



Fuel cell electric vehicles - A part of Copenhagen Climate Plan



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2015 FCH JU Stakeholder Forum

FCEV part of Copenhagen Climate plan and liveable city

Carbon neutral in 2025 –
including traffic

Better public transportation,
cycle lines, wind turbines etc.

306 passenger cars in the
Copenhagen Municipality

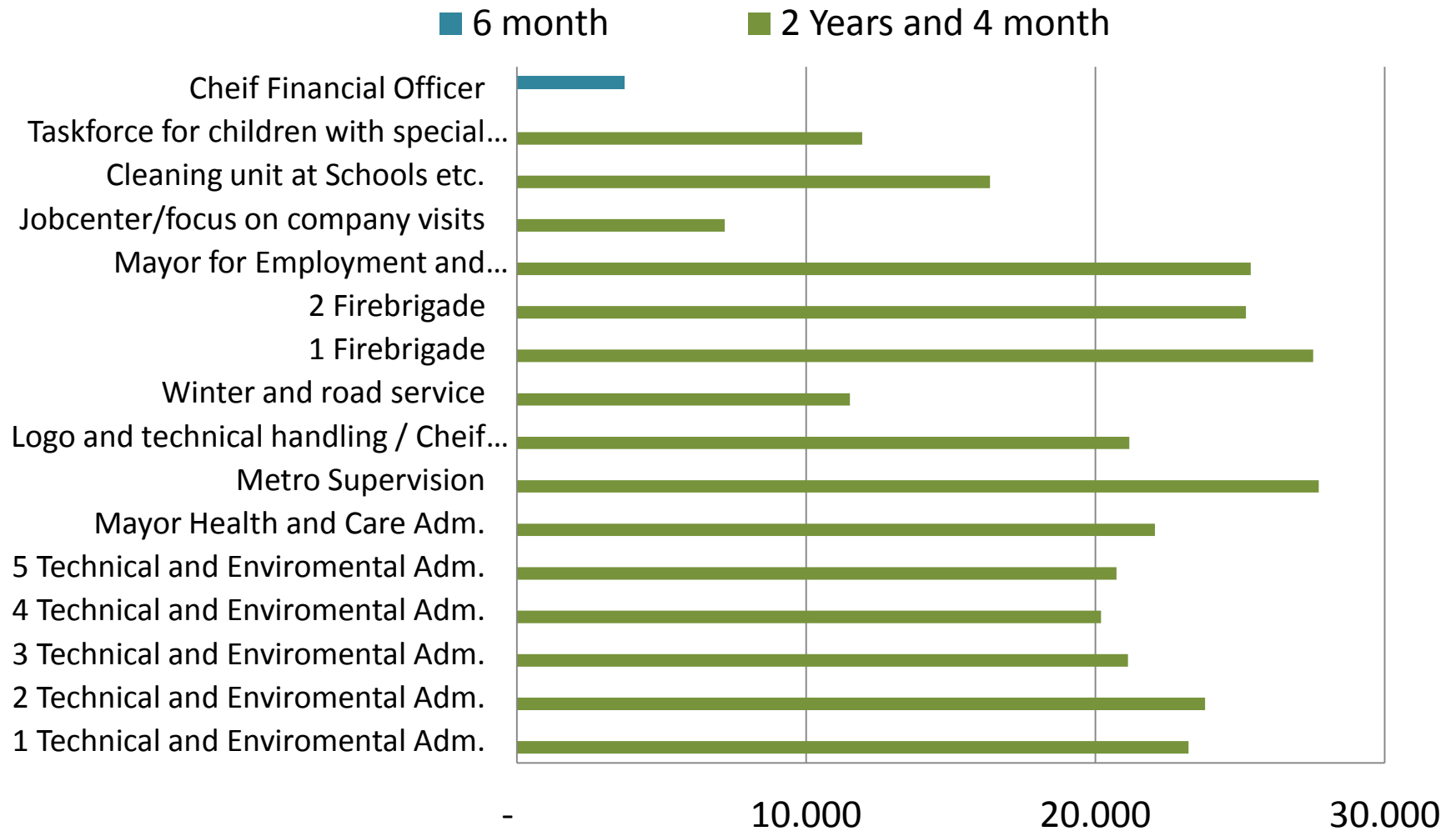
124 conventional, 16 FCEVs,
166 EVs

Reached 59 % of 2025 goal



15 EU type approved Hyundai FCEVs arrived in May 2013

Total distance driven distance: 308.834 km



Require service after 10,000 km or 24 month

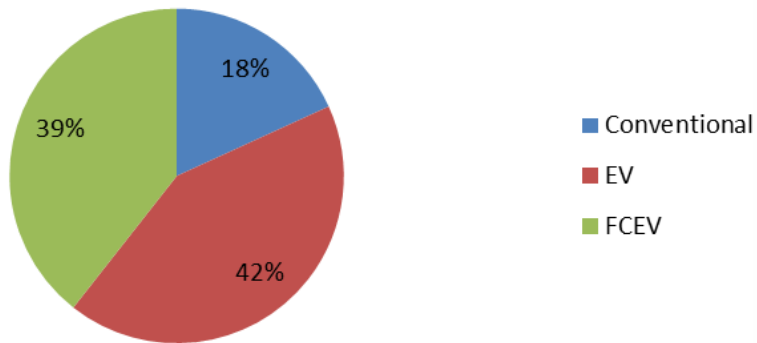
