

**FEHMARNBELT BUSINESS COUNCIL**  
The Fehmarnbelt Tunnel and the Fehmarnbelt Region



A northern European growth region  
connected by the Fehmarnbelt Tunnel



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**Publisher**

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**Image material**

Cover: © everythingpossible – Fotolia.com

## Additional images:

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**Last updated**

June 2016

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# **FEHMARNBELT BUSINESS COUNCIL**

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## OVERVIEW

<b>Introduction</b> .....	5
<b>Ten arguments for the Fehmarnbelt Tunnel</b> Explanations, sources and calculations behind the fact sheet.....	6
<b>Fehmarnbelt Tunnel FAQ</b> A discussion of critical comments made in connection with the Fehmarnbelt Tunnel.....	11
<b>Company case studies</b> How companies stand to benefit from the Fehmarnbelt Tunnel .....	21
<b>Sources</b> .....	22



## INTRODUCTION

The FBBC is a tri-national organisation that seeks to promote closer links between the Hamburg/Lübeck and Copenhagen/Malmö economic areas. With this in mind, the FBBC has produced the following paper in order to provide information on the Fehmarnbelt Tunnel project and the economic areas concerned.

### WHAT IS THE FEHMARNBELT REGION?

The Fehmarnbelt Region includes parts of northern Germany, the eastern part of Denmark and southern Sweden. To be more precise, these are the German regions of Hamburg, Schleswig-Holstein and Western Mecklenburg-West Pomerania (including its capital Schwerin and the rural districts of Nordwestmecklenburg and Ludwigslust-Parchim), the Zealand group of islands in Denmark (including Copenhagen) and the Swedish region of Scania. This definition of the region encompasses the largest possible area within the Fehmarnbelt Tunnel's direct sphere of influence.

# TEN ARGUMENTS FOR THE FEHMARNBELT TUNNEL

Explanations, sources and calculations behind the fact sheet

## SHORTER TRANSPORT AND JOURNEY TIMES

**Passenger and freight train journeys between Hamburg and Copenhagen will be two hours shorter. Car and lorry journeys will be reduced by an hour.**

According to the Danish national railway company (DSB), a train journey from Copenhagen to Hamburg currently takes four hours and 33 minutes.<sup>1</sup> According to the German national railway company (Deutsche Bahn AG), it takes four hours and 45 minutes to travel from Hamburg to Copenhagen by rail.<sup>2</sup> The new connection will open up the possibility of a journey time of 2.5 hours<sup>3</sup>, provided that the hinterland rail connections in both countries are improved. Construction work in this regard is already under way in Denmark. In Germany, it is expected that the hinterland rail connection will be completed as a new line in 2024. Until this time, rail freight will continue to be transported via the Jutland route in order to ease the burden as much as possible on the seaside resorts in the Bay of Lübeck through which the existing route runs.<sup>4</sup>

The time saving for motorists is based on the fact that the 45-minute ferry crossing and any waiting time incurred will be replaced by a journey of about ten minutes through the 18 km long tunnel.<sup>5</sup>

## ENHANCED CONNECTIONS

**Six airports in the Fehmarnbelt Region offer direct flights to more than 180 national and international destinations. The region also boasts 23 ports of multi-regional importance.**

The airports in Hamburg, Lübeck, Rostock-Laage, Copenhagen, Malmö and Kristianstad serve a variety of national and international destinations. The region is also home to three airports that can be used for air taxis and private flights: Schwerin-Parchim, Lolland-Falster and Roskilde.<sup>6</sup> If the transport connections are good, travellers can easily benefit from all the region's airports. The tunnel, for example, will make it possible and convenient for Germans to fly direct from Copenhagen to China. Travellers from Hamburg would require a stopover in Frankfurt or Munich. By the same token, Danes, for example, will be able to benefit from more affordable charter holidays by flying from Hamburg.<sup>7</sup> The 23 ports of multi-regional significance that will be served with, and can directly benefit from, a host of goods transported via the Fehmarnbelt Tunnel are as follows: Brunsbüttel, Geesthacht, Hamburg, Kiel, Lauenburg, Lübeck, Neustadt, Österrönfeld, Puttgarden, Rendsburg and Wismar (in Germany); Helsingør, Kalundborg, Køge, Korsør, Rødby, Nak-

<sup>1</sup> Danish national railways (visit: May 2015) (weblink)

<sup>2</sup> Deutsche Bahn AG – website (2015) (weblink)

<sup>3</sup> Danish Ministry of Transport (2015a) (visit: May

2015) (weblink)

<sup>4</sup> Jung, F.; Baethge, H. (2015) (weblink)

<sup>5</sup> Femern AS (06.03.2015) (weblink)

<sup>6</sup> Copenhagen Airport (2015) (weblink); Hamburg

Airport (2015) (weblink); Malmö Airport (2015) (weblink); Lübeck Airport (2015) (weblink); Kristianstad Airport (2015) (weblink)

<sup>7</sup> Kjær, Chr. (2015) (weblink)



skov and Næstved (in Denmark); and Gothenburg, Halmstadt, Helsingborg and Trelleborg (in Sweden). With Copenhagen Malmö Port, there is also a bi-national port in the region.<sup>8</sup> With its hinterland rail connections, the seaport of Hamburg will play a particularly prominent role within the region.<sup>9</sup>

## INCREASED GROWTH

**When viewed over a period of 50 years, the Fehmarnbelt Tunnel will deliver a return of 5% for Europe. This socio-economic return equates to a net profit of €3.5 billion that will benefit tunnel users, and therefore companies, in terms of time savings and increased flexibility. This will increase the competitiveness of companies, which in turn will boost growth in the region.**

All in all, the Fehmarnbelt Tunnel costs during its construction phase more than €8 billion. However after the opening it will return a net benefit as well. When viewed over a period of 50 years, in which the overall costs and benefits of all countries are factored in, this gives rise to a net profit of €3.5 billion. The return on the Fehmarnbelt Tunnel therefore stands at 5%, which is one percentage point above the 4% threshold at which projects in Denmark are deemed to make economic sense. As this calculation takes overall benefit into account, it is not only the tunnel users who will profit in the long term, but society as a whole.<sup>10</sup>

## COMMON LABOUR AND SALES MARKET

**More than 600,000 companies offer excellent job opportunities to the nine million people living in the Fehmarnbelt Region, who were classed as highly qualified in a study of EU educational levels and who form a large common sales market.**

All companies in Denmark are registered in the country's central register of companies CVR<sup>11</sup> (Centrale Virksomhedsregister). There are more than 104,000 companies in the Zealand and Copenhagen regions. According to the Chamber of Commerce and Industry of Southern Sweden, Scania is home to almost 73,000 companies. Some 430,000 companies are based in the German part of the Fehmarnbelt Region.<sup>12</sup> Therefore, the Fehmarnbelt Region as a whole is home to about 600,000 companies.

