



Ministry of Transport

The Danish Transport System

Facts and Figures

eu2012.dk

DANISH PRESIDENCY
OF THE COUNCIL OF THE
EUROPEAN UNION 2012



Udgivet af: Ministry of Transport
Frederiksholms Kanal 27
DK-1220 København K

Udarbejdet af: Transportministeriet

ISBN, trykt version: 978-87-91013-69-0

ISBN, netdokument: 978-87-91013-70-6

Forsideill.: René Strandbygaard

Tryk: Rosendahls · Schultz Grafisk a/s

Oplag: 500



Contents

The Danish Transport System	6
Infrastructure	7
Railway & Metro	8
Road Network	10
Fixed Links	11
Ports.....	17
Airports.....	18
Main Transport Corridors and Transport of Goods	19
Domestic and International Transport of Goods	22
The Personal Transport Habits of Danes.....	24
Means of Individual Transport.....	25
Privately Owned Vehicles	27
Passenger Traffic on Railways.....	27
Denmark - a Bicycle Nation.....	28

The Danish Transport System

Danish citizens make use of the transport system every day to travel to work and school as well, as they rely on it in their free time for transport. Danish businesses also depend on a well-functioning transport system to facilitate an efficient transport of goods and to enable them to compete on local as well as global markets. The Danish society is highly dependent on a well-integrated and modern infrastructure as well as efficient and reliable public transport to meet the demands of citizens and businesses.

An efficient transport system is a key driver in establishing long term growth in Denmark and in Europe at large.

The Danish State has made large investments in new technologies, in modernising and updating existing infrastructure and to develop new infrastructure and services.

In the coming years, further infrastructure investments are to be made in order to ensure a high level of mobility, flexibility and reliability.

This pamphlet provides a brief overview of the Danish transport system by introducing central facts and figures that describe aspects of the transport sector.

Infrastructure

Denmark is a relatively small country of approximately 43.000 km² including more than 400 islands. A well-connected transport system in Denmark is therefore dependent on several types of infrastructure solutions in order to achieve a high level of mobility that integrate all regions.

Table 1 describes how the transport infrastructure in Denmark is divided between roads, railways, sea ports and air ports.

Table 1 | Infrastructure (2010)

Km	
The Total Road Network	73,574
Motorways	4,130
Dual carriageways	379
Other roads	72,065
The Total Railway Network	2,667
Of which managed by Banedanmark	2,132
Copenhagen Metor	21
Other railway networks	514
No.	
Stations and halts	549
Seaports	137
Airports	23

Source: Statistics Denmark

Railway & Metro

The Danish railway network consist of 2667 km of railway of which 81 % is managed by Rail Net Denmark (*Banedanmark*). The railway network is extensive and integrates the hinterland regions into the main transport network.

Rail Net Denmark oversees more than 2,000 km of railway tracks. 2,700 train departures are initiated every day amounting to almost one million trains a year on Danish railway tracks.

To maintain a highly developed and modern railway sector, Denmark will be the first country to fully implement the common European signalling system ERTMS. This

will contribute to an improved railway sector in Denmark as well as it will provide benefits for the European railway network at large.

On a local scale, the first part of the Copenhagen Metro opened in 2002 and it was fully completed in 2007 providing quick and reliable underground connections to the wider Copenhagen area. It connects the city centre to suburban areas and Copenhagen Airport. A journey from the airport to the centre of Copenhagen merely takes 14 minutes and the metro departs every fourth minutes. The metro lines, M1 & M2, cover 21 km – 10 km of tunnel and 11 km of embankment and elevated tracks. In total 22 stations are served, of which nine are tunnel stations.

Due to its high level of reliability, 24-hour service and great record of customer satisfaction, the Metro in Copenhagen was awarded “Best Metro” and “Best Driverless Metro” at the 2010 MetroRail Congress in London.

An enlargement of the Copenhagen Metro is currently under construction that will extend it with an additional circle line of 15.5 km. The new City Circle (*Cityringen*) will serve 17 stations and provide efficient and reliable public transport to areas in the city, which are densely populated.

The new metro lines, M3 and M4, are expected to be ready for operation in 2018.



(Photo: René Strandbygaard)

Road Network

Measured in kilometres, the road network is the most extensive type of transport infrastructure in Denmark.

