

**Draft for Consultation**

**The Øresund Fixed Link (Denmark – Sweden)**



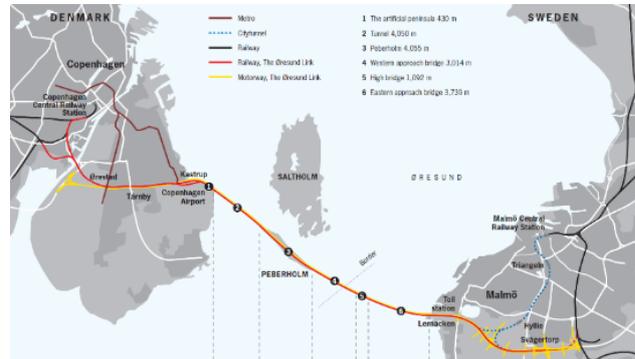
Source: Ramboll

<b>Location</b>	Copenhagen (Denmark) – Malmö (Sweden)
<b>Sector</b>	Northern Europe, Øresund region, Transportation
<b>Procuring Authorities</b>	Øresundsbro Konsortiet
<b>Project Company</b>	Øresundsbro Konsortiet
<b>Project Company Obligations</b>	Design, Build, Finance, Maintain, Own and Operate (DBFMOO)
<b>Financial Closure Year</b>	-
<b>Capital Value</b>	USD 3.7 billion (DKK 30.1 billion) 2000 prices
<b>Start of Operations</b>	2000
<b>Contract Period (years)</b>	-
<b>Key Facts</b>	Government financed, 100% user funded

## Project highlights

The Øresund Fixed Link (the Link) is a fixed combined bridge and tunnel link across the Øresund Sound (the Sound) between Denmark and Sweden. It comprises:

- The Øresund tunnel between Amager – at Kastrup, south of Copenhagen, and the artificial island Peberholm.
- The Øresund Bridge, a combined girder<sup>1</sup> and cable-stayed bridge between Peberholm and Lernacken – south of Malmö, in Skåne.



**1. The Øresund Fixed Link**  
(Source: Øresundsbro Konsortiet)

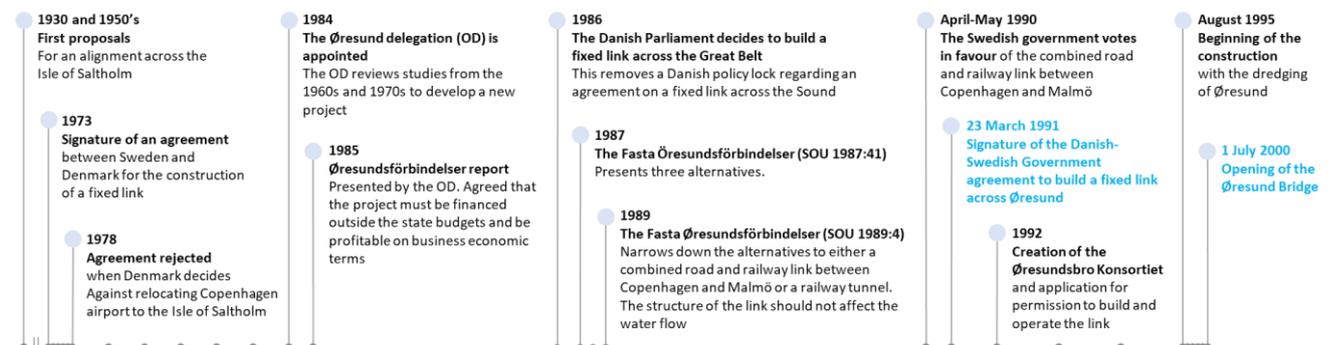
The Link is composed of a motorway and a dual rail track. The total length is 15.9 km.

The Øresund Fixed Link is owned and operated by Øresundsbro Konsortiet, which is jointly owned by state-owned enterprises A/S Øresund and Svensk-danska Broförbindelsen (SVEDAB) AB. The latter is owned by the Swedish Government, while A/S Øresund is 100 per cent owned by Sund & Bælt, which is owned by the Danish state (see also Figure **Error! Reference source not found.**).

The total cost of the Link, including the motorway and rail connection on land, was calculated at DKK 30.1 billion in 2000 (circa USD 3.7 billion, 2000 prices). The realisation of the project received financial support of DKK 780 million (USD 96.6 million) from the Trans-European Transport Network (TEN-T) funding. It is estimated that the entire Link, including the land works, will have paid for itself by 2050<sup>2</sup>.

