As a result of Russia’s and the Baltic states’ integration within the international division of labour, as well as of the European Union’s expansion to the north and east, the Baltic Sea region has become Europe’s boom region. Northern Germany holds a key position in this system of coordinates; in the north are the highly developed economies of Scandinavia and in the south, the densely-populated metropolises of Western Europe. The dynamically growing transformation countries can be found in the east.

Economic relations between Germany and the Scandinavian countries (Denmark, Sweden, Norway, Finland) are traditionally strongly pronounced. At approximately 106 million euro, German foreign trade with Scandinavia constituted some 6 percent of Germany’s entire foreign trade in 2007. This made Scandinavia the sixth most important trading partner for Germany; despite its relatively low population (24.5 million people) it is ahead of highly populous economies such as China, Japan or Russia. Conversely, Germany is even the most important trading partner in the world for Scandinavia (source: German Federal Office of Statistics).

Northern German companies are a driving force of this growth: just under 1,400 companies based in Hamburg maintain active business contacts with Denmark, 1,000 with Sweden and some 800 companies each with Norway and Finland. In terms of significance for Hamburg’s economy, therefore, Denmark ranks at fourth, Sweden at eleventh, Norway at fifteenth and Finland at sixteenth place (source: Hamburg Chamber of Commerce). The ties between the economy in Schleswig-Holstein and the Scandinavian countries are even stronger. Here, Denmark, Sweden, Norway and Finland rank at 3rd, 10th, 12th and 13th place.

The economic growth in the Baltic Sea region is having a corresponding effect on transportation trends. Sea transportation alone will rise by 65% by 2020 (source: ISL Baltic Consult). This dynamic development offers enormous opportunities for growth and employment. In order to make the most of these opportunities, an adequate transportation infrastructure is obligatory. The fixed link across the Fehmarnbelt provides huge opportunities for both regions to shift economic balances in Europe a little further northwards; Northern Germany and Scandinavia will profit from and promote this growth.
I. The project: fixed link across the Fehmarnbelt

Project description

The Fehmarnbelt is the break in the direct land link between the greater Copenhagen area/Southern Sweden in the north and the Hamburg/Lübeck region in the south. The shortest route from Copenhagen to continental Europe leads across this strait, which extends for just under 20 kilometres.

There has therefore long been a desire for a fixed link across the Fehmarnbelt, at least since the island of Fehmarn was connected with the German mainland by the Fehmarnsund bridge in 1963. Regular ferry operation across the Fehmarnbelt was also commenced in that year. Some 25 million euro have been invested so far in order to investigate the financial and economic sustainability – and the environmental compatibility – of a fixed link from Rødby (Lolland) to Puttgarden (Fehmarn) [source: Fehmarnbelt Forum]. Several construction variants for the link were analysed in relation to investment costs, operating and maintenance costs, environmental effects, traffic capacity and safety. A cable-stayed bridge with a four-lane motorway and a two-lane railway was selected as the optimum variant.

Construction of the Fehmarnbelt link will be Northern Europe’s biggest infrastructure project. An estimated 95 million working hours and 265 000 lorry-loads of sand, gravel and soil will be required for the construction [source: Focus.de]. With a length of 19 kilometres and a construction period of some 7 years, Europe’s longest bridge – and the ninth-longest in the world – will be created. The construction costs for the bridge total some 5.6 billion euro including development of the infrastructure connections on the German and Danish side. This investment will shorten journey times to Scandinavia considerably. The fixed link would reduce the travel time from Hamburg to Copenhagen from more than 4 to 3 hours.1 An electric train could cover the Hamburg-Copenhagen route in less than 2 hours

(Vmax = 230 KM/h): 4 hours and 40 minutes are currently needed. This will bring Copenhagen as close to Hamburg, for example, as Berlin. Travel times to Malmö and Stockholm decreases significantly as well. With a consistent development of infrastructure, travel duration by train from Hamburg to Stockholm could be reduced from approximately 9:30 hours to 4:25 hours [source: www.europa-korridoren.se].

Timetable to completion of the Fehmarnbelt Bridge

Germany’s and Denmark’s transport ministers signed a Memorandum of Understanding concerning the construction of a fixed link across the Fehmarnbelt on 29th June 2007. A contract with binding effect under international law will be drawn up on the basis of this memorandum. The parliaments of both countries will then need to ratify the contract. Following on from this, the official planning procedure will be introduced before the construction work can begin. According to the schedule, construction of the bridge is expected to commence in 2011. It could then be cleared for traffic in 2018 (cf graphic 1).