Just under nine million people live in the Fehmarnbelt Region, 1.2 million of whom in Sweden, 2.5 million in

Denmark and 5.2 million in Germany. In 2010, the average gross regional product per capita stood at €38,500, which corresponds to 157% of the EU average.<sup>13</sup>

The population of the region is not only wealthier than the EU average, but is also better educated, when measured by the number of people aged between 25 and 64 with an academic education of medium duration or longer. Apart from Schleswig-Holstein (23.4%) and Mecklenburg-West Pomerania (24.1%), which are slightly below the EU average of 29% in terms of the share of the population with a tertiary level of education, the populations of all subregions within the Fehmarnbelt Region are better educated than the European average. On average, 32.8% of the population of the Fehmarnbelt Region have completed tertiary education. The largest share can be found in the Danish Capital Region (Copenhagen) with 46%, followed

<sup>8</sup> Copenhagen Malmö Port (2015) (weblink)

<sup>9</sup> Andresen, Britt; Sylvan, Henrik; Nilsson, Madeleine (2015) (weblink)

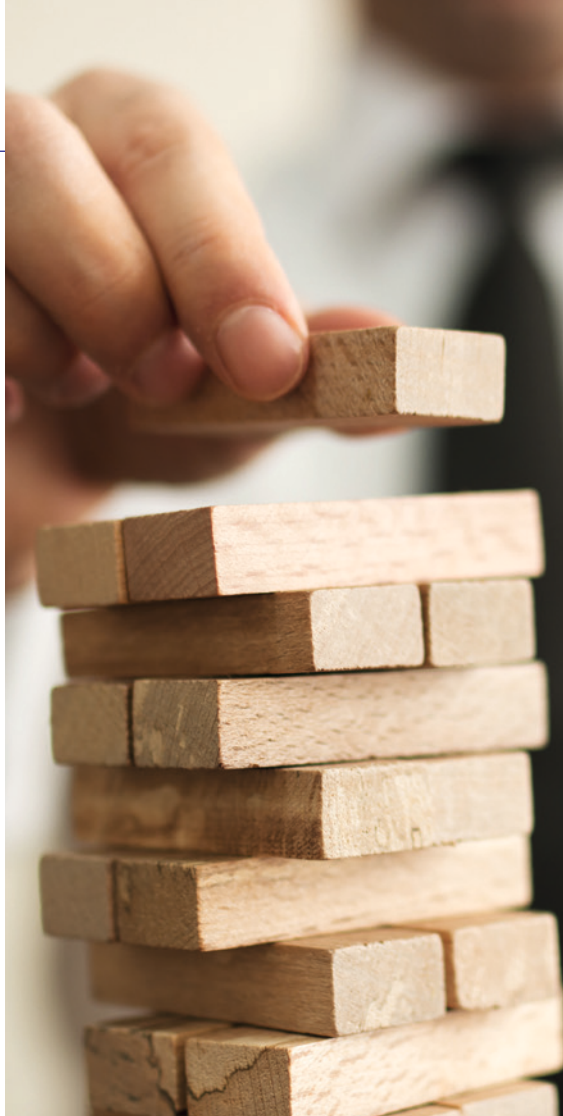
<sup>10</sup> Danish Ministry of Transport (2015b) (weblink)

<sup>11</sup> Centrale Virksomhedsregister (2015) (weblink)

<sup>12</sup> Economic figures for Schleswig-Holstein, Mecklenburg-West Pomerania and Hamburg (Chamber of Commerce flyer) and the websites

of the regions' chambers of commerce, medical associations and bar associations

<sup>13</sup> Femern A/S (2015e) (weblink)





by southern Sweden (38.9%), Hamburg (33.6%) and Zealand (29%).<sup>14</sup>

### INTENSIVE KNOWLEDGE TRANSFER

**Forty-eight universities and 20 research centres in the Fehmarnbelt Region stand to benefit from improved infrastructure that will enable them to strengthen the region.**

In Denmark and Sweden, the following universities are situated within the Fehmarnbelt Region: two universities in Scania, seven in the Danish capital and one in the town of Roskilde on Zealand. Hamburg leads the way on the German side with 21 universities. Moreover, there are two universities in Flensburg, four in Kiel, four in Lübeck and three in Schwerin, with one each in Heide, Elmshorn, Wedel and Wismar. In total, the Fehmarnbelt Region is home to 48 universities. Furthermore, many research centres are based in the region: two in Denmark, two in Sweden and 16 in Germany. In addition to the current total of 20 research institutes in the Fehmarnbelt Region, two further institutes are currently under construction in Sweden and are set for completion in 2016 and 2019, respectively.<sup>15</sup>

Although cooperation between the region's universities is currently possible, the crossing between two countries is regarded as the major mental barrier to cross-border partnerships.<sup>16</sup> In the Øresund region, it was only after the opening of the Øresund Bridge that some 15,000 people started commuting between the two countries to work and study.<sup>17</sup>

### GROWTH IN TOURISM

**There were more than 62 million overnight stays in the Fehmarnbelt Region in 2014. In particular, the tunnel will generate a considerable increase in the number of day trippers on both sides of the belt.**

There were just under 5.1 million overnight stays in Scania in 2014, with more than 11 million in Copenhagen and 4.3 million in the Zealand region. Well ahead of the field was Schleswig-Holstein with 26.3 million overnight stays in 2014, followed by Hamburg with 12 million and the districts of Nordwestmecklenburg, Ludwigslust-Parchim and Schwerin with a total of 3.6 million overnight stays. These figures illustrate that the Fehmarnbelt Region was a highly attractive holiday destination in 2014, with more than 62 million overnight stays. Alongside the number of overnight stays, day tourism will be given a major boost, as short distances and improved transport connections will make the region far more attractive to day trippers.<sup>18</sup>

### MORE RELIABLE JOURNEYS

**The tunnel can be used irrespective of ferry timetables. In addition, the B 207 road connection between Heiligenhafen (Fehmarn Sound Bridge) and Puttgarden (tunnel entrance) will be widened to create a four-lane highway. The Lübeck-Puttgarden railway line will be made into a double-track line and electrified.**

<sup>14</sup> Eurostat (2015) (weblink)

<sup>15</sup> FBBC (2013) (weblink)