The completion and opening of the Link in 2000 marked an upturn in mobility at an international, national, regional and local level for one of the busiest and most important traffic routes between the Scandinavian peninsula and the European continent. The fast link to the centre of Copenhagen has also had a significant impact on Copenhagen’s Kastrup Airport’s potential to attract more international flights. Further, it triggered the formation of a common labour and housing market, which lies at the heart of the political vision of the Øresund Region.

## Project Timeline<sup>3</sup>



<sup>1</sup> Most common bridge structures. The beams (girders) support the deck.

<sup>2</sup> Øresundsbro Konsortiet (2019), *Annual report 2019*.

<sup>3</sup> Own production, based on OMEGA centre Sweden, UCL London (n.d.) *The Øresund link-project profile*; Øresundsbro Konsortiet (2008), *Facts worth knowing about the Øresund bridge*.

## Development

### The policy and planning setting

Denmark and the southern region of Sweden have been closely related through history. The Øresund region, built around the metropolitan areas of Copenhagen (Denmark), Malmö and Lund (Sweden), is now one of the most well-known examples of European cross-border collaboration.

Both sides share similar profiles of development (knowledge-based economies). In the two years preceding the opening of the Øresund Fixed Link, a major share of direct investments from both countries were directed to the Øresund region.

For the development and operations of the Øresund Fixed Link, Denmark and Sweden are bound by the Governmental Agreement signed on the 23rd March 1991, which fixed fundamental design and construction principles, and regulated cooperation between the two countries.

### Challenges and needs addressed

The Øresund Fixed Link aimed at acting as a catalyst for the whole Øresund region by strengthening commercial ties and by promoting commuting and cultural exchange between Copenhagen and Malmö.

At the end of the 20th century, unemployment was affecting the region: “the decline of traditional industries and the closure of shipyards as well as car and textile factories had visible effects on unemployment figures on both sides of the Sound”<sup>4</sup>. With the Øresund Fixed Link, Sweden saw an opportunity to address industrial unemployment in Malmö through access to Copenhagen’s labour market. For Copenhagen, the construction of a fixed link was an opportunity to expand its production system, universities and services catchment area.

Strategically, the Link aimed at increasing the attractiveness and competitiveness of the whole region, by enlarging its educational offering and encouraging the development of new infrastructure – like the European Spallation Source<sup>5</sup> (ESS) facilities in Lund – to attract high-skilled labour and businesses. For Sweden, it was a major opportunity to improve connection with the European continent and to the world, by road, but also by air, thanks to the proximity of Copenhagen’s Kastrup Airport, located at the Danish end of the Link. A few years after the bridge opened, more than half of the exports from Sweden were directed to mainland EU countries while two-thirds of imports originate from within the EU<sup>6</sup>.

Easier and faster communication contributes to the increase of commercial exchanges, but also tourism. The bridge aimed to have an impact on the region’s image and to create new opportunities for the development of leisure and tourism business.

The notion of “a fixed link to the continent” was of major importance when developing the project, but in the late 1980s, the ideas of regional development and building cross-border regions gained in importance<sup>7</sup>. The growing objective, which still stands high on the political agenda, was to forge the Øresund identity in a “culturally and linguistically similar but still diversified population” by fostering cultural exchanges<sup>8</sup>.

### Environmental issues

Environmental issues have been central throughout the project stages. In 1986, the Øresund Delegation (OD) started discussing the effects a fixed link would have on the water flows from the North Sea to the Baltic Sea. This issue became central in the development of the project and led to major environmental

<sup>4</sup> Nauwelaers, C., K. Maguire and G. Ajmone Marsan (2013), “The case of Oresund (Denmark-Sweden) – Regions and Innovation: Collaborating Across Borders”, *OECD Regional Development Working Papers*, 2013/21, OECD Publishing.

<sup>5</sup> Multi-disciplinary research facility based on the world’s most powerful neutron source.

<sup>6</sup> Øresundsbro Konsortiet (2020, February 25), personal interview.

<sup>7</sup> OMEGA centre Sweden, UCL London (n.d.) *The Øresund link-project profile*.

<sup>8</sup> Nauwelaers, C., K. Maguire and G. Ajmone Marsan (2013), “The case of Oresund (Denmark-Sweden) – Regions and Innovation: Collaborating Across Borders”, *OECD Regional Development Working Papers*, 2013/21, OECD Publishing.