Financing

The costs for constructing the bridge run to some 4.3 billion euro [source: BMVB, TRM], and are to be financed via a government guarantee model. Costs for develop-

---

1 320 kilometres = 3 hours plus 1 hour 5 minutes ferry including waiting time, roll on and roll off. Although travelling time across the bridge is approximately 10 minutes, the extension of motorway A1 between Neustadt and Puttgarden would save ten minutes’ journey time. Hold-ups at toll stations can be avoided by the use of a built-in device in the vehicle, as in the case of the Storebbelt crossing.
Box 2: Studies by order of the Danish and German transport ministries concerning the Fehmarn link

1. Feasibility studies
The appraisers’ consortium from the companies CDWI and Lahnemeyer analysed the various aspects of realising a fixed link across the Fehmarnbelt. CDWI-Lahnemeyer: Fehmarnbelt Feasibility Study: Link from Coast to Coast, January 1999.

2. Financial analyses
The financial analyses investigate various link variants in respect of their profitability and amortisation period. The best figures on this subject are exhibited by the cable-stayed bridge with four motorway lines and two railway lines.


3. Traffic analyses
These analyses forecast the traffic figures for the fixed link across the Fehmarnbelt:

c) Risø National Laboratory, German Meteorological Service: Fehmarnbelt fixed link – Traffic restrictions due to wind on the Fehmarnbelt Bridge, June 2005.

4. Economic effects
The transport ministries of the two countries had the economic effects of a fixed link across the Fehmarnbelt intensively investigated. In the process, the effects on the regional economy in particular were investigated:

b) Copenhagen Economics, Prognos AG: Regional Effects of a fixed Fehmarnbelt link, February 2006.
c) CDWI A/S: Economic Assessment of a fixed link over Fehmarnbelt, March 2004.
d) Kocks Consult GmbH, Institute for marine economy and logistics, Carl Bro A/S: Investigation of the socio-economic and regional effects of a fixed link across the Fehmarnbelt, August 1999

5. Environmental compatibility appraisals
The intention with these appraisals was to quantify the potential environmental effects of a fixed Fehmarnbelt link.


Sources: German Federal Ministry for Transport, Construction and Urban Development (BMVBS), Trafikministeriet Danmark (TRM)

---

Table 1: Financing of the overall Fehmarnbelt link project (Source: BMVBS, TRM)

<table>
<thead>
<tr>
<th>Project module</th>
<th>Costs</th>
<th>Financing</th>
</tr>
</thead>
<tbody>
<tr>
<td>Bridge construction works</td>
<td>4.3 billion euro</td>
<td>Private investment with German state backing, EU contribution of 374.3 million euro (27.6 percent), amortisation after 25 to 37 years without claims on taxes</td>
</tr>
<tr>
<td>Infrastructure connections Denmark</td>
<td>approx. 500 million euro</td>
<td>National budget Denmark</td>
</tr>
<tr>
<td>Infrastructure connections Germany</td>
<td>approx. 800 million euro</td>
<td>National budget Germany</td>
</tr>
</tbody>
</table>

The Fehmarnbelt Bridge ... ... overcomes boundaries:

For the route from Hamburg to Copenhagen, the journey time to Scandinavia is shortened by more than one hour; metropolitan areas Hamburg/Lübeck and Copenhagen/Malmö close ranks.

Frank Horch, Chairman of the Hamburg Chamber of Commerce

„With the Fehmarnbelt link the dynamically growing economic regions of Copenhagen/Malmö on the one hand, and Hamburg/Lübeck on the other, will be drawn more closely together. This will be a considerable contribution to connecting the north-south divide in Germany.
At the same time, an intelligent form of financing has been chosen for construction of the Fehmarnbelt Bridge. The state backing means that the financing costs will be lowered for the private investor, but no taxpayers’ money will be spent on the bridge. The many and varied positive socio-economic effects of a fixed link across the Fehmarnbelt will thus be generated without squeezing out other infrastructure projects.”

loans. The Danish state assumes the full risk for the construction of the bridge and is the sole issuer of the state backing – with the consequence that the whole bridge, until it reaches land on the German side, is Danish property. As a countermove, Germany has merely undertaken to develop the infrastructure connections on the German side. Since the Fehmarnbelt link is part of the Trans-European Networks, the European Commission is providing financial support for the overall transportation project. At the end of November 2007 the EU Commission announced its decision to assume 27.6 percent of the investment and planning costs of the Fehmarnbelt link. This means 374.3 million euro up to 2013. In the ensuing years the EU Commission will probably provide a comparable sum again. In principle, a grant for infrastructure connections is also possible (cf. table 1).

