



Nordic best practices for electric bus procurement

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Baggrund

- Joint document from City of Copenhagen, Ruter, SLL, and HSL
- Purpose: Knowledge sharing between the cities and PTA's.





Agenda

- Best Practice in Capitals:
 - Helsinki, Direct procurement for test and development
 - Stockholm: Cooperation project without direct procurement
 - Copenhagen: Public procurement (tender) of buses and charging equipment
- Discussion and conclusions



Helsinki, Direct procurement for test and development

- 12 buses to different bus operators bought directly from chosen manufacturers.
- PTA buys buses.
- Cities buys charging equipment
- Procurement in 2014
- HSL takes the risk of technology from the electric buses
- The 12 electric buses are 'extra' vehicles
- The operators buy the buses from the PTA to a very reduced price
- No incentives except low electricity prices.





Helsinki, Direct procurement for test and development

- Advantages
 - close partnership between the manufacturer, the PTA and the cities
 - Short procurement process
 - Possible to make the buses fit the PTA's and cities needs
- Disadvantages
 - Not legal when not test or development
 - Direct procurement is only possible for small projects (less than about 200.000 €) and test and development projects
 - Costly for PTA



Stockholm: Cooperation project without direct procurement

- 8 plugin hybrids operating line 73
- Part of EU Zeeus project (EU-funded)
- No extra buses. No incentives needed
- Operator made procurement of buses
- Operator has possibility to cancel contract with Volvo after few years if the buses are malfunctioning.

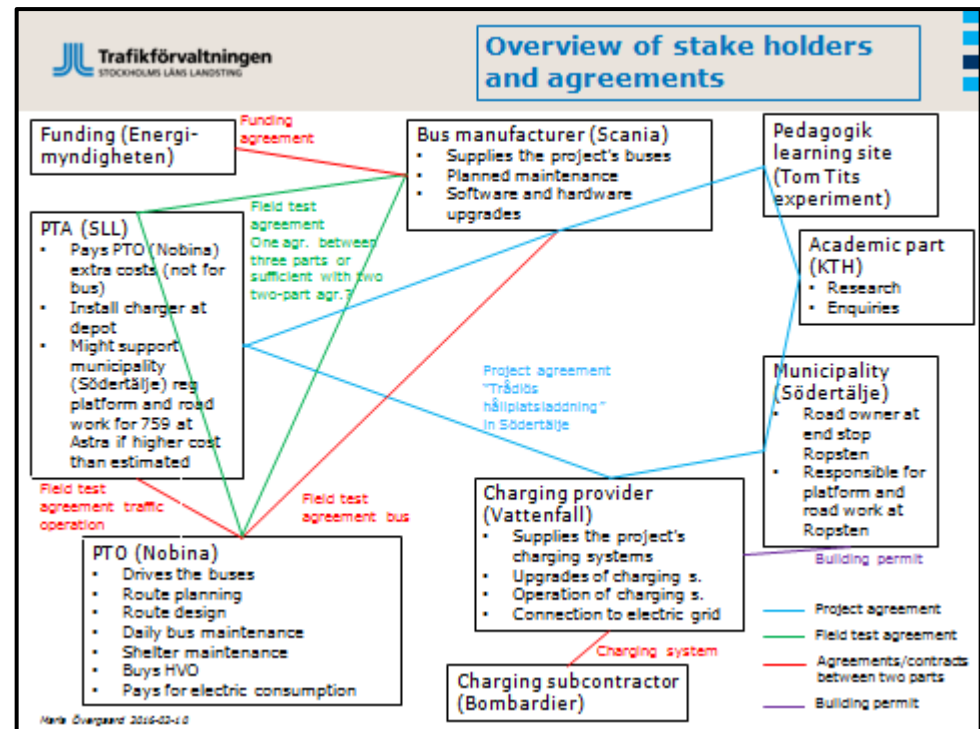




Stockholm: Cooperation project without direct procurement

Acquiring process

- Cooperation about EU-application
- Volvo supplies buses to same price as normal Hybrids
- Vattenfall supplies charging equipment
- EU supplies extra funding for the higher costs during the first 2 years
- Many stakeholders



Overview of stakeholders in Stockholm's other (and more simple) e-bus project in Södertälje



Stockholm: Cooperation project without direct procurement

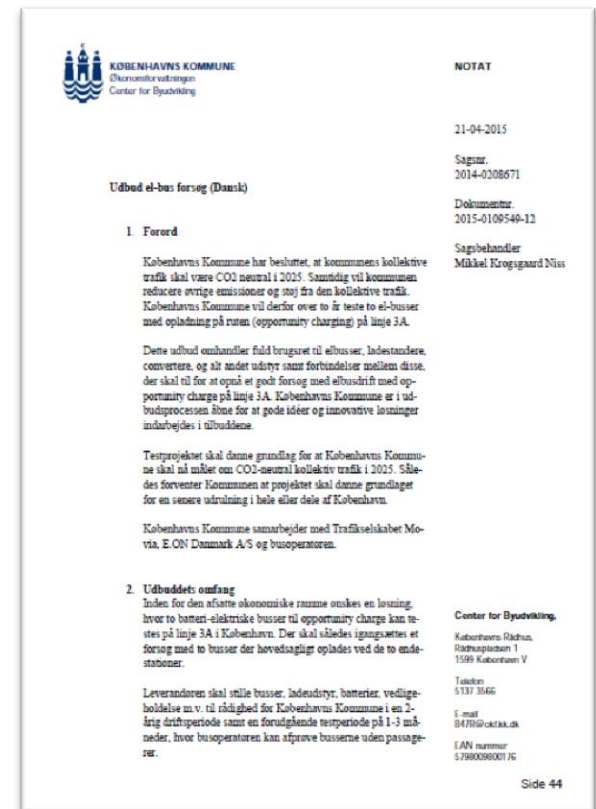
Lessons learned

- Vacant electricity in the grid
- Charging infrastructures requires space above ground and underground
- It is too late to introduce e-buses when a tender is decided
- It takes a lot of time to initiate a demo project.
- Demo projects are easy compared to real operation.



Copenhagen: Public procurement of buses and charging equipment

- Climate goal from City of Copenhagen
- 2 buses and charging equipment
- City made public procurement of buses and charging equipment from consortiums
- Everything was specified prior to procurement (tender demands)
- Buses are rented by the operator from the city





Copenhagen: Public procurement of buses and charging equipment

Risks

- The supplied buses do not meet the demands of the tender
- Buses and/or chargers do not work

Lessons learned

- Noise
- Passenger flow/door configuration
- Partnerships, innovation and tenders





Tender of full scale e-bus operation

- Risk if buses and charging equipment are operated by different entities.
- Different depreciation time for different equipment (busses, charging, cabling, etc.)
- Difficult to make specifications (leanings from Copenhagen)
- Cities want e-buses due to less noise and pollution
- Extra costs of electrification
- Maybe change from functional demands to help the transition