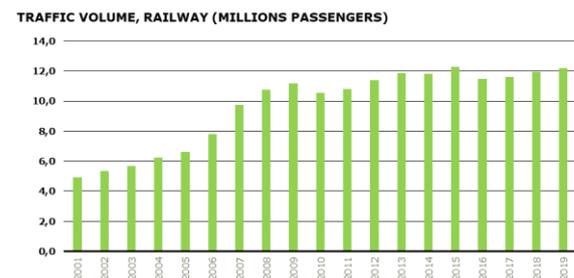
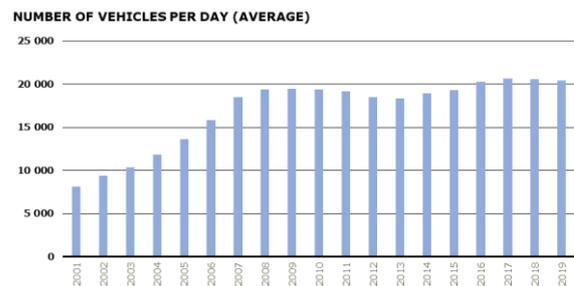
protests which culminated in the resignation of Sweden’s Environment Minister Olof Johansson in 1994. To address the environmental issues, three to six cubic metres of seafloor sediment were dredged to not change water inflows<sup>9</sup>. Specific care was taken to avoid permanent damage and serious impact on seafloor fauna and flora during the dredging. 14% of the cost of the Link was related to environmental measures and optimisation<sup>10</sup>.

### Long-term benefits

After the bridge opening, labour market integration, measured by commuting, rose considerably – mainly from Sweden to Denmark (in 2018, 90% of the Øresund commuters lived in Sweden and worked in Denmark)<sup>11</sup>. Commuting by car reached a peak in 2008, with 20 000 vehicles passing the Sound daily compared with 3 000 in 1999<sup>12</sup>. Differences in salaries and housing prices – both higher in Denmark, and unemployment rates – higher in the Skåne region – drove this pattern. In 2018, an average of 70 000 people were crossing the bridge daily; 55% by car and 45% by train<sup>13</sup>.

The type of trips changed over time. For vehicle traffic, commuting was the largest customer segment in the initial years of operation, but leisure travel gradually took over (in 2017, commuters and leisure travellers accounted for one third of the car trips each)<sup>14</sup>. Favourable fare policies implemented over the years and the weakening of the Swedish currency supported that pattern, with Danes shopping on the other side of the Sound for instance. The remaining traffic – business, freight and coaches – kept increasing as the bridge offered a faster and better located (customer wise) alternative to the Helsingborg-Elsinore link ferry service, located north of the Øresund Fixed Link in the same functional region<sup>15</sup>.

The opening of the Link was accompanied by major infrastructure development on both sides. New districts are continuing to be developed in the suburbs of Hyllie and Ørestad in Malmö at the Swedish end of the Link, with housing, shops, and offices. The Link has also integrated the Malmö property market with Copenhagen’s. At the turn of 2012-2013, the price per square metre for a family home in Malmö area was almost at the same level as in the Capital Region which encompasses Copenhagen and its surrounds. This reflects the demographic characteristics of prospective buyers and the economic connection the Link has made between the two regions.



**2. Traffic over the Sound**  
(source: Øresundsbro Konsortiet)

The proximity to Kastrup Airport has helped companies or major research facilities to establish themselves in the region. Major logistics centres have been established near the E6 road around Malmö. Direct business collaboration between both countries emerged – like the merger of Copenhagen and Malmö ports. Finally, millions have been invested in improving the adjacent transport infrastructure – like Copenhagen metro, or the city tunnel in Malmö<sup>16</sup>.

<sup>9</sup> OMEGA centre Sweden, UCL London (n.d.) *The Øresund link - project profile*.

<sup>10</sup> Øresundsbro Konsortiet (2020, February 25<sup>th</sup>), interview.

<sup>11</sup> Øresundsbro Konsortiet (2018), *The Øresund Bridge and its Region: 18 years*.

<sup>12</sup> Ibid.

<sup>13</sup> Ibid.

<sup>14</sup> Øresundsbro Konsortiet (2018), *The Øresund Bridge and its Region: 18 years*.

<sup>15</sup> Øresundsbro Konsortiet (2018), *The Øresund Bridge and its Region: 18 years*.

<sup>16</sup> OECD (2003), *OECD Territorial Reviews: Oresund, Denmark/Sweden 2003*, OECD Territorial Reviews, OECD Publishing, Paris.

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According to the OECD<sup>17</sup>, the better cross-border mobility helped decrease cultural and communication barriers since most Swedes and Danes living in the core of the cross-border area, even if not commuting themselves, get to know nationals that have worked on the other side of the Sound.

## Financing

### Infrastructure funding and financial operations model

The Governmental Agreement from 1991 explicitly stated that funding from the state budgets of the two signatory countries was not an option to deliver the Øresund Fixed Link.