Cost-effectiveness of the Fehmarnbelt link is calculated by a financial analysis from 2003. With an estimated daily traffic frequency of 8 750 – 9 125 motorcars (among these 1 100 – 1 200 lorries) and 40 trains, cautiously assumed financial parameters enable an amortisation of the bridge in 33 – 37 years (source: BMVBS, TRM).

2 Denmark bears the risk of the state backing alone. Therefore, Denmark is entitled to all toll income from the bridge operation. The Danish state reserves the right to finance the infrastructure connections on the Danish side via this income.
II. International reference projects

Bridges overcome (natural) boundaries and connect regions. Bridge links promote economic, interpersonal and cultural exchange, because travel times and costs are considerably reduced. This paves the way for economic development and employment growth. A travel time reduced by 10 percent within a region has been proven to enhance regional division of labour. San Francisco Bay was connected via four fixed links in the course of the 20th century (the Golden Gate Bridge was constructed in 1930, the San Francisco Oakland Bay Bridge was completed in 1936). Since then, the individual cities of this dynamically growing region have been dividing tasks among themselves: San Francisco, for example, specialises in entertainment, culture, finances and consulting, Palo Alto in IT (Silicon Valley), Oakland is home to ports and logistics companies and Berkeley is the region’s scientific location.

Shanghai

Shanghai is the Chinese centre for foreign trade, hosts the third-biggest container port and, judged by total handling, even the world’s biggest universal port. The city’s successful economic development is essentially attributable to the consistent development of its transportation infrastructure. With a length of just under 33 km the Donghai Bridge, opened to traffic in 2005 and connecting the new Yangshan deep-water container port with Shanghai, it is the longest ocean bridge in the world. It will be exceeded only by the Hangzhou Bridge, which is due to open in summer 2008. The Hangzhou Bridge will link the cities of Ningbo and Jiaxing, separated by the Hangzhou bay, and has a total length of approximately 36 km. The integration power of these two bridges will strengthen Southern Asia’s economic powerhouse even more.

Fixed link across the Great Belt

With the bridges across the Great Belt (completed in 1997) and across the Öresund (completed in 2000), Denmark and Sweden took the first two necessary steps towards Scandinavia’s transportation infrastructure connections with Continental Europe. The Fehmarnbelt link is the only missing component that will complete this connection. The two bridges can be used as good examples for the effects on transportation, regional economy and ecology that can be expected from the fixed link across the Fehmarnbelt. Both links were likewise financed with the government guarantee model, and likewise constructed as a four-lane motorway and two-line railway. Additionally, both regions are highly similar to the Fehmarnbelt region in socio-economic terms.

The bridge across the Great Belt links Korsør on the island of Seeland with Nyborg on Fyn. It is 18 kilometres long and sub-divided into three sections; one section of the link was built as a tunnel solution. It offers a time saving compared with ferry traffic of 90 minutes. It was opened for rail traffic in June 1997 and for road traffic in June 1998. Construction costs were 21.4 billion Danish kroner (in 1998 prices, equates to approximately 4.2 billion euro), the toll charge is currently 29 euro for one...
private vehicle; special reductions are offered for regular users. The original plans provide for repayment of loans after 35 years. Due to traffic development which far exceeds forecasts (cf. graphics 2 and 4), the project will now pay for itself after 27 years, therefore in 2025 (source: www.storebaelt.dk).

The bridge has provided strong impulses for the employment market in Denmark. A total labour volume of 66 000 man years was required for the construction phase between 1987 and 1998. On average, therefore, a workforce of 6 600 per year was employed during the 10 years of the construction phase. The proportion of Danish employees totalled 75 percent. In total, 2 500 jobs were lost as a result of the ceased ferry operation between Nyborg and Korsør. The major part of the dismissed employees, however, found employment with other ferry operators. Additionally, the Danish state compensated the most badly hit municipality of Korsør with the location of a navy support centre (1 500 jobs) and a guarantee to take on part of the workforce at the Danish national railway (850 jobs). The organisational running of the bridge also brought 125 direct jobs (source: Fehmarnbelt Forum).

All business sectors were able to profit from the new link, particularly the hotel and metal industries and transport sectors. The Great Belt region was at the centre of great public and media interest during the construction period, and the result is rising hotel accommodation figures in the tourist and business sector as well as lively investing the Trans-European Network. The creation of a fixed road and rail link across the Fehmarnbelt between Germany and Denmark is a key element in the completion of the principal north-south connection between Central Europe and the Scandinavian countries. This project is intended at the same time to trigger new impulses in the Baltic Sea region, particularly in Germany and Denmark. It is now high time that Germany and Denmark agree on the actual planning and financing of the Fehmarnbelt link.