<sup>16</sup> Jespersen, Per Homann; Endres, Jean; Jakobsen,

Marianne; Guasco, Clément (2012) (weblink)

<sup>17</sup> Lindgren, Mats (2011) (weblink); Øresundsbro

Konsortiet (2015) (weblink)

<sup>18</sup> Kveiborg, Ole (2013), Transport- og Bygningsministeriet og Sund & Belt (Hrsg.) (2014)



The plan is for a four-lane highway on the B 207 from Heiligenhafen to the tunnel entrance in Puttgarden.<sup>19</sup> In addition, the railway line between Lübeck and Puttgarden will be made into a two-track line and electrified.<sup>20</sup> With this in mind, it will be necessary to find an alternative to the Fehmarn Sound Bridge, which will not be able to withstand the expected transport volume.<sup>21</sup> The state of Schleswig-Holstein has submitted the Fehmarn Sound Bridge for urgent review under the 2015 Federal Transport Infrastructure Plan.<sup>22</sup>

But it is not just these infrastructure improvements that will result in a more reliable transport route; the key factor is that the tunnel can be used at all times. As soon as the tunnel has been completed, travellers will no longer be reliant on fixed timetables. This not only leads to increased flexibility, but also to safer driving. As drivers are independent of timetables, there is less need to travel at excess speeds in order to meet ferry departure times.

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## MORE ENVIRONMENTALLY FRIENDLY

**By going through the tunnel instead of taking the Jutland route, a 40 t lorry with an average consumption of 30 l of diesel per 100 km shaves 160 km off the journey, thus reducing CO<sub>2</sub> emissions by 127.2 kg. A car with average consumption of 8 l of petrol per 100 km cuts its CO<sub>2</sub> emissions by 30 kg.**

Whereas the distance between Hamburg and Copenhagen measures 473 km along the Jutland route, there are just 333 km between the two cities on the Fehmarn Belt route. The road distance between Copenhagen and Hamburg is 140 km shorter via the Fehmarn Belt compared with the route via Fünen and Jutland. In terms of a road journey from Copenhagen to Lübeck, the distance between the two routes stands at 205 km. Therefore, an average of 160 km is saved. On average, a lorry consumes between 30 and 35 l of diesel per 100 km – assuming a consumption rate of 30 l per 100 km, this works out at 0.795 kg CO<sub>2</sub> per kilometre.<sup>23</sup> If the lorry shaves 160 km off its journey, it saves 127.2 kg CO<sub>2</sub> – which is equivalent to the amount of power that would be consumed by a refrigerator that runs three and a half years.<sup>24</sup>

### Jacob Sönnichsen AG

'Jacob Sönnichsen AG has invested more than €10 million in the HanseBelt Region, because a Fehmarnbelt Fixed Link will boost development considerably and, as a strong building materials provider, we want to be prepared.'

– CEO Boy Meesenburg

A car that consumes an average of 8 l of petrol per 100 km produces 0.1896 kg CO<sub>2</sub> per kilometre – this translates into a saving of 30.2 kg CO<sub>2</sub> over a journey that is 160 km shorter. This is the equivalent of leaving a refrigerator running for 10 months.



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<sup>19</sup> BMVI (2015) (weblink)

<sup>20</sup> Deutsche Bahn AG (2015a) (weblink)

<sup>21</sup> Ministry of Economic Affairs, Employment, Trans-

port and Technology (2015) (weblink);

Deutsche Bahn (2015b) (weblink)

<sup>22</sup> BMVI (2015) (website)

<sup>23</sup> Dekra (2015) (weblink)

<sup>24</sup> Umweltbundesamt (2015)



## NEW JOBS

**Between 3,000 and 4,000 new jobs will be created on the tunnel building site during the construction phase. Following completion, 300 permanent staff will be required to ensure smooth operation.**

A study unveiled by Copenhagen Economics on behalf of the Danish Ministry of Transport in June 2013 confirms that at least 3,000 jobs will be created on the building site on the Danish side during the construction phase, with between 500 and 600 new jobs expected on the German side.<sup>25</sup> Femern A/S repeatedly emphasises the fact that it will not be possible to fill the job vacancies on the Danish side solely with Danes, as there are too few qualified specialists in Denmark. In addition to these new jobs on the construction site itself, jobs will be created in the region as the workers settle. These include jobs in restaurants, supermarkets, the service industry and so on.<sup>26</sup>

Following the completion of the tunnel, approximately 300 staff will be required to operate it. These include technical engineers, staff to man the tollbooths and security guards to protect the tunnel around the clock.<sup>27</sup>

## NO RISK

**The financial risk for the project lies with Danish state enterprise Femern A/S. The tunnel will be paid for by the tunnel users and not by taxpayers – whether those in Denmark or those in Germany.**

The construction costs and the costs for the hinterland connection in Denmark amount to €8.3 billion.<sup>28</sup> The project will be financed by Danish state enterprise Femern A/S. Femern A/S is a wholly nationalised company under the auspices of the Danish Ministry of Transport. Organised in the same way as a private company, it obtains funds from the international capital market to finance the tunnel, with the Danish state acting as guarantor. Thanks to the current situation of the financial markets and Denmark's excellent credit rating, Femern A/S is able to take out loans on very favourable terms.<sup>29</sup> The project will be paid for by the users and not by taxpayers, with the toll expected to stand at about €65 per crossing for cars and €277 per crossing for lorries.<sup>30</sup> The amortisation term has been calculated at about 36 years.<sup>31</sup>

Only the risk of a 'total failure' – for example, construction work has to be abandoned and no car ever drives through the tunnel – is covered by Danish government guarantees. The Great Belt Fixed Link serves as a prime example. Here, the returns now exceed those forecast in the financing plan. In 1998, it was forecast that 30,000 vehicles a day would cross the bridge after a period of 30 years. This target was achieved in 2014, after just 16 years.<sup>32</sup>

<sup>25</sup> Thelle, Martin H.; Kirk, Jens Sand; Schultz-Larsen, Thomas; Mekonnen, Daniel (2013) (weblink)

<sup>26</sup> Thelle, Martin H.; Kirk, Jens Sand; Schultz-Larsen, Thomas; Mekonnen, Daniel (2013) (weblink)

<sup>27</sup> Femern A/S (2015b) (weblink)

<sup>28</sup> Femern A/S (2016) (weblink)

<sup>29</sup> Sund & Bælt Holding A/S (2014) (weblink)

<sup>30</sup> Femern A/S (2016) (weblink)

<sup>31</sup> Femern A/S (2016) (weblink)

<sup>32</sup> Sund & Bælt 2015 (2015) (weblink) and Steen Nielsen, Jørgen (1998) (weblink)

Why this tunnel?