The total Danish Road Network consists of 73,574 km, of which 1,130 km are motorways.

Approximately 5 % of all roads are state roads while the remaining 95 % are owned primarily by local municipalities.



(Photo: Ulrik Jantzen)

Fixed Links

Denmark contains more than 400 islands of which the largest are Funen and Zealand, where Copenhagen is situated. Several bridges connect the various islands with the Danish mainland. These bridges are essential to an integrated Danish transport system, as well as they link Scandinavia together with Continental Europe.

The vast majority of Danish roads and bridges are free of charge for the individual user, however, there are a few exceptions.

Denmark is currently home to two major infrastructure projects that are financed by user charges - the Great Belt fixed link between the islands of Zealand and Funen, and the Øresund fixed link between Denmark and Sweden. In 2020, a fixed link across the Fehmarn Belt, between Denmark and Germany, is expected to open for traffic. The Fehmarn Belt fixed link will also be paid by user charges.



(Photo: Sund & Bælt)

Great Belt Fixed Link

The 18 km long fixed link across the Great Belt comprises two bridges and a tunnel. The railway opened in 1997 and the motorway in 1998. The construction costs for the entire project totalled € 2.9 billion in 1988 prices corresponding to approx. € 4.8 billion in 2010 prices. The 6.8 km long east bridge is the third largest suspension bridge in the world.

Before the motorway section of the fixed link opened in 1998, the Average Annual Daily Traffic (AADT) across the Great Belt was approx. 8,000 vehicles. Today it is approx. 29,000 vehicles.

Table 2 | Traffic Numbers on Fixed links – AADT (2010)

	Great Belt	Øresund
Number Passenger Cars	25,469	17,808
Number of Lorries	3,022	900
Number Passengers by Train	23,098	30,196

Source: www.sundogbaelt.dk

Øresund Fixed Link

With a total length of 15.9 km, the Øresund fixed link is the longest combined road and rail bridge in Europe. The journey across the bridge takes less than 30 minutes by car or train.

The fixed link across Øresund comprises a cable-stayed bridge and a tunnel. The fixed link opened in 2000 and is the longest combined road and rail bridge in Europe. The construction costs for the entire project totalled € 2.0 billion in 1990 prices corresponding to approx. € 3.0 billion in 2010 prices.

Before the fixed link opened in 2000, the AADT across Øresund was approx. 8,000 vehicles. Today approx. 19,000 vehicles per day use the fixed link, while approx. 6,000 vehicles cross Øresund via ferry between Elsinore and Helsingborg.

Furthermore, approx. 29,000 passengers per day cross the fixed link via rail. A substantial number of these passengers are commuters who live in Sweden and work in Denmark or vice versa. The fixed link has thus been a catalyst for regional integration and the creation of the Øresund Region.



(Photo: Sund & Bælt)

Fehmarn Belt Fixed Link

In 2020, a 19 km long fixed link across the Fehmarn Belt between Denmark and Germany is expected to open. It will consist of a combined motorway and electrified double track railway. The fixed link will significantly improve the transport corridors in Denmark as well as internationally.

The Fehmarn Belt fixed link is an integral part of the Trans-European Transport Networks connecting Scandinavia and Continental Europe. The Danish government is responsible for the planning, designing, financing, construction and operation of the fixed link, which will be owned by Denmark.

The fixed link across the Fehmarn Belt will improve the transport connections between Scandinavia and mainland Europe. It will improve the market conditions for railway transport and for the transport of goods, as the current 160 km detour via the Danish-German border in Jutland can be avoided.



(Illustration: Femern A/S)

A large proportion of the flow of goods via Funen and Jutland to Germany is expected to be substituted by the more direct corridors available with the new Fehmarn connection to Germany. This will reduce the amount of traffic on the Great Belt Fixed Link and thereby ease capacity constraints.

Today approx. 5,500 vehicles cross the Fehmarn Belt on the ferry service between Rødby and Puttgarden. In 2025 - 5 years after the opening of the Fehmarn Belt fixed link - the number is expected to rise to 11,000.

Ports

Denmark has more than 130 commercial ports of various sizes and areas of expertise from large scale shipping terminals engaged in international trade to small municipal ports serving the local industries.

