their greater emission reduction potential
- Emphasis shifting from direct subsidies to regulatory measures such as ZE mandates and tighter emission standards in ICE vehicles.
- City based policies: Congestion charge exemptions, low emission zones, strategic deployment of charging infra. Eg Oslo

Over 20 Countries have announced full phase-out of ICE car sales over next 10-30 years. Over 120 countries have announced economy wide net zero emission pledges.
London, United Kingdom

1,572
Area
(Km²)

8.6
Pop
(Million)

87,308
GDP per
Capita
(USD)

100% zero emissions vehicles by 2030

At least 50% and as many as 70% of new car sales to be ultra-low emission by 2030

FOCUS MODES:

Private Vehicles, Buses and Taxis

FISCAL INCENTIVES

• Over £900 million for the development, manufacture, and use of ultra-low emission vehicles (ULEVs) in the UK.

• Reduce company car tax to 2% for ZE vehicles with mileage >= 130 miles.

REGULATORY STRATEGIES

• Creating Ultra Low Emission Zones

• All 25,000 central government fleet vehicles to be Electrified

• Recommending sales targets of 15% by 2022, 45% by 2025 and 85% by 2030.

PUBLIC TRANSPORT

• The city buses will use only biofuel or renewable energy.

• All new buses ordered by Transport for London (TfL) will be electric moving forward

CHARGING INFRASTRUCTURE

• Invest £1 billion per year on charging infrastructure

• Charging stations will be required for all new homes and businesses in the UK starting in 2022.
Helsinki, Finland

GOAL
Achieve 2,50,000 EV stock by 2030 and all registered passenger vehicles shall be capable of using alternative fuels or power sources

Achieve emissions-free passenger vehicle transport by 2050.

217
Area
(Km²)
0.65
Pop
(Million)
64,473
GDP per Capita
(USD)

**GOAL**
Achieve 2,50,000 EV stock by 2030 and all registered passenger vehicles shall be capable of using alternative fuels or power sources

Achieve emissions-free passenger vehicle transport by 2050.

**FOCUS MODES:**
Public Transport, 4W

**FISCAL INCENTIVES**
- 2,000 EUR subsidy on the purchase or minimum 3-year lease of EV, with a maximum purchase price of 50,000 Euro (incl. taxes).
- Tax benefit for employers, if charging points made available at the workplace. (In effect from 2019)

**REGULATORY STRATEGIES**
- E-cars are provided access to Bus Lanes at specific times.
- Specific areas/streets reserved exclusively for low-emission cars.
- Increased Taxes, road tolls, parking costs on purchase of ICE Vehicles.

**PUBLIC TRANSPORT**
- While appointing Bus Operators through the bidding process, contract mandates E Buses or alternate fuel buses.

**CHARGING INFRASTRUCTURE**
- Subsidy of Euro 3 m allocated to charging infra.
- Subsidy rate for fast chargers is 35% and for normal chargers 30% of cost
Amsterdam, Netherlands

**GOAL**

*Target*: 15,000 - 20,000 3W + EVs by 2015; 200,000 vehicles by 2020; and 1 million by 2025.

The nation aims to sell only zero-emission cars in the Netherlands from 2030.

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**FOCUS MODES:** Delivery Vans, Trucks, Buses

**FISCAL INCENTIVES**

- Subsidies for EV Purchase and setting up of charging stations.
- 20% support on prices of vans, buses and trucks.
- Used emission-free vehicles are also eligible for subsidisation.
- Motor Vehicle Tax exempted initially

**REGULATORY STRATEGIES**

- Presenting EV as an attractive proposition.
- Only EVs allowed in environmentally sensitive or congested areas after target years

**PUBLIC TRANSPORT**

- Subsidy of 20% on the purchase value (a maximum of 40,000 euros)
- Only emission-free buses and coaches will be allowed in the city centre after 2022.

