



Ministry of Transport

Danish Infrastructure Investments

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The Danish Transport Strategy

In 2009, seven out of eight parties in the Danish Parliament agreed on a number of general principles and concrete initiatives as part of a new green transport policy that applies until 2020. The agreement was followed by a number of accords in 2009, 2010 and 2011.

These accords have produced a large number of infrastructure investments and projects. Some of these projects have already been completed, whereas we are going to see the results of the remaining projects in the coming years.

The Transport Strategy allocates funds for specific trans-

port projects including substantial investments in railways, infrastructure for busses and a new metro line in the city of Copenhagen.

The strategy also includes investments in ports, new and improved roads, infrastructure for bicycles and traffic safety initiatives.

Many of the projects, like the Fehmarn Belt fixed link between Denmark and Germany, have an international dimension and have a great significance for the interaction with the European infrastructure. The most pertinent of these projects are described in this folder.

Strong International connections

Strong International connections are vital for the Danish trade as the connections join Denmark with our neighboring countries. This applies to the Danish bridges, ports, railways, airports and the road network.

In 2009, Denmark and Germany reached agreement on the construction of a fixed link between the two countries. The Fehmarn Belt fixed link is a prioritised EU project. The fixed link will also strengthen the “green transport corridor” from Stockholm in Sweden to Palermo in Italy. According to plan, the connection will be ready for use in 2020.



The preferred technical solution for the Fehmarn Belt Fixed Link is an immersed tunnel for rail and road traffic. Based on the preliminary investigations and planning a tunnel is assessed to be the best solution in terms of navigational safety and environmental impact.

The tunnel will be one of Europe's largest infrastructure projects and will create a new strong connection between Scandinavia and the rest of Europe.

Facts – the Fehmarn Belt Fixed Link:

The tunnel will be 17.6 km long.

At a 110 km/h the journey time for vehicles will be approximately 10 minutes through the tunnel.

The coast-to-coast rail journey will take seven minutes.

To ensure that motorists have a sense of diversity during their journey there will be varied lighting and images in slow movement on the tunnel walls.

Land of many bridges

Over the past two decades Denmark has completed two fixed links. The Great Belt fixed link between Funen and Zealand, was finalised in 1998. Additionally, Denmark and Sweden are connected by the Oresund fixed link, which was finalised in 2000.

Both have proven to be a success: The amounts of traffic on the two links have exceeded the traffic forecasts. Also importantly, environmental benefits, including a reduction in CO₂ emissions, have been achieved in comparison to the situation prior to the completion of the bridges.

Use of both bridges incurs a user charge, which in turn is used to pay the costs associated with the construction of the bridges over a number of years. The same principle will be used at the Fehmarn Belt Fixed Link.

The Great Belt Fixed Link



Photo: Sund & Bælt

A hub for aviation

There are flight connections from Denmark to approximately 140 international destinations. Copenhagen Airport serves the majority of the international connections from Denmark. The airport is the largest international airport in Scandinavia. Airports such as Billund and Aalborg Airport also have many international connections.

In recent years Copenhagen Airport has with success played an active role in attracting low cost carriers. There are extended connections by railway, metro and motorway to Copenhagen Airport making the access to the airport from Denmark and from southern Sweden convenient and quick.



Photo: René Strandbygaard

Trade by Danish ports

Ports play a key role in terms of Danish international trade. The main share in terms of volume of all imports and exports is transported by ship. This makes ports a central node for freight transport also providing intermodal transport.

As a part of the political accords from 2009 and 2010, there will be investments in both ports and in hinterland connections to the Danish ports.

Denmark is also a proponent of initiatives like the motorways of the sea, which play an important role in restruc-

turing long-distance freight transport in Europe and improving its sustainability.

Denmark has introduced a pilot project that tests the use of Modular Vehicle Combinations on selected parts of the Danish road network. The largest national ports and rail terminals play a key role in the pilot project. Specific companies situated near the selected road network and appointed ports are invited to participate in the project, and provided funds for the necessary road adjustments.

More rail and metro

In recent years there has been invested heavily in upgrading the existing rail infrastructure in Denmark. The political accord states that the train must be a viable alternative to the car, and most of the traffic growth in the future must be absorbed by public transport.