What are the tangible benefits?

How long will it take to build?

How is the project financed?

What effects will be noticeable?

What does the tunnel's construction mean for the environment?

How does it strengthen the region?

## FEHMARNBELT TUNNEL FAQ

### A discussion of critical comments made in connection with the Fehmarnbelt Tunnel

**'The investment makes no economic sense and generates no benefit. It is a waste of taxpayers' money.'**

The February 2015 construction budget of the Danish investor Femern A/S indicates an amortisation period of 36 years.<sup>33</sup> In total, it is expected that the tunnel will have a useful lifetime of at least 120 years<sup>34</sup>, meaning that the tunnel's construction will be paid for after one-third of its expected lifetime. In terms of the road and rail connections for the Fehmarnbelt Tunnel, a review carried out by the German Federal Ministry of Transport and Digital Infrastructure determined a benefit–cost ratio (BCR) of 6.7. This is the highest BCR of all 38 projects included by the Ministry in its 2010 assessment, with an average BCR of

2.2.<sup>35</sup> These figures are currently under review and are expected to be published in updated form soon.

As advance funding for the tunnel's construction will be provided by nationalised company Femern A/S and recouped by toll income, no taxpayers' money will be used to build the tunnel.

In addition, the sensitivity analysis (which forms part of the financial analysis) calculates a real interest rate of 3%. Due to the current low interest rate of below 1%, the costs of the essential loans will be lower than forecast, which may result in a significant shortening of the amortisation term.<sup>36</sup> The EU is also subsidising construction.

Current calculations show costs of up to €1.7 billion for the German hinterland connection.<sup>37</sup> Although initial estimates pointed to costs of €0.9 and €1.1 billion, the

<sup>33</sup> Femern A/S (2016) (website)

<sup>34</sup> Femern A/S (2014a) (website)

<sup>35</sup> BMVI (2015) (website, document); German Fed-

eral Ministry of Transport, Building and Urban Affairs (2010) (website)

<sup>36</sup> Deutsch-Dänische Handelskammer (German-

Danish Chamber of Commerce) (2015) (website), Femern A/S (2016)

<sup>37</sup> Centrale Virksomhedsregister (2015) (weblink)



decision to use a more spatially compatible new-build track and the inclusion of costs for rebuilding the Fehmarn Sound Bridge resulted in the figures being revised upwards.<sup>38</sup>

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**‘The Fehmarnbelt Tunnel cannot be completed without public investment.’**

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Infrastructure development is a basic public service in the countries involved and in the EU, not to mention a cornerstone of economic activity. And the Fehmarnbelt Tunnel is no exception. What’s more, this is investment expenditure, not consumption expenditure. Besides, the investment risk – that is the risk of the government guarantee being used – is negligible, as the transport volume across the Fehmarn Belt is already considerable and the transport forecasts are based on conservative estimates.<sup>39</sup> In addition, there are the positive experiences of the Øresund Bridge and the Great Belt Fixed Link. EU subsidies are common practice when it comes to infrastructure projects on this scale and are even an

objective of European transport policy. After all, the Fehmarnbelt Tunnel will, alongside the Brenner Base Tunnel, close one of the two remaining gaps in the Scandinavian–Mediterranean corridor, which is one of the nine pan-European transport corridors.<sup>40</sup>

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**‘The tunnel connects a farmer’s field on one side with a farmer’s field on the other.’**

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The Fehmarnbelt Tunnel is able to give the attractiveness of the region a decisive boost on the international stage whilst promoting integration within the EU. Furthermore, the tunnel connects the Øresund region and the Hamburg Metropolitan Region – two metropolitan regions with significant growth potential that could also benefit the areas in between, provided that suitable initiatives are initiated. The fact that the Fehmarnbelt Tunnel will be a part of the Scandinavian–Mediterranean TEN-T transport corridor<sup>41</sup>, which is designed to close specific transnational gaps, underscores the wide-ranging importance of the connection.

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<sup>38</sup> Schleswig-Holstein State Government (2015) (website)

<sup>39</sup> Wichmann Matthiessen, Christian (2015) (weblink)

<sup>40</sup> European Commission (2015a) (weblink)

<sup>41</sup> European Commission (2015b) (website)

**‘Following completion of the Fehmarnbelt Tunnel, far more vehicles will travel via Fehmarn.’**

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Once the Fehmarnbelt Tunnel is opened, the transport volume will increase. This will give rise to major benefits for the region, as the improved transport links will enable it to increase both its importance and its profitability.

Nevertheless, the transport forecasts published in 2014 show that Fehmarn should have no fears about being ‘steamrollered’ by traffic. After all, the high traffic volumes should be considered in light of the fact that many vehicles already pass through Fehmarn.

Of the 7,904 cars a day that are expected once the tunnel opens, 4,216 of these already travel across the island. The increase is expected to be even less pronounced for buses and lorries. Whereas 1,067 lorries and 79 buses a day are currently driven across the island, the forecast is for 1,521 lorries and 93 buses once the tunnel opens.<sup>42</sup>

The increasing transport volume on Fehmarn will be mostly due to trains. Seventy-eight new freight trains a day will be added to the mix, whereas the number of passenger trains is set to double to 32.<sup>43</sup> However, the construction not only causes this increase, but also necessitates line modernisation. The investment in electrification will improve the carbon footprint of rail transport whilst increasing its competitiveness against other modes of transport.

By way of comparison, a diesel locomotive emits an average of 1.5 times as much CO<sub>2</sub> per tonne-kilometre as an e-locomotive; in terms of passenger rail, this factor stands at about 1.2 per person-kilometre.<sup>44</sup> What’s more, electric trains are quieter than diesel locomotives.

