



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

Çağlar TÜKEL, PHD

Directorate of Climate Change and
Clean Energy

Izmir Metropolitan Municipality



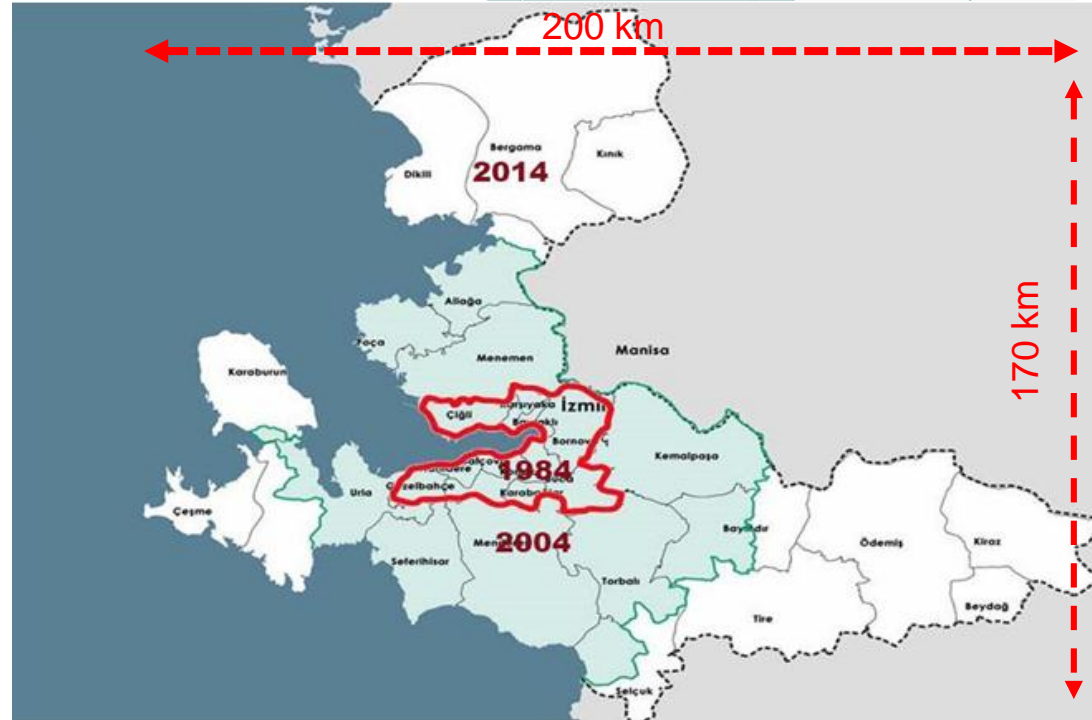
İzmir and ESHOT Bus Authority



- 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

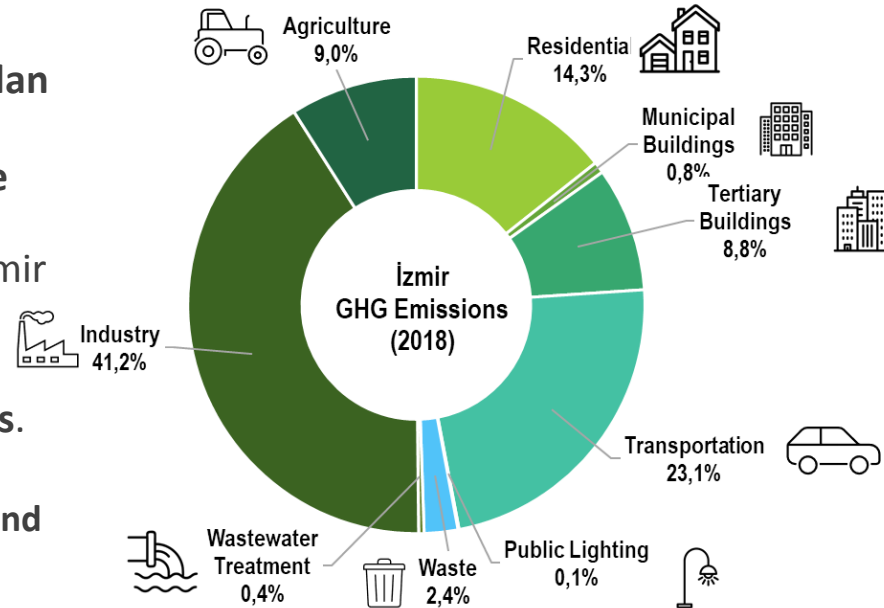
- Established in 1943 under IMM
- Operates bus service around whole province with **1847 buses, 340 bus routes and 8010 bus stop.**



Plans / Emissions / Actions



- IMM made commitment to **40% GHG reduction until 2030** to comply with CoM targets.
- İzmir is the first city prepared **Green City Action Plan program (Izmir 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**



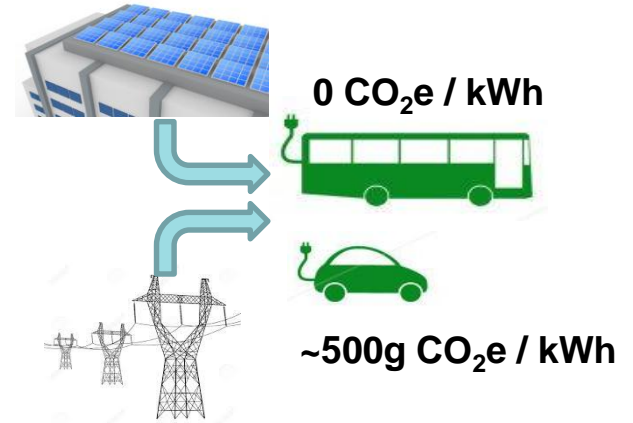
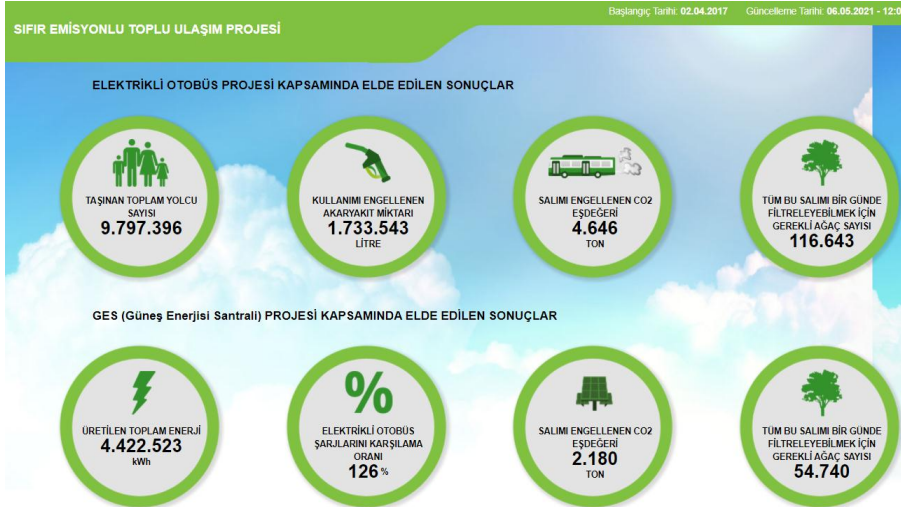
E-buses

- 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**.
- IMM has a plan to **add 500 e-buses** until 2024.



Supporting Projects

- **835 kWe 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 through **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

