

Summary in English

The Danish Infrastructure Commission: The Danish Transport Infrastructure 2030

A world-class transport system

The Danish Infrastructure Commission was appointed in November 2006 following a government decision. The terms of reference for the work of the commission state that "the overall objective is for Denmark to maintain and develop its position as one of the countries in the world with the best transport systems, despite the fact that growing traffic volumes are increasing the requirements in the long term".

On this background, the commission has been given the following main tasks:

- To analyse and assess the key challenges and development potential for the infrastructure and national traffic investments until 2030.
- To identify and assess the strategic options and priorities and to put forward suggestions to strengthen the basis for the national investment decisions in the transport area.

Furthermore, the commission was given the task of analysing and assessing proposals for strategies for handling a number of selected issues.

These include the issue of cost-effective organisation and management of construction projects, the handling of preservation, climate and environmental concerns, the opportunity for better utilisation of the infrastructure by means of modern IT, and the significance of the long-term physical planning.

In view of the terms of reference and the timeframe of the work, the commission has mainly focused on the national road and rail infrastructure, which is managed by the government and for which parliament makes decisions through construction laws and the annual budgets. The commission has included and discussed in its work a number of different proposals for instruments and effects which may be relevant to consider in infrastructure policy towards 2030.

The commission has not analysed all proposals in detail, but has assessed a number of different options, which are recommended as forming part of the further prioritisation. In this connection, the commission points out that government will prepare a traffic investment plan in 2008.

The terms of reference of the work of the commission state that "...the intention is not for the commission to provide analyses of or recommendations for the organisation of the traffic sector or its concrete structure ...". On this background, it is outside the scope of the commission to make decisions regarding ownership structures and taxes within the transport sector, including road pricing as well as the financing of the public infrastructure.

The commission is pleased to note the interest and debate which its work has caused, in political circles as well as in the media and among the public. Transport infrastructure will be a significant focus area for the next decades, if Denmark is to maintain its economic growth and develop its position as one of the best countries in the world in the transport area.

Recommendations

We know that the transport system faces large challenges, but where should we concentrate our efforts if we want to prepare for the future in the best possible way? The Danish Infrastructure Commission recommends a targeted effort which will strengthen the public as well as the individual transport system. We must concentrate our efforts where the economic return is the highest.

The Danish Infrastructure Commission recommends six focus areas to be used as the starting point for planning the future transport system.

Transport is about quality of life and prosperity - about connections between people, families and businesses. Infrastructure contributes to ensuring that we can get to work, and that products and goods can be transported to their destination in the shops and to the consumers. This makes infrastructure a vital cornerstone for our welfare and prosperity.

Mobility is a key element in the competitiveness of businesses - and thus also for the growth conditions of Danish society. Efficient transport systems contribute to ensuring that goods can be produced in the best and least expensive location. The production and distribution of goods become simpler and less expensive, because faster and more reliable delivery to the consumers is ensured. And high mobility contributes to businesses being able to attract the right manpower.

At the same time, it is important to be aware that the development in the climate and environmental areas may influence our planning of infrastructure as well as urban planning. We must also expect that the measures available to us are constantly being developed, and that technological possibilities which we cannot imagine today will be developed. These are factors which are likely to influence the planning process.

Mobility in spite of increasing traffic volumes

Mobility is important to us as individuals to be able to do the things we want - and the individual has mobility as a high priority. Almost everybody is in contact with the transport system on a daily basis - on our way to work, to visit family, to leisure activities or to travel to the countryside. The average Dane spends more time on transport than on completing their primary education, and Danish households spend an average 15 pr. cent of their income on transport. That is more than what we spend on food.

Traffic volumes increase according to our prosperity. We no longer work close to our homes, we buy more goods, which are transported over longer distances, more people have cars - and a second car - and more people are able to participate in leisure activities which involve transport.