**CHARGING INFRASTRUCTURE**

- Using VAMIL and MIA allows companies purchasing new environmental technologies to reduce their overall cost.
- Application and installation of a new public charging point is free.

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**219.3**

Area (Km²)

**8.22**

Population (Million)

**91,365**

GDP per Capita (USD)

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**GOAL**

*Target*: 15,000 - 20,000 3W + EVs by 2015; 200,000 vehicles by 2020; and 1 million by 2025.

The nation aims to sell only zero-emission cars in the Netherlands from 2030.
Seoul, South Korea

GOAL
In 2020, the Korean government plans to subsidise 99,950 electric vehicles;
• 65,000 passenger cars
• 13,000 freight cars
• 650 buses
• 21,000 motorcycles, and 300 PHEVs (Plug-in Hybrid Electric Vehicles).

FOCUS MODES: Cars, Buses, 2-wheeler

FISCAL INCENTIVES
• Subsidies for the purchase of electric and hydrogen vehicles
• Reduction in Vehicle Tax

REGULATORY STRATEGIES
• Lowering the prices of EVs by 2025 by focusing on Local Manufacturing.
• Battery Leasing to cut CAPEX by nearly half.

PUBLIC TRANSPORT
• From 2021, public bus companies are required to purchase only zero-emission vehicles starting with replacing the older fossil fuel vehicles.

CHARGING INFRASTRUCTURE
• The Government to install 70 units of 350kW-class ultra-fast chargers, that can charge vehicles three times faster than chargers already installed from next year on PPP Basis.

GOAL
605.25
Area
(Km²)
9.96
Population
(Million)
408,265
GDP per Capita
(Million USD)
Mexico City, Mexico

GOAL
To improve mobility by replacing local transportation with zero emission vehicles.

Plans to increase generation through clean energies from 25 to 35% by 2024.

1,485
Area
(Km²)

8.85
Population
(Million)

17,696
GDP per Capita
(USD)

FOCUS MODES: Public Transport (Buses)

FISCAL INCENTIVES
• Vehicle tax exemption, road toll exemption, free parking, tax reduction
• The EcoTAG (Toll service) is exclusively for electric and hybrid vehicle owners and grants them a 20% discount on the regular fee.

PUBLIC TRANSPORT
• In Mexico City, operators of PT electric or hybrid vehicles are exempt from the requirement to renew their fleet every ten years.

REGULATORY STRATEGIES
• Vehicles with emission that failed to meet Euro-I standard were given “Yellow labels”, and the ones that fulfilled the criteria were given “Green labels”. Yellow labelled vehicles are being phased out.

CHARGING INFRASTRUCTURE
• Over 900 EV charging stations in Mexico City.
• The government has allocated 25 million pesos for the installation.
Bogota, Columbia

**GOAL**
National Strategy for Electric and Sustainable Mobility: 6,00,000 EVs by 2030, 100% EV bus fleet, 45% population using PT

Achieving net zero emissions by 2050

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**FOCUS MODES:** Buses and taxis

**FISCAL INCENTIVES**
- VAT exemption for hybrid EVs
- Lower Import tariffs for EV
- Other mandates and tax breaks

**REGULATORY STRATEGIES**
- Exemption from time of day vehicle restriction measures like “Peak and Plate” used for traffic regulation.

**PUBLIC TRANSPORT**
- 2020 tenders favour 100% electric buses, with contracts that last for 15 years (rather than 10 years) and lower bus productivity requirements (260 km per day per bus instead of 300 km)

**CHARGING INFRASTRUCTURE**
- Enel X installing charging points using smart grid technology.

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1,776
Area (Km²)

8.181
Population (Lakhs)

10,200
GDP per Capita (USD)
Surat, India

GOAL
Target of min. 20% EVs of State EV Policy Target of 0.2 m EV by 2025 (40,000 EVs)

Promote charging infrastructure and mandate adoption of EV in City Corporation and its agencies such as Surat Smart City Development Ltd., Surat Sitilink etc.