**‘During the construction phase, there will be a considerable increase in traffic on Fehmarn, as many more lorries will be needed to supply the building site.’**

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For cost reasons, the lion’s share of the machinery and materials will be transported to the tunnel construction site by sea. Therefore, Femern A/S will start by building a works port between Puttgarden and Marienleuchte. As the construction site cannot be supplied solely by maritime deliveries, however, current forecasts show approximately 100 lorry arrivals and departures per day; that is 200 lorry journeys a day. Taking the 1,067 lorries a day that currently cross the island to connect with the ferry in Puttgarden, this represents an increase of 20%.<sup>45</sup>

**‘The Fehmarnbelt Tunnel is nothing but a white elephant.’**

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The decision to build a fixed link across the Fehmarn Belt was taken following a budgeting process. Alongside the political will (2008 bilateral agreement), it was important to the investors that the project makes sound economic sense and generates returns.<sup>46</sup> The structure also optimises the European transport network: the route (compared to the Jutland route) is shortened by 160 km and a considerable time saving is achieved (train journey from Hamburg to Copenhagen: currently 4.5 hours, under three hours with the tunnel).<sup>47</sup>

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<sup>42</sup> Femern A/S (2014b) (weblink)

<sup>43</sup> Deutsche Bahn AG (2015a) (weblink)

<sup>44</sup> Allianz pro Schiene (2012) (weblink)

<sup>45</sup> Femern A/S (2014c) (website)

<sup>46</sup> German Federal Ministry of Transport, Building and Urban Affairs; Danish Ministry of Transport and Energy (2006) (document)

<sup>47</sup> Green STRING Corridor (2012) (website)



### Honorary Consul of the Republic of Finland

'Even back in 2009, companies such as IKEA realised that a fixed link across the Fehmarn Belt would boost the quality of the HanseBelt Region and took the strategic decision to settle on the Hamburg–Malmö/Copenhagen axis in light of this project of the century,' remarks Bernd Jorkisch, Honorary Consul of the Republic of Finland, recalling the settlement talks he held with IKEA decision-makers during his tenure as President of the Lübeck Chamber of Commerce and Industry.

**'The assumptions made by the transport experts are wrong. Key assumptions have changed and the traffic forecasts are incorrect.'**

The models previously calculated could only factor in the underlying conditions applicable at the time.

However, the growth in Scandlines transport figures over the past 20 years already exceeds the conservative estimates used in the transport model. Since 1998, the number of cars has risen by an average of 3.2% per annum, whereas the number of lorries has risen by an average of 2.8% per annum.<sup>48</sup> The traffic forecasts of Femern A/S are based on an annual increase of 1.4% in car traffic and a 1.3% increase in freight traffic (lorries) for the first 25 years following the opening of the tunnel.<sup>49</sup>

**'Tunnels and fixed links are inadequate (Channel Tunnel, Warnow Tunnel, Øresund Bridge, etc.)'**

The various structures are not comparable, whether in terms of the nature of the transport link (car trains in the Channel Tunnel) or the transport situation. For a positive example, you only have to look at the Great Belt Fixed Link, where returns are now higher than those originally budgeted for. Following some teething troubles, the number of users on the bridge, for example, has now doubled.<sup>50</sup>

In 1998, it was forecast that 30,000 vehicles a day would cross the bridge after a period of 30 years. This aim was already achieved in 2014.<sup>51</sup> The Øresund Bridge is now also a success, with a fivefold increase in traffic volume since 2000 – despite an almost unchanged traffic volume on the Helsingborg–Helsingør route, which runs alongside it.<sup>52</sup> There are now calls for an additional fixed link between Helsingør and Helsingborg in order to keep pace with growing freight demand on the Øresund Bridge.<sup>53</sup>

Merely analysing the commercial figures doesn't give a true picture if previous analyses took into account the economy as a whole. Provision of transport infrastructure remains a public service – and is therefore not only geared towards financial aspects. In terms of the Fehmarnbelt Tunnel, a professional regional management organisation will oversee the running. This was established precisely to harness maximum growth potential in the interests of the economy as a whole.<sup>54</sup>

**'The politicians are rushing into a decision.'**

The idea for a fixed link across the Fehmarn Belt was first mooted back in the 1930s.<sup>55</sup> After long and careful consideration, political representatives from Denmark and Germany signed a bilateral agreement for a fixed link in 2008. Behind the scenes, working and steering groups have analysed the environmental aspects on several occasions, verified the technical and financial feasibility of the project and prepared the most advantageous financing model for the tender process. A raft of reports have been prepared prior to the project launch.<sup>56</sup> In addition, there was a decision to extend the TEN-T corridor in the 1990s in order to enable infrastructure connections that go beyond national bor-

<sup>48</sup> Scandlines (2015) (weblink)

<sup>49</sup> Femern A/S (2014b) (weblink)

<sup>50</sup> Statistics Danmark (2015a) (website)

<sup>51</sup> Sund & Bælt 2015 (2015) (weblink); Steen Nielsen, Jørgen (1998)

<sup>52</sup> Statistics Danmark (2015b) (website)

<sup>53</sup> Øresundskomiteen (2015) (website)

<sup>54</sup> IHK zu Lübeck (Lübeck Chamber of Commerce and Industry) (2015) (website)

<sup>55</sup> Korsgaard Hansen, Christian; Filskov Jørgensen, Brian (2013) (website, document)

<sup>56</sup> Ministry of Transport, DK, Federal Ministry of Transport, Building and Housing, DE (2014) (website, document)

<sup>57</sup> Femern A/S (2013) (website)

<sup>58</sup> Transport- og Energi ministeriet (2006) (weblink); Femern A/S (2013) (weblink)

<sup>59</sup> Femern A/S (2015d) (weblink); Femern A/S (2013) (weblink)

ders. The issue of the Fehmarn Belt fixed link already came up in this context and in the context of Germany's decision to participate in these corridors.

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**'Denmark is building and operating the Fehmarn-belt Tunnel, because it holds no economic appeal for Germany.'**

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The inclusion of the Fehmarn Belt link as a PPP reference project in the coalition agreement of the German federal grand coalition in 2005 was important in terms of driving forward the development of financing models that had previously only been present as ideas.

The fact that no German investor is building the tunnel has nothing to do with the overall benefit to the economy. When private companies are involved, they are only concerned with the commercial return on investment. In terms of the Fehmarnbelt Tunnel, Denmark possesses experience that leads to cost savings during the construction phase and, furthermore, had already committed to driving forward a Fehmarn Belt fixed link in its bilateral agreement with Sweden on the construction of the Øresund Bridge. After all, the Swedes have plenty of interest in a connection to the rest of Europe via the Øresund Bridge and Fehmarnbelt Tunnel.

**'The Fehmarnbelt Tunnel will damage the environment.'**

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A fixed link may slightly impede the currents in the Baltic Sea and cause localised effects on the merging of the water in the Fehmarn Belt. Any potential effects on the currents, however, will be too small to measure.<sup>57</sup> Even though it is not officially classified as a bird reserve pursuant to the EU Birds Directive, the Fehmarn Belt is an area of ornithological importance, as it is where the migration routes of many land and sea birds intersect. The most important breeding, stopover and wintering grounds, however, are situated far from the planned construction area. It is therefore assumed that the birds will reclaim their territories once the tunnel has been completed.<sup>58</sup> The construction work and the finished tunnel may affect marine mammals such as porpoises.

