



# COPENHAGEN

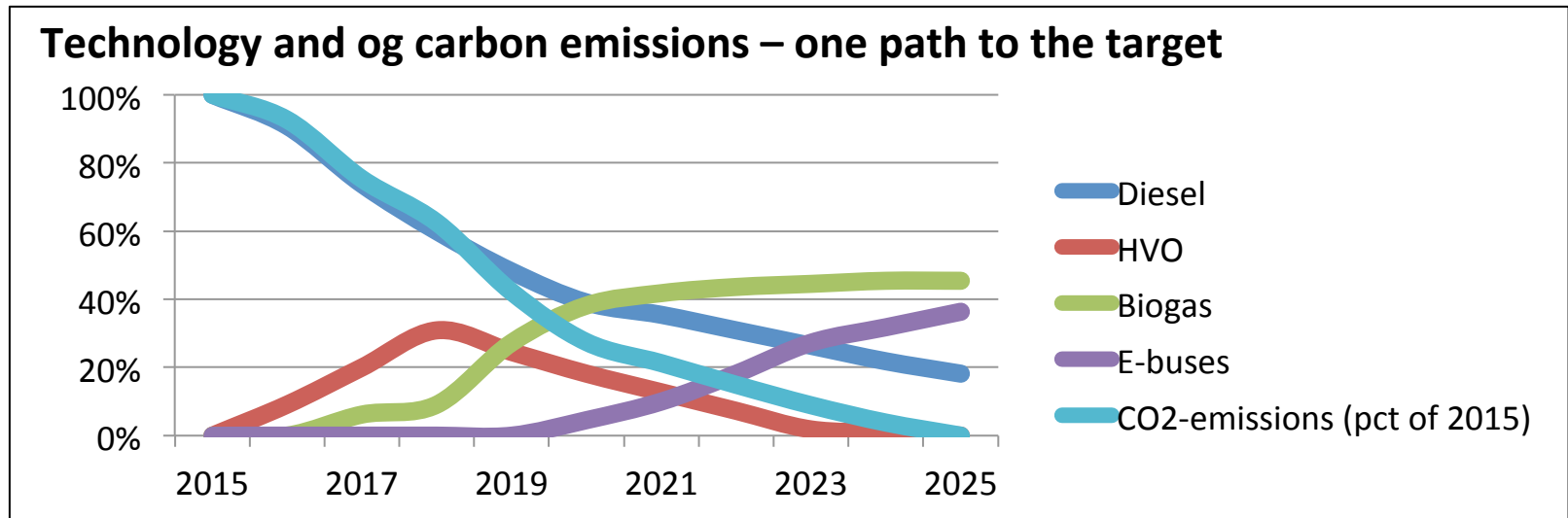
Ongoing tender for opportunity charged e-buses

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# Buses in Copenhagen → 2025

- Carbon neutral public transport in 2025



- More e-bus knowledge is essential for the private bus operators



# 3A – Trial with two e-buses

- Danish Transport Authority supports trail
- Cooperation between the City, Movia and E.ON Denmark
- 10 km each direction
- No hills
- Total budget: 12 mill DKK
- Project start: jan 2014
- Tender decided during September 2015
- Buses delivered during 2016





# EU-tender of two e-buses

- Ongoing tender. Final bids during September
- What is really important?
  - Battery lifetime?
  - Noise – what kind?
  - Energy efficiency?
  - Urban integration?
  - # passengers and flow in the bus?
  - Bus layout?
  - Charging time?
  - Price?
  - Local emissions?
  - Uptime?
  - Smart solutions?
- Lack of tender experience





# Conclusions

- Many players on the market.
- E-buses are different than diesel
- Specific demands in tenders of new technology can exclude some bidders
- Noise inside bus has to be measured during acceleration
- An uptime like diesel bus may be difficult to achieve during a trial.
- Noise from charger is important
- Bidders need time to learn public procurement rules.
- Local emissions from heater has to be specified very carefully.
- Tender organization is important
- Hard work and patience