The Global EV Outlook 2018
Focus on electric buses and trucks

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Electric Vehicles Initiative (EVI)

Multi-government policy forum dedicated to conducting collaborative activities that support the design and implementation of domestic electric vehicle (EV) deployment policies and programs.

In 2010, EVI was one of several initiatives launched under the CEM.

Currently co-chaired by Canada and China, and coordinated by the IEA.

Released several analytical publications, demonstrating leadership to strengthen the understanding of the opportunities offered by electric mobility to meet multiple policy goals.

Instrumental to mobilize action and commitments (Paris Declaration on Electro-Mobility and Climate Change at COP21, Government Fleet Declaration at COP22).

Launched the EV30@30 Campaign in June 2017.

Now launching the Pilot City Programme.

Also working with the Global Environment Facility on the preparation of a project for the support of EV policy-making in developing regions.
EV30@30 Campaign

Designed to accelerate the global deployment of electric vehicles
Sets a collective aspirational goal to reach 30% sales share for EVs by 2030
Launched at the 8th CEM meeting, in Beijing, by Minister Wan Gang

Implementing actions include:

• Supporting the deployment of chargers and tracking its progress,
• Galvanising public and private sector commitments for electric vehicle (EV) uptake in company and supplier fleets
• Scaling up policy research and information exchanges
• Supporting governments in need of policy and technical assistance through training and capacity building
• Establishing the Global EV Pilot City Programme, aiming to achieve 100 EV-Friendly Cities over five years

Supported by several partners
The number of electric cars on the road continues to grow. The electric car stock exceeded 3 million in 2017. However, electric cars still only represent 0.3% of the global car fleet.
Electric mobility is not limited to cars

**Electric 2-wheelers:** major phenomenon in China, where there are 250 million in the rolling stock and 30 million sales per year

**Low Speed Electric Vehicles:** estimated at 4 million units in China (sales above 1 million). Not favoured by policy support but by cost and practicality (small size, no driving license/registration required)

**Buses:** 360,000 in China. Around 100,000 sales in 2017. Stimulated by policy support.

**Growing interest in C40 cities** (better economics: not only local air quality or climate-driven phenomenon)
The number of electric buses on the road continues to grow.

Electric bus sales are growing in many countries, although no exceeding more than 500 units per year in total, except for..
The number of electric buses on the road continues to grow

China’s electric bus fleet was already around 360,000 in 2017, taking off after 2015 with generous subsidies and ambitious city targets.
EV uptake is still largely driven by the policy environment

Key instruments deployed by local and national governments for supporting EV deployment:

- Public procurement (taxis, buses)
- Financial incentives to facilitate EV purchase and reduce usage cost (e.g. offering free parking)
- Financial incentives and direct investment for the deployment of chargers
- Regulatory instruments, such as fuel economy standards and restrictions on the circulation of vehicles based on their tailpipe emissions performance

- Countries with electric bus targets:
  - India (100% electric urban bus sales by 2030)
  - Netherlands (100% public bus sales by 2025 and 100% stock by 2030)
  - Norway (100% public bus sales by 2025 and 75% long distance buses by 2030)
  - China (0.2 million electric buses by 2020 – already achieved)

- 14 cities announced a target of 100% electric bus sales by 2025
Charger deployment accompanies EV uptake

Bus chargers (mainly >50 kW) rose above 100 thousand in 2017, representing 4% of all chargers and more than half of all fast chargers. Depot charging most dominant so far.
Implications for the cost competitiveness of electric buses – high tax

### Electric buses travelling 4 000-50 000 km/year are cost competitive in regions with high diesel taxation regimes if battery prices are below USD 260/kWh

Electric buses are more expensive to buy, but have much lower operating costs than their diesel equivalents.

Electric buses travelling 35 000- 45 000 km/year are cost competitive in regions with high diesel taxation regimes if battery prices are below USD 260/kWh.
Other electrified heavy-duty vehicles under way as well

After Tesla’s Semi heavy freight truck announcement, other truck makers have announced a variety of new electrified trucks with various sizes and ranges.
The EV30@30 Scenario sees 4.6 million electric buses and 2.4 million trucks on the road by 2030. This is about 4.6 million (3.1 buses/1.5 trucks) more than in the New Policies Scenario.
Regional insights in the GEVO 2018 scenarios – Buses and trucks

EV market share by mode in a selection of regions, NPS and EV30@30 scenario, 2030

China and Europe are the global regions with the fastest development of electric buses in both scenarios.
Policies favouring the transition to electric mobility

- **Carbon pricing of fuels**
- **Public procurement**
- **Bridging the price gap**
- **Fuel economy standards**
- **Local access regulations**
- **Road pricing**

- **Private & public EVSE rollout**
- **Demand-driven & business-driven EVSE**
- **Successful grid integration**
- **Material demand management**
- **Second life, end-of-life and recycling**
Regional insights in the GEVO 2018 scenarios

EV market share by mode in a selection of regions, NPS and EV30@30 scenario, 2030

China and Europe are the global regions with the fastest development of EVs in both scenarios and in virtually all modes.
Implications for the cost competitiveness of electric buses – low tax

Cost breakdown urban bus (low)

Gap in upfront costs higher relative to buses in emerging economies.

Urban bus TCO

Electric buses travelling more than 55 000 km/year are cost competitive in regions with low diesel taxation regimes if battery prices are below USD 120/kWh

Electric buses travelling 40 000-50 000 km/year are cost competitive in regions with low diesel taxation regimes if battery prices are below USD 120/kWh