There are two factors that may potentially disturb these creatures: the noise caused by the additional shipping, the floating dredgers and – first and foremost – work on the retaining walls. If this noise is reduced, however, these effects will be limited. The second factor is the change to the habitat, which can result in both gains and losses. Indeed, scientific studies suggest that porpoises may be one of the beneficiaries of these changes. With its protective stone layer, the tunnel's trench may serve as an artificial reef, thus attracting fish and, in turn, porpoises.<sup>59</sup>





It is also thought that the effect on algae and plankton will be minor, as it is expected that their original distribution will be restored after about two years.<sup>60</sup>

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**‘The Fehmarnbelt Tunnel will not save users any time.’**

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It depends which route you’re talking about. The saving is considerable in terms of train journeys that previously used the Jutland route. For journeys from Hamburg to the Copenhagen area, the time saving of about two hours will also make itself felt. Moreover, there will be no time spent waiting for the ferry, which previously constituted a psychological barrier – as opposed to a ‘mental bridge’. A study showed that the route from Hamburg to Copenhagen is only 44 km longer than the route from Hamburg to Berlin (Hamburg–Berlin: 289

km; Hamburg–Copenhagen: 333 km). Although it is possible to travel from Hamburg to Berlin in approximately 90 minutes by rail, a journey from Hamburg to Copenhagen currently takes far longer at 4.5 hours.

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**‘The ferry service between Puttgarden and Rødbyhavn will have to be scrapped.’**

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The example of the Channel Tunnel<sup>61</sup> shows that ferries can continue to operate along the same route as a tunnel. In addition, Scandlines AG has issued a statement confirming its intention to maintain the ferry service.<sup>62</sup> Generally speaking, the coexistence of the ferry and the tunnel prevents either one from gaining a monopoly. In turn, this leads to competition between both transport options, ultimately benefiting users.





**‘The decision to build the tunnel will mean less toll income on the Danish side if Scandlines refuses to scrap the ferries. This increases the financial risk.’**

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It is fair to say that the financial risk lies with Femern A/S. It is the responsibility of Femern A/S to ensure that the pricing facilitates the repayment model – and appropriate internal calculations have been performed in this regard. The ferry service may act as a ‘price regulator’.

In its financial analysis, however, Femern A/S has accounted for the scenario in which the ferries continue to be operated. This analysis also factors in the impact of ‘tunnelphobes’ – in other words, people who avoid tunnels for one reason or another. They, too, only have a minor effect on the calculations.<sup>63</sup>

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**‘The new connection will only generate through traffic for the Ostholstein district and Fehmarn in particular, but will bring no economic benefits.’**

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Traffic will increase. The forecasts, however, do not point to a sudden increase in road traffic. The tunnel will generate an opportunity for the region to harness positive structural effects – and these will have to be seized.

In particular, it is important to press ahead with measures designed to stimulate cross-border cooperation. On a regional level, it is expected that new jobs will be created (construction, tourism, logistics, medical technology).<sup>64</sup> The construction phase will also generate positive short-term effects.

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**‘The figures for the costs of the hinterland connection are out of date and far too conservative.’**

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The costs of improving the infrastructure on the German side are estimated at up to €1.7 billion. These costs may increase, however, if the Fehmarn Sound Bridge is

rebuilt. Nevertheless, the state of Schleswig-Holstein has submitted the bridge for urgent review as part of the 2015 Federal Transport Review Plan, which means federal government funding could be made available. In addition, the investment directly benefits the infrastructure of the region and thus paves the way for future growth. The costs exceed the initial estimate because Deutsche Bahn AG has signed a declaration of intent with the state of Schleswig-Holstein in which it agrees to run a route alongside the existing A1 motorway using the most spatially compatible track as determined by the spatial planning process.

#### **Party Rent Hamburg Bernard & Roes GmbH**

The Fehmarnbelt Tunnel will allow companies such as the Party Rent Group to save a great deal of time. As a service provider in the events industry with a partner branch in the Øresund region, we send lorries carrying event equipment to Malmö and back every week, via the Fehmarn Belt, from our site in southern Stormarn. The tunnel would bring our journey times down by up to an hour.’

*Managing Director Jan-Willem Roes*

The initial plan was to improve the existing route. Following drawn-out protests from local residents, the route next to the motorway was finally acknowledged as being more spatially compatible. Compared to the existing route, however, this route includes 55 km of new track, which – compared with improvement work on the existing route – will not only take longer to build but will also cost more than originally planned.<sup>65</sup>

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<sup>60</sup> Femern A/S (2013) (weblink)

<sup>61</sup> Britain (2015) (weblink)

<sup>62</sup> Lübecker Nachrichten (2015) (weblink)

<sup>63</sup> Femern A/S (2016) (weblink)

<sup>64</sup> Federal Ministry for Transport, Building and Urban Affairs, DE, Transport- og Energi ministeriet. DK (2006) (weblink); Transport- og Bygningsministeriet og Sund & Belt (Hrsg.) (2014) (weblink)

<sup>65</sup> Deutsche Bahn AG (2015c) (weblink)

**CITTI Handelsgesellschaft mbH & Co. KG**

CITTI Handelsgesellschaft mbH & Co. KG has invested more than €100 million at its Lübeck site, because a Fehmarnbelt fixed link will make the region far more attractive – and we want to be ready.'

- Managing Partner Gerhard Lütje

**'Tourism in the region will be scuppered. The Fehmarnbelt Tunnel will adversely affect the economic factor of tourism.'**

The structure of tourism is diverse. One thing is certain: tourists will come through the tunnel, some possibly just because of it. The existing strengths of the tourism industry on Fehmarn and in Ostholstein will remain unscathed. Examples from other regions show that new infrastructure projects give tourism a major boost and that these effects will also apply in the case of the Fehmarnbelt Tunnel.<sup>66</sup> This assumes a regionally appropriate hinterland connection (road and rail). The existing infrastructure, some of which is out of date, will be improved and expanded by virtue of the Fehmarnbelt Tunnel. Overall, this will lead to a modernisation of the transport connections and make it easier for tourists to come to the region.

In a report entitled 'Impact analysis of the hinterland connection following construction of a fixed Fehmarn Belt link', the only impacts shown are those on individual sectors due to a possible increase in traffic noise.<sup>67</sup> The impact is illustrated by means of a noise footprint shown on the map. A projection of jobs and revenues in respect of the companies within this noise corridor can also no more than show an impact on jobs and revenues. At the present moment in time, there is no valid information as to whether this impact will lead to

the expected losses and, if so, to what extent. The expected chain of effects may not be forthcoming, the consequences may be milder than envisaged or losses may be overcompensated for elsewhere. Strictly speaking, this means that no losses are identified in the report.