Illustration 2: Three bridges connecting Scandinavia/Continental Europe (Source: Sund og Bælt A/S)

Martin Stolz, CEO Kaufhaus Martin Stolz GmbH

“Our department store’s origins go back to the middle of the 19th century. Our continuously expanding business activities mean that now, in addition to our original store in Burg on the Fehmarn island, there are 13 department store branches in Northern Germany. Kaufhaus Martin Stolz GmbH will be an ardent supporter of a fixed link, should it become a reality. For our stores on Fehmarn and throughout Schleswig-Holstein this means a growth in customer potential, because many more Danes will come to Northern Germany. The benefits of a fixed link can, however, only be accompanied by a simultaneous boost to Fehmarn’s attraction for tourism.

There were similar debates concerning the construction of the Fehmarnsund Bridge way back in 1963. All opponents at that time have now done good business out of it. No-one today can imagine Fehmarn without the Fehmarnsund Bridge. It will be a similar case for a fixed link across the Belt.”

Dr. Georg Jarzembowski, MEP

“As early as spring 2004 the European Parliament and the council decided that a fixed link across the Fehmarnbelt was one of the 30 priority projects for expanding the Trans-European Network. The creation of a fixed road and rail link across the Fehmarnbelt between Germany and Denmark is a key element in the completion of the principal north-south connection between Central Europe and the Scandinavian countries. This project is intended at the same time to trigger new impulses in the Baltic Sea region, particularly in Germany and Denmark. It is now high time that Germany and Denmark agree on the actual planning and financing of the Fehmarnbelt link.”

The Fehmarnbelt Bridge ...
... opens horizons:

The German-Danish Fehmarnbelt region will be at the heart of Europe; a distinct regional identity comes into being.
Öresund Bridge

Since its opening in 2000, the Öresund Bridge has been a success story, too. The 16-kilometre-long link, partially realised as a tunnel solution, links Malmö on the Swedish and Copenhagen on the Danish side and cost a total of 2.7 billion euro (in 2002 prices). It is both a regional connection between two major cities and a strategic link between Denmark and Sweden, both countries are therefore also proprietors of the bridge. During the construction phase between 1995 and 2000 the bridge generated an employment volume of 60 000 man years. The link is part of the European Union’s Trans-European Networks (TEN) and has been a considerable contribution to the Öresund region’s dynamic development.

Traffic frequency has far exceeded investors’ expectations, meaning that amortisation is turning out to be more favourable than planned. In 2007, an average of some 16 000 commuters use this connection every day. At the same time, passenger figures in the ferry traffic between Helsingør and Helsingborg have remained at about the same level as in 2000. The bridge has therefore led to a general rise in traffic frequency and has not replaced the ferry traffic.

Christoffer Knuth, Director, Knuthenborg Park & Safari,

„The Knuthenborg Park & Safari is the biggest safari and adventure park in Northern Europe. It is located close to Maribo on Lolland, on the first motorway exit of the E 47 coming from Germany across the Great Belt. Construction of the Fehmarnbelt Bridge will bring great opportunities for us. We can already sense the increasing public interest in the Fehmarnbelt region. Many more tourists will come to our region: the Knuthenborg Park & Safari is already getting itself ready for this with the “Exit 48” project and is planning to expand its tourist offerings. It is noticeable that the Fehmarn Belt Bridge will bring about many similar subsequent investments in our region.”

Illustration 3: The bridge across the Great Belt

Copenhagen and Malmö are now within commuting distance, the journey time is just 35 minutes. Many Copenhageners have made use of this for a move to Southern Sweden, where rents and real estate prices are around one-third cheaper than in the Danish capital. Many unemployed from Southern Sweden have been able to find new jobs in prosperous Copenhagen. This integration process is reflected in the fact that, with a general rise in private-vehicle journeys across the bridge from one million in 2001 to 7 million in 2007, the proportion of commuter journeys has risen at an extraordinary rate from 5 percent (cf. graphic 7).