FOCUS MODES: 2W, 3W, 3W and Buses

FISCAL INCENTIVES
- Central Govt. price subsidy for Buses, 3W, 2W, Taxi (FAME 2)
- Reduced Vehicle Regrn Charges
- State Govt subsidy on cars, 2 & 3W
- Vehicle Tax exemption – 100% on 1st year, 75% on 2nd year, 50% on 3rd year and 25% on 4th year.
- 100% Rebate in Environment Improvement Charge
- Rs. 5000 incentive Pink Auto (3W)

PUBLIC TRANSPORT
- 40% subsidy on price for E Buses under FAME II and Rs 25 per km VGF
- 450 E Buses ordered through gross cost tender: 50 E Buses already on the Road

REGULATORY STRATEGIES
- Free parking for EVs on Parking lots operated by the city.
- City Employee vehicles and Garbage Collection vehicles to shift to EV

CHARGING INFRASTRUCTURE
- Targeting to install 500 Public / Private Charging Stations or points
- Municipal Corporation shall provide land on rental basis for first 2 years and revenue sharing basis from 3rd year.

Area (Km²) 474.2
Population (Million) 7.78
GDP per Capita (USD) 8000

Area (Km²) 474.2
Population (Million) 7.78
GDP per Capita (USD) 8000
### State Level Incentives in India

<table>
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<tr>
<th>States</th>
<th>Purchase Subsidy</th>
<th>Tax Exemptions</th>
<th>Access to Financing</th>
<th>Scrapping and Retrofit incentives</th>
<th>Priority or Free Permits</th>
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- Red: Not addressed in the policy
- Green: Addressed in the policy

*Source: A Review Of State Government Policies For Electric Mobility, 2020 by Chaitanya Kanuri, Rohan Rao, Pawan Mulukutla*
Key Takeaways – Targets and Modes

How are the Goals framed?

- Set emission reduction targets
- Select specific modes for converting to EV.
- Estimating % or no. of vehicles to be converted to meet target

Which Modes are predominantly the focus?

- Private Vehicles
- Buses

EV30@30 campaign aims to reach a goal of 30% sales share across 4W categories by 2030 in IEA EV Initiative countries.
Key Takeaways – Vehicle related Strategies

What kind of strategies to follow for E-Vehicle promotion?

**Fiscal Incentives**: Direct subsidy, Emission based Tax rebates (Registration/VAT), Credits

**Soft Measures**: Creating Low Emission Zones, Preferential Parking and exemptions from restricted zones

**Increased vehicle tax, toll rates and parking cost for ICE Vehicles**

**Promoting local manufacturing to reduce vehicle cost**

**Converting Government owned vehicles to EV is the preferred first step to transition**

**Promoting Electrification**: Grid, Vehicle and Charging Standards
Key Takeaways – Charging related Strategies

What kind of strategies for promoting charging infrastructure?

Direct subsidies and tax rebates for charging equipment

Permits for setting up Charging Stations at parking stations and city assets

Business models to encourage charging station operators

Building Regulations and power tariff to support Charging Points at homes and offices and Encourage charging during off peak hours
Future EV Policies will need to focus on

- Freight Electric Vehicles
- Electrifying 2/3 wheelers in developing economies
- Integration of EVs and recharging infra in power systems
- Decarbonization of electricity generation
- Manufacturing of sustainable batteries.
1. What is the Guidebook and for Whom

2. Mobility and Public Transport in Asian countries: The case of Electric Mobility

3. The Electric Vehicle Ecosystem

4. Adoption Challenges and Strategies for Transition
   a. Barriers to Adoption
   b. Policies and Regulations
   c. Establishing Standards and local support
   d. Vehicle Technology Selection
   e. Charging Infrastructure and Land requirements
   f. Procurement and Business Models
   g. Financing mechanism
   h. Workforce Skill Development

5. Transiting to Electric Mobility – a Roadmap
Thank You

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