

Quiet city buses – benefits and procurement possibilities



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Nordic Electric Bus Initiatives 2015-09-02

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Noise – a growing problem



- The cost of noise
- Negative health
- Reduces liveability
- Major obstacle in densification
- Property value
- Limits public transport expansion

Electric buses – part of the solution



- Remarkably lower noise levels
- Even beyond measurement protocol – e.g. idle

Socio-economic benefits of quieter buses



Tystare stadsbussar
kravställning vid upphandling
för minskat källbuller

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2013
Koucky & Partners AB
på uppdrag av Trafikverket

Nordic Electric Bus Initiatives 2015-09-02

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Case: Central avenue

- 13 000 vehicles per day, 1 300 heavy duty
- 1200 busses per day – roughly one bus per minute
06-00 h



Central avenue

- 13000 vehicles per day, 1300 heavy duty
- 1200 busses per day

Socio-economic saving:

- Plug in hybrid bus: -3.34 SEK/bus km (€ 0.35)
- Electric bus: -3.52 kr/busskm (€0.37)

Central residential area

- 4500 vehicles per day, 470 heavy duty
- 276 buses per day

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- 4500 vehicles per day, 470 heavy duty
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Socio-economic saving:

- Plug in hybrid bus: : -3.31 kr/bus km (€ 0.35)
- Electric bus: -4.34 kr/bus km (€ 0.45)

EU-regulations

- Insufficient
- Drive by test, 50 km/h; does not reflect a variety of driving conditions in cities
- Slow progress



Procurement

- an important tool



Image: FreeDigitalPhoto.net

- Driving development
- Making noise performance count
- Today – noise is often a neglected topic in public procurement

Procurement

– possibilities today

- Sharper limits for drive by test - blunt
- Tyres
- **Educate drivers in silent driving**
- Very limited possibilities to demand real life noise reductions through procurement

Future possibilities

- Measure **several cases of driving**
- Coordination between cities
 - split the cost
 - increase the demand
- Raise the status of noise performance

Conclusions

- Large socio-economic benefits through more silent busses – up to 1/3 of operational costs
- Low-noise emissions should be rewarded in procurements
- Today – difficult to benefit low-noise buses in procurements
- Own measurements needed, coordination between cities is essential
- The city is the winner!



Thank you!

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Notes MK

- Other possibilities – environmental zones, SULEV-zones, entry-restrictions
- Economic incentives for quiet busses are motivated in dense urban areas
- Benefits electrification, but puts also pressure on the development of more quiet ICE-busses