On the west coast of Denmark ports are generally located in areas of low population density, providing ample room for expansion. At the same time, however, they are faced with challenges of low water depths due to continuous pressure of natural erosion. In eastern parts of Denmark, the picture is generally reversed as water depth is often plentiful while many ports are situated near urban areas.

The Danish seaports are essential gates to international transport to and from Denmark and around 2/3 of all Danish exports pass through the seaports. The largest commercial ports in Denmark – in terms of freight turnover – are the ports of Fredericia (12,950 tonnes in 2010) and Aarhus (9,390 tonnes in 2010) both situated on the peninsula of Jutland.

Danish ports are central to the national transport of passengers and handle more than 44 million passengers a year.

Finally, more than 1 million tonnes of fish are landed every year in Danish ports - worth some 3 billion DKK – almost €400 million.

Airports

In 2010, 26.6 million passengers arrived and departed at Danish airports. Copenhagen Airport (Kastrup), the largest airport in Scandinavia, is a central aviation connection point between Scandinavia and the rest of the world.

Copenhagen Airport has approximately 140 destinations and is by far the busiest airport in Denmark carrying 80 % of all passengers in 2010.

The country's second biggest airport is Billund Airport in Southern Jutland. Billund Airport carried 10 % of all passengers in 2010 and also serves as a connecting point to a number of international destinations.



(Photo: Arne V. Petersen/Københavns Lufthavne)

Main Transport Corridors and Transport of Goods

The existence of efficient transport corridors is essential to a modern and well-developed transport system. Transport corridors contribute by facilitating the mobility of goods and passengers across borders, while at the same time linking the domestic transport network together.

The main transport corridors in Denmark connect Denmark to its European neighbours along two north-south axes as well as a west-east axis (see figure 3.1).

A main corridor runs through Jutland from the Danish-German border in the south to the northern part of Jutland, where it links up with ferry connections to Sweden and Norway.

A second north-south corridor connects the eastern part of Denmark (Zealand) to neighbouring countries. From Elsinore in the north and the Øresund fixed link near Copenhagen, it runs through the eastern part of Denmark to the south, where ferry connections across the Fehmarn Belt connect the Danish transport system to Germany.

When the Fehmarn Belt fixed link opens for service in 2020, Danish and German transport networks will become further integrated and the corridor will become a major link between Scandinavia and Continental Europe.

Along the west-east axis of Denmark, the Danish regions are tied together by the Little Belt Bridges and the Great Belt Bridge. These infrastructure projects have increased the mobility of the transport system greatly by providing road and rail connections between regions that used to be separated by waters.

Figure 1 | Transport Corridors in Denmark



In terms of traffic a total of 10,940 lorries crossed the Danish borders in the 4th quarter of 2010.

59 % of the total border traffic with lorries passed through the Danish-German border in Southern Jutland, making it the busiest border connection.

The Øresund bridge between Denmark and Sweden is the second busiest with 19 % of the total border traffic while the ferry connections between the Denmark and Germany accounted for 12 % of total border traffic.

Approximately 9 % of road freight border crossings went through the Northern Jutland connections to Sweden and Norway.

Table 3 | Lorries Entering and Leaving Denmark
Sorted by Border Connection Per Day (4th quarter 2010)

Land connection	5.988	(59 %)
Øresund	1.979	(19 %)
Gedser-Rostock, Rødby-Puttgarden	1.222	(12 %)
Kattegat/Skagerrak	894	(9 %)
Other	107	(1 %)
Total	10.190	(100 %)

Source: International Transport Denmark (ITD)

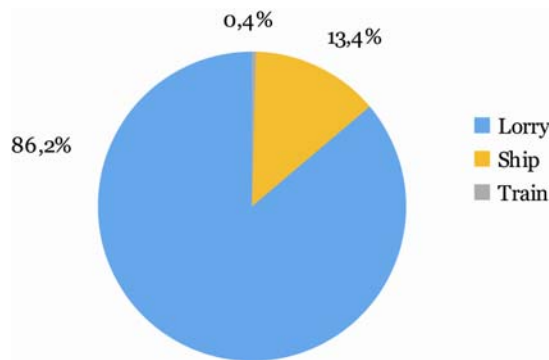
Domestic and International Transport of Goods

Denmark is a trading nation. In 2010 the sum of imports and exports amounted to 57 % of GDP. Thus, the transportation of national and international goods takes up a large part of the infrastructure capacity.