Graphik 5: Traffic development across the Öresund Bridge (Source: http://www.oresundbron.com)

Graphik 6: Traffic frequency across the Öresund (Source: Fehmern Bælt A/S)

Graphik 7: Structure of private vehicle journeys across the Öresund Bridge (Source: Sund ag bælt A/S)

The Öresund region has become the biggest regional agglomeration in Scandinavia now that the bridge is constructed, and has risen greatly in the hierarchy of Europe’s metropolitan regions.4 Many co-operations were impossible until the bridge came: the ports of Copenhagen and Malmö now operate as a common unit, the biotechnology industry has established a joint organisation for its development cluster (cf. box 4) and the twelve universities in region’s two countries have founded the jointly-run Öresund University.
III. Northern European axis of growth

The Fehmarnbelt Bridge will connect the two powerhouses of Hamburg/Lübeck and Copenhagen/Malmö, giving rise to a new growth axis. This offers Northern Germany the unique opportunity to even out the north-south divide prevailing in Germany.

Direct economic effects

The economic effects of a fixed link across the Fehmarnbelt were examined closely in the run-up to the decision in favour of the bridge construction. In the feasibility study of 1999, a benefit-cost ratio of 1.94 was calculated according to the assessment method of the German federal traffic route plan (source: BMVBS, TRM, 1999). For every euro invested in the Fehmarnbelt Bridge the economy grows by 1.94 euro – and this is without public funding.

A benefit-cost analysis concerning the Fehrmarnbelt Bridge in the variant of a cable-stayed bridge with four motorway lanes and two railway lines from 2004 provides a positive evaluation of the economic effects of a Fehmarnbelt link. Calculated cautiously, the benefit generated by the Fehmarnbelt link within 50 years runs to 10.9 billion euro, which equates to a net benefit of 1.9 billion. The project thus features an internal interest of 7 percent. The beneficial effects will be generated in equal parts in Germany and Denmark. Some one billion euro fall to the usual EU zone (source: TRM, BMVBS, 3 c). At the same time the evaluation is still comparatively cautious, since a potential EU contribution was not included in the calculation. The strategic and dynamic impact was also not taken into account.

Strategic and dynamic effects

The bridge is a major location factor and enables the location of new companies. More trade leads to stronger competition, lower prices and a more varied offer. This economic dynamic leads to a rise in productivity and lower costs.

The resulting beneficial effects are put in figures of some 0.4 billion euro. An overall net benefit of the Fehmarnbelt link of 2.3 billion euro would therefore be the result. The economic effects of fixed Fehmarnbelt link would be felt far beyond the metropolitan regions of Hamburg and Copenhagen/Oresund. They would be noticeable up to Usedom in Poland (700 kilometres to the north of the bridge).

Map 4: Development corridor: sphere of a fixed Fehmarnbelt link

The Fehmarnbelt Bridge will connect the two powerhouse cities of Hamburg/Lübeck and Copenhagen/Malmö, giving rise to a new growth axis. This offers Northern Germany the unique opportunity to even out the north-south divide prevailing in Germany.
The Fehmarnbelt Bridge has also been the driving force in the successful development of Copenhagen Malmö Port AB. The Bridge attracts many companies to the region, lots of them realign their logistics chains and choose the Òresund region as a distribution hub for the whole of Scandinavia, the Baltic countries and Russia. They often receive their freight by cargo ships and use the Òresund Bridge for distribution to Sweden and Denmark. In one go, the Òresund Bridge created the strongest region in Scandinavia – a region of 4 million consumers. This is why Copenhagen-Malmö Ports profits tremendously from the bridge.”

and up to 600 kilometres south of the bridge, in Hessen. On the German side, the regions of Kiel and Lübeck would be the biggest beneficiaries of this. Positive effects would be felt in Mecklenburg-Vorpommern, too, but less pronounced than in Schleswig-Holstein or in Hamburg. On the Danish side, the Lolland-Falster region would benefit most greatly from the improved infrastructure (source: BMVBS, TRM, 3a).

**Effects on the regional economy**

A specific focus during the analyses was placed on the effects of the link for the Fehmarnbelt region. The Fehmarnbelt region with the district of Østholstein on the German, and Storstroms Amt on the Danish side is separated by the Baltic Sea as a natural border. In their respective countries, the two rural districts are each located 1.5 hours away from the nearest metropolis (Hamburg and Copenhagen, respectively). Both rural districts are in a peripheral location, and both regions currently exhibit a lower per-capita income than the national average.