Furthermore, investments will be made in a new Metro Line in Copenhagen and in the European Rail Traffic Management System (ERTMS).

The Danish authorities will conduct a program focused on repairing and replacing rail tracks and bridges in order to improve the reliability.



Photo: René Strandbygaard

Modern railway control and signaling systems designed to cope with high speed trains will replace the old systems.

This is a prerequisite of the establishment of a Danish “high speed strategy” the new “One-Hour” model. The premise of the model is a travel time of one hour by train between the four largest cities (Copenhagen – Odense – Aarhus – Aalborg) respectively.

As a part of the One-Hour model, a new 200 km/h line will be constructed in the TEN priority corridor between Copenhagen and Ringsted.

The introduction of an One-Hour model will:

Reduce the travel time between Copenhagen and Aalborg from 4½ hours to 3 hours and between Copenhagen and Aarhus from 3 hours to

Reduce train passengers travel time by 3.5 billion hours annually.

Shift transport from road to rail.

Reduce CO₂ emissions and congestion on the major roads.

The railway section is scheduled to open in 2018 and is due to play a key part in connecting Copenhagen to the Fehmarn Belt Fixed Link between Denmark and Germany.

In cooperation with the two municipals of the centre of the capital (Copenhagen and Frederiksberg) an extension of the existing metro lines in the city of Copenhagen with a new city metro line encircling the central part of the city has been decided.

A computer animation of the Fehmarn Belt tunnel



Source: Femern A/S

The new line will have interchanges with the existing lines and busses as well as with regional railway lines and intercity trains. The new city metro line will improve the network of public transport in the City of Copenhagen significantly.

In January 2009 the Danish Parliament approved funding for a signalling replacement programme for the renewal of all signalling on the Danish railway mainlines and regional lines and Copenhagen S-line. The ERTMS system will harmonize the european signal systems and make rail transport more efficient

The objective of the Signalling Programme is to increase efficiency of Danish and European train operations, ensure a high homogenous safety level and increase cost efficiency and flexibility of the system.

The new ERTMS system will provide:

High regularity

Improved transport safety

More efficient services

High speed trains

Improved traffic management information for passengers

Possibility for fully automatic metropolitan trains

The Signalling Programme is currently at the end of the procurement phase (2009 – 2011) for the ERTMS system. Installation will start on early deployment lines in 2017 and 2018 for total testing in commercial service before the main roll-out of the new signalling system. The main roll-out is planned for a period of four years from 2018 through 2021 with an overlap between lines, prioritised according to the traffic level, with roll-out taking place first on the most heavily used lines (main lines).

Other public transport solutions will be financed through a new fund. This includes a new light railway in Aarhus, the second largest city in Denmark.

The map shows the investments in the railway system.

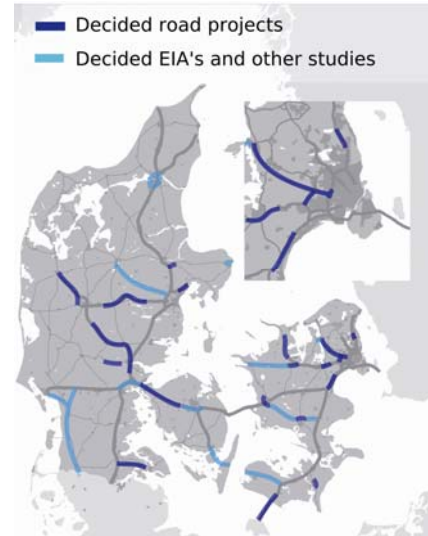


Better mobility on roads

Danish transport policy aims at reducing congestion on roads in relation to the main international road corridors, road connections to ports and the road network approved to modular concept vehicles.

Particularly the international road sections E20, E45 and E47, which are part of the trans-European TEN-T road network, face congestion problems in rush hours especially in urban areas. A number of road projects have been initiated in the Copenhagen metropolitan area, areas on the island of Funen and in Jutland.