Status after 2 years of operation

- Car workshop 7 km from Copenhagen city center
- The FCEVs have completed service twice
- Service takes one day like regular cars
- Service and software upgrades is mostly done together
- Only small repairs due to minor road accident and some loose wires – no fuel cell problems
- Overall vehicle availability for 15 FCEVs from June 2013 – Mar 2015: 99,5 % including service and repair

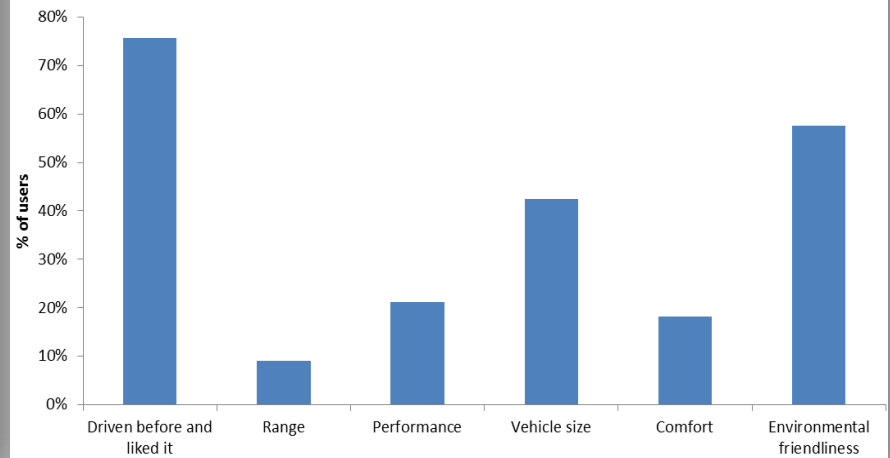


33 car pool drivers' vehicle preference

Copenhagen municipal car pool
vehicle choice



Which factors are important to users
in choosing a vehicle from the carpool?