Access to the markets will be made easier for companies in this region; the location will become more attractive altogether for new companies. A study commissioned by the BMVBS and the TRM identifies the following areas as being particularly promising (BMVBS, TRM, 3b):

1. The construction business will experience a boom, particularly during the construction phase.
2. Tourism is already a significant economic factor in both regions today. The fixed link will improve the competitive position of the Fehmarnbelt region compared with other locations and raise market potential as a result of easier accessibility. Enormous opportunities are held by joint tourism marketing.
3. The new infrastructure will lead to a reduction of export costs. Precisely for the many small and medium-sized companies in the two rural districts, which have barely been able to benefit from foreign trade as a result of their peripheral location, improved export opportunities will be the result.
4. The Òresund region is known as Medicon Valley (cf. box 4), and the healthcare business is also of great significance for the metropolitan region of Hamburg/Lübeck. The infrastructural linking of these two skill centres will mean the opportunity for the Fehmarnbelt region to build up its own profile in this major growth cluster.

The Fehmarnbelt region is already in the public eye today; the construction of the bridge is drawing international media interest. This interest will reach its climax during the construction phase, when the construction site becomes a “sightseeing site”. The Fehmarnbelt region can make use of this interest for free location marketing.

**Employment effects**

The construction of the Fehmarnbelt Bridge will create between 44,000 and 66,000 man years of employment. This means that during the construction phase up to 7,500 people will each be provided with up to 8 years of work (cf. box 1). Bridge operation and maintenance will mean 1,280 to 1,740 permanent jobs (source: BMVBS, TRM, 1999). This equates to a rise in employment in the region of six to eight percent.

The Fehmarnbelt Bridge will create a joint German-Danish labour market. Denmark currently has almost full employment, all forecasts indicate that the workforce deficit in Denmark will continue to increase. Comparatively high unemployment of approximately 9 percent continues to prevail in Northern Germany – 20 percent even in Mecklenburg-Vorpommern. Even today many Germans are making use of the favourable economic situation in Denmark in order to work for Danish companies. The experiences of the many so-called border commuters are extremely positive, particularly since the earning opportunities in Denmark are good and employers are very open to German-speaking employees as a result of the skilled workforce deficit. Precisely German craftsmen are in demand in Denmark and have expanded their scope of activity to Denmark. (Source: Information on the Danish employment market and reports from border commuters: Working in Denmark – Border commuters in the Fehmarnbelt region, March 2008).

The Fehmarnbelt Bridge will shorten the journey time in German-Danish border traffic by up to 65 minutes. This will extend the possible commuter distance in the long term. (cf. map 5).

**Environmental effects**

Experiences concerning the environmental effects of bridge projects are extremely positive overall, with the bridge across the Great Belt and the Òresund Bridge providing models on how to deal with natural surroundings. Adjustment of the traffic flows, in particular, holds clear benefits for the environment (cf. graphic 8).

**Example: Great Belt Bridge**

In the short term, construction of the bridge required increased energy consumption. However, it triggers crucial displacements in the ‘modal split’, the distribution of traffic flows to the individual modes of transport, which mean a reduction in CO2 emissions. The Great Belt link therefore enables savings in fuel and emissions, with energy savings amounting to an average of around 3 Pico joules per year. This equates to some 2 percent of the total energy consumption in the Danish transport sector and means a carbon dioxide saving of more than 200,000 metric tonnes (source: Fehmarnbelt Forum 2001, cf. graphic 8).

The other environmental indicators, such as water transfer and marine biology, have seen more than positive trends. For example, the cessation of the ferry traffic between the ports of Kørrø and Nyborg means that conditions on the water are considerably calmer than before the bridge was opened. Neither was marine plant life impaired by construction of the bridge. More than 76% of the excavated earth was re-used (source: Fehmarnbelt Forum 2001).
The Fehmarnbelt Bridge is a central component of the European Corridor, which is the description for the region stretching from Hamburg to Göteborg and Stockholm via Copenhagen and the Öresund region. More than 20 million people live and work in this corridor, some 65% of the Swedish gross domestic product is produced here. The Fehmarnbelt link will not only tie this growth corridor with the European mainland. Within the European Corridor it will connect various city regions and, as a result of the faster and easier connection, will offer smaller regions completely new opportunities for stepped-up collaboration. The European Corridor initiative is an association of cities, local authorities and regional representatives from Sweden, Denmark and Germany in order to tie Scandinavia more closely to Continental Europe using sustainable infrastructure solutions and modern high-speed trains. A current analysis of the Swedish railway authority supports these principles. This is why in the early 2020s the vision of travelling from Hamburg to Stockholm by train in 4:20 hours might turn into reality. More information: www.europakorridoren.se

Example: Öresund Bridge

Here, too, investigations of all relevant environmental parameters show that the link has not led to any negative effects on the environment. The total costs of the environmental protection measures during the link’s construction phase amounted to 2 billion Danish kroner (equates to about 270 million euro). Today, the project is regarded as a worldwide benchmark for extensive construction projects which can be implemented in complete harmony with the surrounding environment. (Source: www.oeresundbron.com).