In 2009, the total volume of national transport carried out by lorries and ships was 165 million tons and international transport was 99 million tons.

The most common means of domestic freight transport is road transport of goods by lorry. As indicated in figure 2, lorries represent 86 % of the national transport of goods measured in tonnes. The remaining transport of goods is primarily carried out by ship, while railway and air transport of goods remain minor contributors in the national transport of goods.

Figure 2 | Share of Tons of Goods Transported by Lorry and Ship. National Transport (2009)



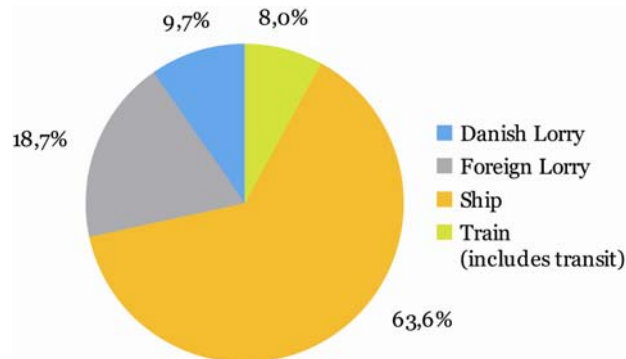
(Source: Statistics Denmark)

In terms of international transport of goods, ship is the most common mode of transport accounting for around 64 % of the total volume of goods.

Danish lorries represent 10 % of the international transport of goods while foreign lorries are responsible for 19 %. Finally the railway accounts for 8 % of international transport of goods.

At the same time, however, railway freight constitute 75 % of transit traffic on the railways and 25 % of the total international transport on Danish railways.

Figure 3 | Share of Tons of Goods Transported by Lorry, Train, and Ship. International Transport (2009)



(Source: Statistics Denmark)

The Personal Transport Habits of Danes

According to the Technical University of Denmark (DTU), the average Dane travelled 39 km a day in 2009, thus spending an average of almost 56 minutes on transport every day. These characteristics differ between rural and urban areas, between small and large family sizes etc., as such parameters represent different needs and opportunities with regard to transport.



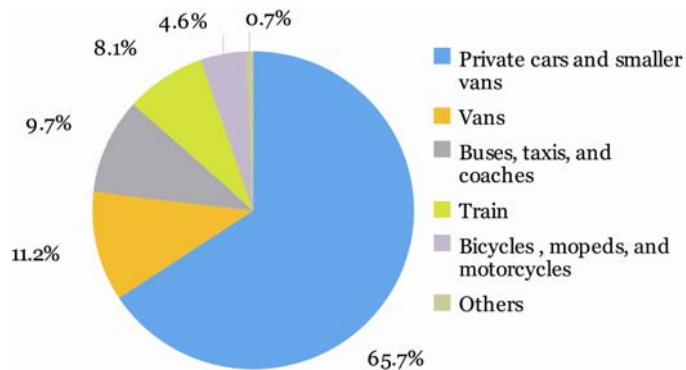
(Photo: René Strandbygaard)

Means of Individual Transport

As in most other European countries, privately owned vehicles are the most common mode of personal transport in Denmark. Private cars and small vans are the vehicle of choice for approximately 66 % of the distance travelled by private persons.

Public transport, including buses, coaches, taxis and trains, represent 18 % of distance travelled.

Figure 4 | Share of passenger distance travelled in terms of mode of transport (2009)

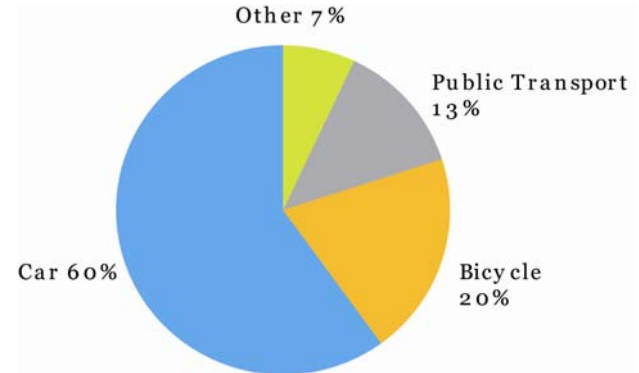


Source: Statistics Denmark

A central purpose of the transport system is to facilitate transport to and from work. Figure 5 describes the Danish commuter traffic.