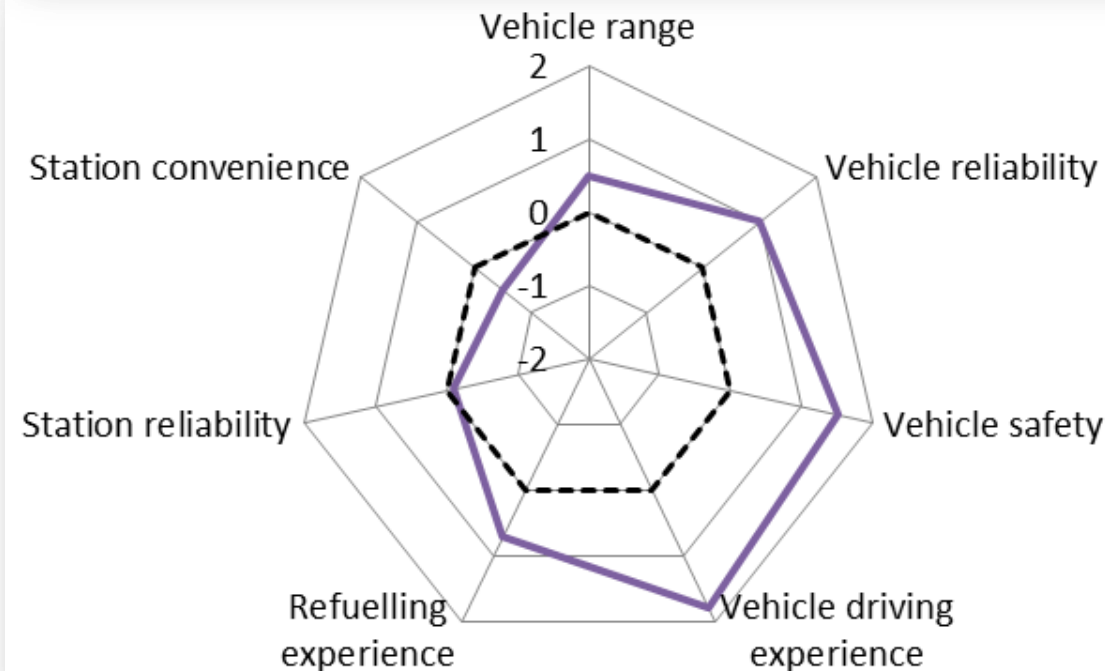
81 % Prefers EVs and FCEVs
75 % Driven it before and liked it
58 % Environmental friendliness



10 regular drivers' perception on FCEVs and HRS'



	Index
2	Excellent
1	Good
0	Satisfying
-1	Weak
-2	Very weak



During the trial

HRS in Copenhagen and Gladsaxe were upgraded with electrolyser

HRS in Køge and Korsør was under construction



Torben Saxtorff, City of Copenhagen, Metro Supervision team:

"The vehicle attracts a lot of attention and many citizens have asked about the car and how it works. It is a very pleasant car to drive. What I enjoy most is the silence".

Jane Källberg Hansen, Head of Section for Cleaning Unit in the Children and Youth Administration:

"Many of us in my section use the fuel cell vehicle and every one is very pleased with it".

Lotte Engelund Jensen, Copenhagen Fire Brigade:

"The Brigade is very pleased with the fuel cell vehicles; as matter of fact I have been asked if one of them could be used as on-site commander vehicle fitted with blue lights and siren (sadly I had to decline) which shows we are pleased to drive them".

1,300 fuellings in Copenhagen / 1,978 in DK – More than 98% availability
2016: 11 HRS gives 50% of Danish population access to HRS within 15 km



Status November 2015	Units
Copenhagen	16
Other cities and companies	22
Total today	38
Binding orders	15
Awaiting orders	20
Total	73
Hyundai FCEV price	66,755 €
Conventional Hyundai ix35	58,192-72,239 €
EU-funding essential: HyTEC, HyFive, H2ME/H2ME-2	
DK: FCEVs are exempted for taxation until 2019	
Potentially downsizing the municipality fleet up to 20 % + local political funding	



Good framework
conditions
(EU, DK, Copenhagen)

Joint deployment of
FCEVs and HRS in
cities

Easy access to service
and repair

Training and dialog
with end-users and
road rescue service

Satisfaction rumours
– new customers

More mature,
cheaper technology,
more OEMs
Roaming

Next step



- 100 % EVs and FCEVs in 2025
- Basis for about 30 FCEVs in the Municipality fleet
- First mover →
- FCEVs at other public and private fleet owners
- Projects / partnerships
- Provide experience and Copenhagen as test area
- Continued need for EU-funding and price reductions/
technology development on FCEVs – the technology is robust



Thank you for your attention