**'The Fehmarnbelt Tunnel will wipe out jobs in the region.'**

There is no evidence to this effect. Also, the economy isn't static. Nothing ever stays the same. Puttgarden, for example, suffered considerable job losses following the relocation of rail freight and the relinquishing of customs clearance duties. A loss of jobs connected with the ferry service will be offset by gains in other areas, such as operation of the tunnel itself. After all, the Fehmarnbelt Tunnel will not be unmanned. As things stand, Femern A/S estimates that about 300 people will be needed to operate the tunnel.<sup>68</sup>

**'More than 90% of goods transported across the Fehmarn Belt travel southwards. Schleswig-Holstein sends about 10% of its goods, and Germany about 1.5% of its goods, northwards via the Fehmarn Belt.'**

It is always claimed that only Denmark stands to benefit from the link. The purely statistical export figures cannot be equated with future transport volumes through the Fehmarnbelt Tunnel. Here, through traffic plays a major role, as does passenger traffic. Generally speaking, vehicles from both regions will pass through the tunnel twice – which also means that they will pay twice. In terms of goods flow, Denmark is the number-one trading partner of Schleswig-Holstein. With a value of €1.49 billion, more goods were exported to Denmark than to any other country<sup>69</sup> and, with a value of €2.9 billion, more goods were imported from Denmark than any other country<sup>70</sup>. In particular, the accompanying infrastructure and transport policy measures will strengthen these ties and generate additional growth. In terms of a benefit analysis, the Fehmarnbelt Tunnel should not just be reduced to a mere transport connection.



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**‘The land connection will have a devastating effect on cargo volume in shipping.’**

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The forecasts show long-term increases in the cargo volumes of Baltic Sea shipping. Therefore, the Fehmarnbelt Tunnel will only cause a limited reduction in tonnage growth in a very small area. Overall, cargo volume is expected to double over the course of the next 15 years.<sup>71</sup>

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**‘The Fehmarnbelt Tunnel will compete with the Baltic Sea ports and therefore jeopardises their prospects.’**

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There is no risk to either ports or shipping companies. The decline in load share on seaward routes to southern Sweden is too minor to pose any threat to commercial viability (a 10% reduction in loads is forecast).<sup>72</sup> Overall, the turnover of the Baltic Sea ports is expected to rise from 53 million t in 2010 to 79 million t in 2030. Looking at the details, the trans-shipment volumes of the Baltic Sea ports are expected to rise per annum as follows: 1.2% in Rostock, 2.3% in Lübeck, 4.9% in Puttgarden, 1.9% in Kiel, 1.8% in Stralsund and 2.8% in Wismar. Flensburg (-0.8%) and Sassnitz (-1.1%) are the only ports that expect negative growth.<sup>73</sup> However, this is due to reasons other than the Fehmarnbelt Tunnel. Experiences of other links show that they actually increase transport volumes, serving not only cargo traffic but passenger traffic, too.



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**‘Economic benefits will only be felt in the metropolitan regions, but not in Stormarn, Ostholstein and Plön.’**

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The HTC report ‘Development of the transport infrastructure on the Hamburg–Puttgarden axis’, which was partly funded by the Lübeck Chamber of Commerce and Industry, is purely a transport report. It was commissioned in order to identify the transport infrastructure and transport policy measures necessary to derive maximum benefit from the Fehmarnbelt Tunnel. As a result, its remit is limited to the areas of road and rail traffic.

It came to the conclusion that transport – particularly rail transport – only plays a below-average role in generating positive effects. It is therefore apparent that positive effects will be due primarily to the impetus associated with closer links between economic regions and the creation of industrial and residential areas as well as the increase in economic activity. The fact that economic effects will be felt more strongly in larger cities, as assumed by the Femern A/S report entitled ‘Regional development perspectives’, does not mean that the Fehmarnbelt Region will come away empty-handed. Quite the opposite, in fact: a survey of 60 business representatives from northern Germany, Denmark and southern Sweden showed that the respondents expect the regional economy to benefit from decisive momentum.<sup>74</sup> Furthermore, there are already a wealth of initiatives in the Fehmarnbelt Region campaigning for early improvements in the underlying conditions and closer ties within the region.

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<sup>66</sup> Transport- og Bygningsministeriet og Sund & Belt (Hrsg.) (2014)

<sup>67</sup> Ostholstein district (2010) (website)

<sup>68</sup> Femern A/S (2015b)

<sup>69</sup> Statistisches Amt für Hamburg und Schleswig-Holstein (Statistical Office for Hamburg and Schleswig-Holstein) (2015a) (website)

<sup>70</sup> Statistisches Amt für Hamburg und Schleswig-Holstein (Statistical Office for Hamburg and Schleswig-Holstein) (2015b) (website)

<sup>71</sup> Makait, Martin; Fiedler, Ralf; Kleist, Lorenz; Pistol, Björn; Sorgenfrei, Jürgen (2014) (website)

<sup>72</sup> Makait, Martin; Fiedler, Ralf; Kleist, Lorenz; Pistol, Björn; Sorgenfrei, Jürgen (2014) (website)

<sup>73</sup> Makait, Martin; Fiedler, Ralf; Kleist, Lorenz; Pistol, Björn; Sorgenfrei, Jürgen (2014) (website)

<sup>74</sup> Andresen, Britt; Sylvan, Henrik; Nilsson, Madeleine (2015) (website)



**‘The number of critics on the danish side is increasing all the time now that the green light has been given.’**

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The fact is that support for the project is far more widespread amongst the local Danish population than over on the German side. There have been no protests in Denmark thus far, which may be because the Danes have already grasped the benefits of similar projects. Furthermore, there is cross-party unity in the Folketing (Danish parliament), which was consolidated with the passing of the act approving construction on 28 April 2015, with a majority of 92 to 8.

There are many people on both sides of the Belt who advocate the tunnel, particularly in terms of its economic benefits. This is reflected in the result of a representative study of 2,014 people carried out by Epinion on behalf of Femern A/S in March 2014.