Today, Denmark has a transport system of high international standard. However, during the past years, increasing congestion and capacity problems on the road and rail networks during peak hours have arisen. These problems are mainly linked to the Copenhagen area and the Triangle Region in Jutland. Congestion problems on the national road network have increased throughout the past few years. Because of capacity problems on the rail network, it is impossible to provide more train services on several central rail lines.

International surveys place the Danish infrastructure among the best in the world.

The number of kilometres of national roads carrying more than 70 pr. cent of the capacity of the road (incipient congestion or worse) for more than 200 hours a year was approximately 160 km in 2005.

In 2002, drivers in the Copenhagen area queued on the roads for 100,000 hours every day, of which 28,000 hours were on the national road net. The 100,000 hours correspond to an annual economic loss of DKK 5.7 billion.

In 2005, during morning peak hours between 7 and 8 am, the average speed on the Køge Bugt motorway near Solrød towards Copenhagen was approximately 38 km/h.

All other things being equal, an increase of 70 pr. cent in the demand for traffic on national roads is expected by 2030, corresponding to 2.2 pr. cent annually.

Passability on the infrastructure in the Copenhagen area is among the highest in the European capitals.

In 2006, 16 pr. cent of all trains outside the commuter train network (the S-rail) were more than 6 minutes delayed. On the S-rail, 11 pr. cent of trains were more than 2½ minutes delayed. Approximately half of the delays were due to the infrastructure.

On several central rail lines, e.g. in the Copenhagen area, it is not possible to provide more trains because of the capacity of the railway network.

The state spent approximately DKK 6 billion of the 2007 budget on infrastructure. For roads, approximately DKK 2.2 billion were spent on construction, and approximately DKK 1.1 billion on operation and maintenance in 2007. For railways, approximately DKK 0.3 billion were spent on construction, and approximately DKK 2.2 billion on renewal and maintenance.

It is estimated that new technology will be able to boost the utilisation of the existing infrastructure by 5-10 pr. cent, and reduce the number of traffic accidents by up to 30 pr. cent.

Since the 1980s, traffic on the entire Danish road net has increased by approximately 50 pr. cent. In the same period, the emission of NO_x, CO, HC and particles has almost halved. SO₂ emissions have almost completely been removed. But the emission of CO₂ has increased by almost 30 pr. cent.

Despite the increase in traffic since the 1970s, the number of people killed in traffic has been reduced from approximately 1,200 to 300 fatalities annually.

Forecasts show that towards 2030, traffic on the largest roads can be expected to increase by nearly 70 pr. cent. This corresponds to an average annual growth rate of 2.2 pr. cent. This is lower than the latest historical development, but it is a growth occurring on an increasingly loaded overall road network. In the places with critical congestion, even small increases in traffic volume may cause traffic to stand still. Today, there are already several roads where even the smallest increases in traffic volume cause traffic to stand still.

Forecasts show only a minor increase in the demand for rail services. However, the forecast does not assume any improvements of traffic services, which have been an important factor in the growth in train traffic in the past decades. An analysis by the Danish Ministry of Transport, which includes the effects of new projects, shows a growth in traffic of 34 pr. cent for S-trains and regional trains for the period 2004-20. Furthermore, it has not been possible to include interdependent effects between road and rail forecasts. For instance, international experience indicates that congestion on the road network will increase the number of users of public transport.

Thus, the continued demand for mobility requires that we continue to develop our infrastructure in the future.

At the same time, the continuously increasing traffic is a contributing cause of a number of climate and environmental challenges, which we must make sure are handled. This may be done by strengthening public transport markedly, not least in the urban areas.

Infrastructure does not come for free, and so it is essential to carefully prioritise the effort. Coherent planning will ensure that the effort is considered in its totality, including also urban areas.

It is the commission's view that a solution to the future challenges facing the Danish transport system requires that, over the next decades, substantially more financial resources are allocated to the development of the infrastructure than is the case today.

