Integrating e-buses in policy and planning - insights from Izmir

Çağlar TÜKEL, PHD
Directorate of Climate Change and Clean Energy
Izmir Metropolitan Municipality
İzmir and ESHOT Bus Authority

- The third biggest city in Turkey.
- It is a gulf and harbor city.
- 200 km West to East
  170 km North to South
- Population: 4,320,519 (2018)
- Area: 12,007 km²
- Number of towns: 30
- An important city regarding industry, agriculture and tourism.

ESHOT / Bus Authority
- Established in 1943 under IMM
- Operates bus service around whole province with 1847 buses,
  340 bus routes and 8010 bus stop.
Plans / Emissions / Actions

- İMM made commitment to **40% GHG reduction until 2030** to comply with CoM targets.
- İzmir is the first city prepared **Green City Action Plan program (İzmir GCAP)** in Turkey.
- New and updated **Sustainable Energy and Climate Action Plan (SECAP)** was completed and approved by Municipal Council on 16/12/2021 along with İzmir GCAP.
- **Transport** accounts for **23% of all GHG emissions**.
- **53% of public transport** is delivered through **buses**.
- **SECAP/ GCAP Actions**
  - **T1.5:** Municipal Fleet and Service Vehicles: **Electric and Low-carbon Vehicles**
  - **T1.1.3:** Promote a Step Change in the Uptake of Privately and Municipality **Owned Low Emission Vehicles**
E-buses

- E-buses started operating officially in **April 2017**
- 20 electric buses are being in operation for **over 4 years**
- Infrastructure with **charging units** for buses has been installed.
- E-buses have been tested at **various routes** and **different times of the year**.
- First and biggest e-bus fleet in Turkey.
- **100 e-bus purchase** is being planned for **2021**.
- İMM has a plan to **add 500 e-buses** until 2024.
Supporting Projects

- **835 kW Solar power system** on the ESHOT workshop provides all electricity for e-buses.
- **True emission free** with eliminating electric emissions from the **national grid** through utilization of renewable energy.
- **Live data** such as **diesel fuel saving, emissions eliminated** are shared to public though **municipality website** and **open data platform**.
Summary

Observed benefits of e-buses from our experiences.

- **Low maintenance** due to much fewer parts and longer life.
- Much **less vibration** leads to more comfortable travelling experience and less maintenance.
- **Low noise** inside (comfortable travelling) and outside (less noise pollution at city level).
- **More spacious** due to lack of engine room.
- Drivers can **adapt** in short time. No major difference as compared to diesel bus in driving experience.
- **No tailpipe** emissions provide **better air quality** and **carbon-neutral** through renewable energy.
- **Low operation cost** due to zero fuel cost and low maintenance and fewer replacement part requirement.

Major barriers

- Still **more costly** than diesel powered buses.
- **Insufficient electricity infrastructure** for charging at some parts of the city.
Thank you for your attention

Çağlar TÜKEL, PHD
Directorate of Climate Change and Clean Energy
Izmir Metropolitan Municipality

caglartukel@izmir.bel.tr