More than half of all Danes interviewed (55%) said that they had a favourable view of the fixed link. Thirty-one per cent had no strong feelings either way, with only 12% critical of the tunnel. In northern Germany, the majority of people have either a positive or neutral opinion of the Fehmarnbelt Tunnel. Forty-one per cent of the German respondents were in favour of the tunnel, whereas 37% had no strong opinions and 20% were critical of the project.<sup>75</sup> Furthermore, 75% of Danes and Germans believe that the tunnel would bring about good conditions for businesses, with 79% of Danes and 65% of Germans expressing the opinion that the Fehmarnbelt Tunnel would have a positive effect on job creation in the region.<sup>76</sup>

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**‘The number of critics on the Hamburg-Copenhagen axis is growing all the time.’**

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The opponents of the tunnel have, in particular, positioned themselves in Ostholstein and on Fehmarn and are targeting their campaigns especially against the railway line as a source of noise and argue against the economic viability of the project.

The number of organisations in favour of the Fehmarnbelt Tunnel is increasing all the time. The following organisations currently work together under the auspices of the Fehmarnbelt Business Council<sup>77</sup>:

- Schleswig-Holstein Chamber of Commerce and Industry
- Handwerkskammer Schleswig-Holstein (Schleswig-Holstein Chamber of Trades and Crafts)
- Hamburg Chamber of Commerce
- Schwerin Chamber of Commerce and Industry
- UV Nord e.V.
- Kaufmannschaft zu Lübeck
- Dansk Industri
- Dansk Erhverv
- German–Danish Chamber of Commerce
- Chamber of Commerce and Industry of Southern Sweden
- HanseBelt e.V.

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<sup>75</sup> Femern A/S (2014d) (weblink)

<sup>76</sup> Femern A/S (2014e) (weblink)

<sup>77</sup> FBBC (2014)

These organisations don't just represent themselves, but speak for large portions of the regional economy in the shape of more than 400,000 member companies.

## COMPANY CASE STUDIES

### How companies stand to benefit from the Fehmarnbelt Tunnel

#### EXPERIENCES FROM THE GREAT BELT FIXED LINK: LOCATION OPTIMISATION AND ECO-FRIENDLINESS AS A COMPETITIVE FACTOR, USING POSTNORD AB AS AN EXAMPLE

PostNord AB is a communication and logistics service provider that is entrusted with the sending and delivery of post in Denmark and Sweden. PostNord sees major benefits in all infrastructure and mobility expansion projects. Due to the construction of the Great Belt Fixed Link, the company was able to consolidate its eight sorting offices and six parcel offices into three offices in each category, two in Jutland and one on Zealand. Thanks to the Great Belt Fixed Link, PostNord has therefore been able to make considerable savings by eliminating duplicate structures.

PostNord also emphasises the importance it places on its environmental footprint. They are therefore in favour of infrastructure projects that, like the Fehmarnbelt Tunnel, have the potential to cut CO<sub>2</sub> emissions. After all, this is a key pillar of the PostNord vision.<sup>78</sup>

#### EXPECTATIONS OF THE TUNNEL CONSTRUCTION SITE: CONTRACTS DURING THE BUILDING PHASE, USING NORDDEUTSCHE CATERING + SERVICES GMBH AS AN EXAMPLE

Subcontractors such as Norddeutsche Catering + Services GmbH (NCS) are currently bidding for the right to serve the large-scale construction site. NCS, for example, plans to double its workforce of 55, thus enabling it to offer three warm meals a day around the clock to all construction site workers in a 2,000 m<sup>2</sup> canteen. Alongside meals for the construction workers, there will also be a need to provide catering for the visits of politicians and other interest groups. Just like many other service providers, NCS is one of the local firms hoping to profit in this way from the construction of the Fehmarnbelt Tunnel.<sup>79</sup>

#### EXPECTATIONS OF THE FEHMARNBELT TUNNEL: EXPANDED SALES MARKETS FOR FRESH FOODS, USING PÅGEN AB AS AN EXAMPLE.

Pågen AB is a leading Swedish manufacturer of baked goods, with sales offices in Norway, Finland, Denmark and Germany. With a turnover of SEK 2.7 billion and total sales of 206 million product packaging units, Pågen serves a total of 25 different markets with a range of baked goods. The range is focused on freshly baked pastries, for which time to shelf is critical. Infrastructure improvements such as the Fehmarnbelt Tunnel expand the sales radius for these kinds of products. All Pågen sales markets are served by the bakeries in Malmö and Gothenburg. As these are fresh goods, the transport time from the bakery to the shelf is key. Following construction of the tunnel, the delivery vehicles will be able to use the time saved by avoiding the ferry crossing to travel further into Germany. As a result, the sales market is enlarged by about 300 km.<sup>80</sup>

The logo for PostNord, featuring the word "postnord" in a bold, blue, lowercase sans-serif font.

<sup>78</sup> Bremholm, Jesper (2014)

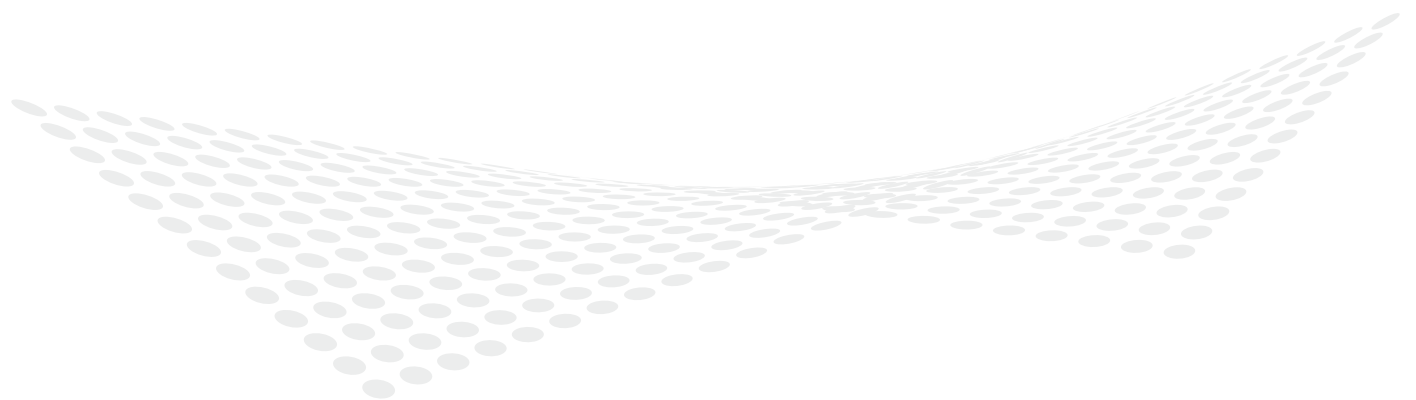
<sup>79</sup> Martens, Inga (2015)

<sup>80</sup> Furhauge, Tørk (2014)

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