Meticulous environmental protection measures are also being planned for the Fehmarnbelt Bridge. For example, provisions have already been made for compensation measures for the excavated earth and for luminescent markings on the bridge construction site to protect migratory birds.

The fixed Fehmarnbelt link will also lead to enormous environmental relief. Considering the net effect, carbon dioxide at the indicated traffic ratio is reduced nearly by the yearly emissions of some 20 000 people. Additionally, 40 metric tonnes fewer of microparticles will be released into the air every year. (Source: TRM, BMVBS: 4a).

The bridge will initiate know-how transfer and hence generate a climate that favours innovation. Targeted cooperation clusters will make goods traffic between the two metropolitan regions more economical, and thus more intensive. Additionally, the Fehmarnbelt Bridge, alongside the established ferry routes and the existing links via the Jütland route, provides the great opportunity to create the central tie between Northern and Southern Europe. In the context of an overall traffic policy concept this is of maximum significance, particularly for rail-based goods transport.\n
**Long-term integration process:**

the coming into being of a shared regional identity

As the natural border becomes obsolete, the fixed link across the Fehmarnbelt will also mean that national borders increasingly become blurred. Shopping trips and short trips to the respective other side of the Fehmarnbelt will be made easier, concert and theatregoing will be spontaneous decisions. This integration process will be accompanied by a new regional consciousness. For example, in the Öresund region since the bridge a common newspaper has emerged by a new regional consciousness. For example, in the Öresund region since the bridge a common newspaper has emerged.

**Innovation and knowledge transfer**

The bridge will initiate know-how transfer and hence generate a climate that favours innovation. Targeted cooperation will mean that these effects are maximised. There are numerous successful examples of this in the Öresund region. The Medicon Valley cooperation cluster plays an exemplary role for Northern Germany (cf. box 4).
IV. Fehmarnbelt Bridge: offering comprehensive solutions!

The Fehmarnbelt Bridge will create a growth axis with the two metropolitan regions of Copenhagen/Malmö and Hamburg/Lübeck and open up the unique opportunity to shift the balance in Europe northwards. At the same time, the interconnection between the two metropolitan regions of Copenhagen/Malmö and Hamburg/Lübeck will link the Medicon Valley to the Life Science cluster in the metropolitan area of Hamburg. Both clusters will benefit greatly from each other.

Active involvement of the region in the continued planning and realisation measures: There is an urgent requirement for the interests of the region directly concerned to be institutionally anchored. This should take place via the politically legitimised representatives of the Kreis Ostholstein on the German side and of the Danish counterpart. Only this way can an immediate and regular exchange of information be created between the relevant ministries at the Federal level and the region concerned.

Create high-performance traffic links: Against the backdrop of a rising traffic frequency within this axis, expansion of the dry-land road and rail infrastructure in line with requirements is urgently needed; this must take place with an eye to the expanded spatial structures. In the area of road infrastructure, on the German side Federal motorway A1 will have to be expanded to four lanes throughout from Lübeck, from Fehmarnsund Bridge to Puttgarden as Federal road E 47. On the Danish side, the continuous four-lane extension was already complete by autumn 2007. The Lübeck – Puttgarden railway line must be extended in line with performance and electrification (V_max = 230 km/h), which also includes the construction of a second set of rails. On the Danish side, the railway line also needs to be electrified and extended to two sets of rails; in this context, special medium-term significance is held by the strengthening, in line with requirements, of the approximately four-kilometre long Storstrøm Bridge between Zeeland and Falster, built in 1937. The Fehmarnsund Bridge will also become a capacity bottleneck with its present features; redevelopment of the Fehmarnsund Bridge, in line with performance, will additionally become necessary.

The amount of the toll charge for using the Fehmarnbelt link will, including value added tax, be in the range of today’s prices for ferry passages. Linked with increased traffic figures this will ensure considerable tax income. As a result of private traffic alone, it is forecast that additional taxes of some 300 million euro p.a. (20% of a predicted 50 euro toll charge at 9,000 vehicles/day) will be generated. Once the bridge is open, this extra income could be used to refinance hinterland connections in Denmark and Germany.