Private vehicles are the most frequently used mode of transport representing 60 % of all commuter trips. However, bicycles make up a remarkable share by representing more than 20 % of all trips. Public transport is also a major contributor by providing transport to 13 % of the commuters.

Figure 5 | Trips Divided by Mode of Transport when Commuting (2009-2010)



Source: Transport Habit Investigation (2009-2010)

Privately Owned Vehicles

In 2010, 2.1 million passenger cars were registered in Denmark, corresponding to 383 passenger for every 1,000 inhabitants.

Most Danish households only have disposal of a single vehicle (46 %). In addition to this a large number of households (41 %) do not have a car at their disposal.

The low number of vehicles per household can in part be explained by the Danish tax code that makes it expensive to buy and own cars in Denmark compared with other EU countries. The existence of well-functioning alternatives to private ownership of cars such as an extensive bicycling infrastructure and modern and reliable public transport furthermore reduce the need for private ownership of vehicles.

Passenger Traffic on Railways

239 million passengers used the railway network in 2010. The S-train was the most frequently used railway service for passenger transport with 93 million passengers.

The S-train services connect Copenhagen to its surrounding suburbs and represents 39 % of all passenger traffic. The Copenhagen Metro furthermore transported 52,5 million passengers in 2010.

At national level, 70 million passengers travelled on the national railway network that connects the Danish regions together.

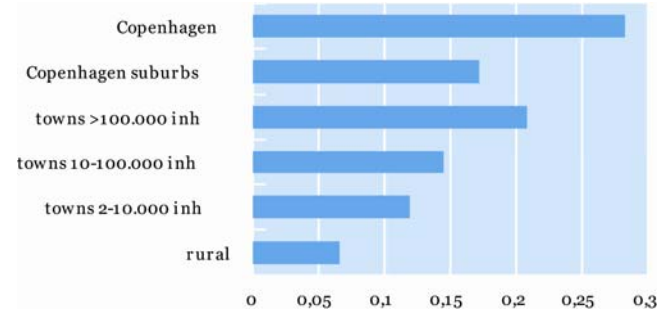
In total more than 6,5 million kilometres was travelled by passengers on the Danish railway network in 2010.

Denmark - a Bicycle Nation

Denmark is one of the leading nations in the world for bicyclists. 95 % of the Danish population own a bicycle and the Danes ride more than 800 km per year on their bicycles on average. The bicycle infrastructure is very well established in Denmark with about 9,000 km of separated bike paths and bike lanes in cities and in the countryside.

The bicycle is a very popular mode of transport, especially in urban areas. As shown in Figure 6, the use of bicycles is more predominant in the larger cities. Copenhagen has the highest share of bicycle trips with 28 % in 2009-2010. In less urbanised areas the share of bicycle trips is correspondingly lower.

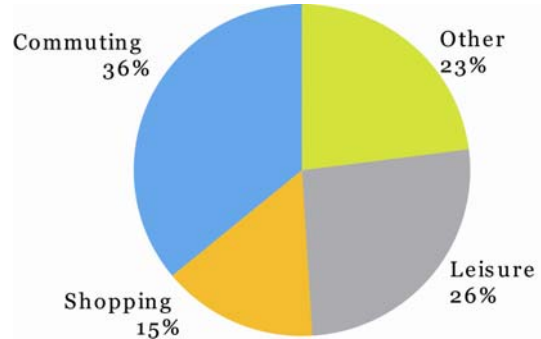
Figure 6 | Bicycle trip ratio by urbanisation (2009-2010)



The bicycle is a popular mode of transport for a number of purposes. It is especially popular for commuting to work and education. As mentioned above 20 % of all commuter traffic is made by bicycle.

At the same time, commuting represents 36 % of all bicycle rides. Leisure and shopping are other predominant purposes for using the bicycle as a mode of transport in the everyday life of Danes.

Figure 7 | Bicycling trips divided by purpose (2009-2010)





(Photo: Cyklistforbundet)

ISBN 978-87-91013-69-0

Ministry of Transport
Frederiksholms Kanal 27
DK-1220 København K

Phone + 45 41 71 27 00

Fax +45 33 12 38 93

trm@trm.dk

www.trm.dk