25

A new and greener alternative to public transport in Copenhagen

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INTRODUCTION

Traffic is increasing, and within recent years the Danish governments has been focusing more on reducing the traffic in the Copenhagen Region and thereby reducing CO2-emissions from private transport. The Danish parliament passed in to 2009 an agreement called "En grøn trafikpolitik", here it was determined that reduction in CO2-emissions were to be achieved by getting more motorists to use public transport and thereby reducing the traffic and pollution in Copenhagen. To achieve this requires an efficient and reliable public transport that gives users a high level of service.

Benefits of light rail in public transport

This project examines how the implementation of light rail in Copenhagen and the surrounding municipalities can have a positive effect on travel time spent in the Copenhagen Region. Light rail is primarily powered by electricity, making it possible to operate them with renewable energy rather than fossil fuels, which today is the primary energy source for buses. Studies from the French city of Angers, shows that CO2-emissions from light rail can be brought down to 2.4 grams of CO2 per passengerkilometre, when light rail is powered by renewable energy. For comparison, the busiest bus line in Copenhagen 5A, emits 85 grams of CO2 per passengerkilometre and a Chevrolet Spark, the best selling car in Denmark in 2011, emits 90 grams of CO2 pr. passengerkilometre under the assumption of an occupancy of 1.3 persons per car. These comparisons show that there are significant environmental benefits from the use of light rail over buses and private cars.

To evaluate the effects of light rail in Inner and Outer Copenhagen, several different projects have been studied. These studies are based on route calculations to estimate the changes in the transport patterns with the implementation of different light rail systems. Furthermore, the results of the route calculations are used for economic analysis and to assess the profitability of the light rail projects.
The projected light rail systems all have the same objective of improving the public transport, reducing travel times and move travellers from cars to public transport and thereby reducing the overall CO2-emissions. Results of route calculations and economic analysis will be presented at conference, along with the expected improvements to the environment, globally and as well as locally.