Furthermore, it has been decided to conduct several specific ITS projects on the TEN-T motorways, which includes variable speed



limits, dynamic traffic information, flexible traffic lanes etc., and a feasibility study on the implementation of a digital road network providing improved traffic management systems.

A 25 km 4 lane motorway between Sønderborg and Kliplev in Jylland is under construction. The motorway is carried out as a Public Private Partnership (PPP). The Kliplev-Sønderborg motorway is the first Danish motorway carried out as a PPP. In February 2010 a 30 year PPP partnership agreement was signed between the Danish Road Directorate and the private group KMG. The motorway is expected to open in 2012.



Photo: René Strandbygaard

Rolling investment program

As a part of The Green Transport Policy of 2009 a principle of “rolling investment” was agreed upon.

The rolling investment programme allows the political parties behind the agreement to meet regularly and check on the progress of ongoing projects, decide new projects and set new priorities. The time frame for the programme is 2020.

The concept insures that infrastructure projects will be coordinated and prioritised in accordance with the resources available. At the same time the responsible parties will be able to follow the projects over time.



Photo: René Strandbygaard

The Infrastructure Fund

As a part of the agreement on the new green transport policy in 2009, a major Infrastructure Fund was established.

The means from the fund provide the funds for the concrete projects and other infrastructural efforts that have been decided until 2020 as a part of the political agreements.

The Infrastructure Fund is financed partly by tax revenues and partly by other sources such as returns from the sale of public assets, road pricing including toll from the Ore-sund and the Great Belt fixed link and tax financed means.

Political priorities can be made within the means available.

The Fund is dynamic and replenished with additional means as new sustainable sources of funding are identified, as well as with savings on projects decided within the Fund.

Also “land value capture”, where investments in transport increases land value, is used as a part of the financing.

Improving the infrastructure for cyclists

Cycling is healthy and reduces pollution and traffic congestion. Denmark is a country of cyclists. With a 100-year old cycling tradition, the bicycle occupies a strong position as a means of transportation in Denmark.

Denmark is an ideal cycling country. Denmark is flat with a mild climate, which makes it possible to use the bicycle most of the year.

In Copenhagen one in three residents commute to their place of work or education by bicycle. Other cities such as Odense and Aarhus also have very high number of people who use the bicycle on a daily basis.

As a part of the transport strategy from 2009 funds were allocated to improving the infrastructure for cyclists in the years from 2009 to 2014. The goal is to improve the conditions for the cyclists in order to make the bicycle an even more attractive, widespread and secure way of transport for both work and leisure purposes.

The money is allocated to both projects on the main state roads and locally and regionally initiated projects on municipal roads. One of the projects focuses on improving conditions for local bicycle tourism on the many islands in Denmark.



Photo: Ulrik Jantzen

Traffic Safety

In 2011 the number of killed and injured in traffic was the lowest since the statistical records started around 1930. The efforts to reduce the number of killed and injured in traffic include improvement of infrastructure as well as traffic safety campaigns and the development of new methodologies.

Each year two cities will be appointed “traffic safety cities of the year”. They will receive funds to create new, innovative projects, which will improve the traffic safety in the city.

Long term planning

As a part of the political agreement from 2009 it has been decided to initiate a long-term planning effort to analyse further large-scale infrastructure demands in the years after 2020 and identify major strategic options for further infrastructure investments beyond 2020.

The strategic analyses focus on three central themes that have a vital impact on the long-term infrastructure planning in Denmark. The three themes are: 1) The road system in Jutland, 2) the east-west connections between Jutland, Funen and Zealand, and 3) the ring roads and public transportation in the Greater Copenhagen area. As a part

of the analyses a number of specific major road and rail projects will be considered.

Three central themes for the analyses

The main roads of Jutland

Connecting the different parts of Denmark (fixed links)

Public transport and main roads in the Copenhagen region

More information

The Ministry of Transport: www.trm.dk/en

The Danish Road Directorate: www.vd.dk

The Danish Transport Authority: www.trafikstyrelsen.dk

The Copenhagen Metro: www.m.dk

Sund & Bælt: www.sundogbaelt.dk

Rail Net Denmark: www.banedanmark.dk

Visit Denmark: www.visitdenmark.dk

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