Minimise impairments during the construction phase: The population in the region concerned makes a living from tourism to a considerable extent. The island of Fehmarn, in particular, is reliant upon not having the island’s tourism appeal impaired during the construction phase. This calls for a restriction of certain construction tasks (for example, drilling) to off-season periods, intelligent construction-site logistics with extensive consideration of the maritime route and early completion of the expansion of the E 47 to a four-lane Federal road before the construction works begin, in order to reduce the effects of the construction-site traffic.
**Preserve the competitiveness of the ports:** The competitiveness of the Baltic Sea ports in Schleswig-Holstein and in Mecklenburg-Vorpommern must continue to be guaranteed by appropriate development and expansion measures. Not least the experiences with the Øresund link have proved that the ferry traffic north of the bridge was able to stabilise at the same level even once the bridge was open.

**Suggest differentiated pricing for the toll:** The amount of the toll for using the fixed link across the Fehmarnbelt will be of great significance for the success and the intensity of the integration process in the cross-border Fehmarnbelt region. The costs, which will probably be based on the current ferry fares, must not be an obstacle to integration. When pricing the toll, therefore, concessionary tariffs should be granted for commuters and residents, as is also the case, for example, with using the Øresund link. Only this way can the integration process be encouraged sustainably.

**Take appropriate measures to conserve the environment:** In order to minimise the effects of the fixed link on environmental quality in the Fehmarnbelt, recourse can be made to the positive experiences with the construction of the Great Belt Bridge and the Øresund Bridge. The recommendations of the environmental consultation report “A fixed Fehmarnbelt link and the Environment” (BMVBS/TRM) must be adopted to avoid impairment of the (water) flow conditions in the Fehmarnbelt. Compensatory measures for the excavations in the earth and bird protection actions must be performed.

---

**Contact:**

Hamburg Chamber of Commerce
Adolphsplatz 1 | Börse
D-20457 Hamburg
PO Box 11 14 49
D-20414 Hamburg

Project Managers:
Christine Beine, Dr. Malte Heyne
Infrastructure – Traffic Routes Division, Ports, Shipping

Telephone: +49 (0) 40/36 13 8 491
Fax: +49 (0) 40/36 13 8 313
malte.heyne@hk24.de
www.hk24.de

Lübeck Chamber of Commerce and Industry
Fackenburger Allee 2
D-23554 Lübeck

Contact:
Rüdiger Schacht,
Head of Division Location Policy

Telephone: +49 (0) 451/6006-183
Fax: +49 (0) 451/6006-4183
schacht@ihk-luebeck.de
www.ihk-schleswig-holstein.de

Maps, Graphics, Graphic Design:
studio holfelder, Hamburg

Fotos:
www.oresundsregionen.org, Transglobe Agency,
Sund og Bælt A/S, Tonix, Visitcopenhagen.com, WoCo

Production:
Wertdruck GmbH & Co. KG, Hamburg

Contact:
Michael Thomas Fröhlich,
Managing Director Structural Policy Committee

Haus der Wirtschaft
Kapstadtring 10 | D-22297 Hamburg
Telephone: +49 (0) 40/63 78-51 23
Fax: +49 (0) 40/63 78-51 51

Haus der Wirtschaftsverbände
Jungfernstieg 25 | D-24768 Rendsburg
Telephone: +49 (0) 43 31/14 20-43
Fax: +49 (0) 43 31/14 20-50
Froehlich@uvnord.de
www.uvnord.de

Status:
June 2008

---

**The Fehmarnbelt Bridge ...**

... conserves the climate:

The new link sustainably reduces carbon dioxide emissions on Scandinavia’s roads.
Fehmarnbelt Business Council

The Fehmarnbelt link will create a growth axis with the two metropolitan regions Malmö/Copenhagen and Hamburg/Lübeck. In order to have the business world actively flank the continued planning process, the “Fehmarnbelt Business Council” (FBBC) was founded in Lübeck in September 2007. The FBBC intends to assume a coordination role and serve as a platform upon which all companies and institutions with an interest in the project coordinate their respective activities and agree on joint projects, so that the fixed link across the Fehmarnbelt will be a success from the very first day of its opening.

Members (status May 2008)

- Schleswig-Holstein IHK Fehmarnbelt - Kiel - Lübeck
- Handelskammer Hamburg
- Confederation of Danish Industry
- Chamber of Commerce and Industry of Southern Sweden

Objectives
- Economic promotion along the Fehmarnbelt axis
- Formation of a “psychological bridge”
- Joint efforts for necessary supplementary infrastructure measures
- Initiate workforce and knowledge transfers
- Involvement of the regional economy in the planning and construction activities
- Intensify cooperation between companies and scientific institutions

The FBBC is supported by Femern Bælt A/S

Published by:

Handelskammer Hamburg

In cooperation with the Fehmarnbelt Business Council