The robust "H"

For many years, the Danish infrastructure has been developed on the basis of the vision of "the large H", which connects north, east, south and west with effective road and rail connections and ensures connections to other countries. The large H has proved its robustness, and the H should continue to form the solid basis for the development of our infrastructure.

In the coming years, there will be a need to strengthen and consolidate the H, and to remove bottlenecks in a number of the corridors and hubs where traffic is heaviest and will develop the most. The quality of the train connections between the Danish regions must be strengthened, so that we can have faster and more attractive trains.

We must ensure that the large H becomes the robust H.

To ensure the appropriate use of resources, the Danish Infrastructure Commission recommends that efforts are concentrated within the following six concrete focus areas until 2030:

- The ring connections must be completed in the Copenhagen area on roads and rail
- A complete plan for the development of the infrastructure in the urban region of East Jutland must be prepared
- Effective linking of the individual regions to the overall transport corridors and hubs must be ensured
- The Danish gateways towards the rest of the world must form a central part of an effective transport network
- Intelligent technological solutions must ensure optimal utilisation of the infrastructure
- The effort to limit the impact of transport on the environment and the climate must be intensified.

The ring connections must be completed in the Copenhagen area on roads and rail, because

- the increasing traffic entails a need to eliminate a number of concrete bottlenecks and develop a traffic network which increases the flexibility of the transport system - also across the existing railways and roads
- the number of commuters into, out of and across the region continues to increase, and the foundation for public transport as an alternative to road traffic can be strengthened
- Copenhagen as an international metropolis depends on an efficient and reliable infrastructure to attract businesses and manpower.

A complete plan for the development of the infrastructure in the urban region of East Jutland must be prepared, because

- towards 2030, a well-functioning traffic infrastructure must be established to support the current development towards a functionally coherent urban region
- there are incipient congestion problems on the motorways, and it is assessed that there is an unused potential in public transport in terms of e.g. commuting

- with due diligence, a productive collaboration between the future infrastructure and urban and commercial development can be ensured, also taking the environment into consideration.

Effective linking of all regions to the overall transport corridors and hubs must be ensured, because

- effective connections to the overall infrastructure will support the growth conditions
- relatively small investments cannot replace large investments, but may often provide significant improvement of passability
- certain competence clusters are located at some distance from the main corridors.

The Danish gateways towards the rest of the world must form a central part of an effective transport network, because

- the possibility of reaping the benefits of globalisation increases if it is easy for people and goods to get to and from Denmark
- the growing goods transport will increase the pressure on the international connections and goods hubs, as well as the need for effective collaboration between the transport modes
- there is expected to be increasing focus on infrastructure and the quality of the international connections, in terms of localising businesses.

Intelligent technological solutions must ensure optimal utilisation of the infrastructure, because

- it will become increasingly important that we utilise the existing infrastructure in the best possible way
- there are already a number of possibilities for improving traffic flows through better capacity utilisation, which is being used successfully abroad
- new technological solutions may reduce the impact of transport on the climate, the environment and road safety.

The effort to limit transport's impact on the environment and the climate must be intensified, because

- the expected increases in traffic volume entail a risk that the environmental impacts of traffic, in the form of e.g. particles and noise, will increase
- there is a need to disengage traffic development from CO₂-emissions. This will require hard work in the coming years. An important part of the effort is to ensure that as large a part of the traffic growth as possible takes place in public transport
- continued upgrading of the infrastructure will require further focus on environmental values, as the transport sector affects the Danish environment.

Need for a cross-disciplinary effort

The Infrastructure Commission recommends that, besides the effort within the six focus areas, the following basic principles are used for the cross-disciplinary effort:

- That, as a basis for the prioritisation, investments are made in projects with the highest economic return
- That the necessary maintenance of infrastructure is ensured
- That private competences are involved in connection with the organisation and management of construction projects
- That the physical planning, including urban and commercial development, is coordinated with the infrastructure planning through unified planning
- Further focus on improvement of road safety.