The **coast-to-coast section** – which includes the tunnel, the artificial island, the bridge but also the dredging and other measures such as environmental and safety ones – has been financed by loans taken on the international credit market. Øresundsbro Konsortiet is responsible for these loans. The cost of the coast-to-coast section of the link was calculated at DKK 19.6 billion in 2000 (approx. USD 2.4 billion, 2000 prices). The two states act as guarantors for the loans taken by Øresundsbro Konsortiet and pledged to share responsibilities towards creditors<sup>18</sup>. This section also received financial support from the EU's TEN-T funding programme. By the completion of the bridge, it was estimated that this support amounted to approximately DKK 780 million (approx. USD 96.6 million, 2000 prices)<sup>19</sup>.

**Net Debt in 2000**  
**Coast-to-coast infrastructure**  
**DKK 19.6 billion**  
**(approx. USD 2.4 billion)**  
**Land work**  
**DKK 10.5 billion**  
**(approx. USD 1.3 billion)**

In 2013, HH Ferries et al. (now ForSea), which operate ferries between Helsingborg to Elsinore, lodged a complaint with the EU Commission claiming that the Danish and Swedish state guarantees for Øresundsbro Konsortiet's loans are illegal according to the EU's state aid rules. After several years of procedure, this matter is still under investigation. A decision was expected in the second half of 2019 but was still pending in February 2020<sup>20</sup>.

The construction of the **connecting land infrastructure** on both sides of the Sound has also been financed by loans, taken by SVEDAB on the Swedish side (DKK 2.6 billion in 2000, approx. USD 0.3 billion – not including the cost of the outer ring road, which was funded by the Swedish National Road Administration via state budget grants), and by A/S Øresundsförbindelsen on the Danish side (DKK 7.9 billion in 2000, approx. USD 1.0 billion)<sup>21</sup>.

Toll revenues from road traffic and railway fees are the sole sources from which Øresundsbro Konsortiet's and the two parent companies' debts will be repaid. The loans taken by SVEDAB and A/S Øresundsförbindelsen for the connecting land infrastructure will be repaid thanks to dividends received from Øresundsbro Konsortiet. Initially, dividends were to be paid after the loans for the coast-to-coast section itself had been repaid. The initial payment was expected 25 years after the opening of the Link<sup>22</sup>, and Øresundsbro Konsortiet's debt was expected to be repaid approximately in 2035<sup>23</sup>. However, in 2018, the two owners decided on a new dividend policy whereby the primary focus will be on maximum debt reduction in the owner companies. The first dividend from Øresundsbro Konsortiet to its owners was paid

<sup>17</sup> Nauwelaers, C., K. Maguire and G. Ajmone Marsan (2013), "The case of Oresund (Denmark-Sweden) – Regions and Innovation: Collaborating Across Borders", *OECD Regional Development Working Papers*, 2013/21, OECD Publishing.

<sup>18</sup> Ibid.

<sup>19</sup> Ibid.

<sup>20</sup> Øresundsbro Konsortiet (2020, February 25), personal interview.

<sup>21</sup> Ibid.

<sup>22</sup> Øresundsbro Konsortiet (2002), *Annual report 2002*.

<sup>23</sup> Ibid.

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in the spring of 2018 for the financial year 2017<sup>24</sup>. In the latest estimations, the entire Link, as well as the land works, are expected to be repaid in 2050.

The terms of the Governmental Agreement signed in 1991 included the prevention of unnecessary distortion of the region's traffic balance resulting from the new infrastructure. Existing transportation measures which will continue to operate – such as the ferry between Helsingborg-Elsinore operated by ForSea – are protected from competition from other transport means.

Hence, the pricing mechanism for road fees, which are fixed by Øresundsbro Konsortiet, are based on the ferry taxes<sup>25</sup>. The price paid by users must cover all construction and operating costs, including maintenance and new investments. Value-added tax (VAT) is paid to the two governments<sup>26</sup>. In 2019, revenues from road traffic amounted to DKK 1.5 billion (approx. USD 0.2 billion, 2019 prices), which was a 3% rise compared to 2018.

Single trip price (DKK)	Online ticket	Full price	Smut Tur	Bro Pass
Car (max 6 m)	355	390	105	170
Car with trailer/ caravan 15m Camper 6-10 m Van 6-9 m	710	780	210	340
Car with trailer/caravan over 15 m Camper over 10m Camper over 6 m with trailer Van over 9 m	1350	1470	-	645
Motorcycle	195	210	52	80

**Table 1: Tolls for private customers as of the March 2020, in DKK**

The rail fee is a fixed fee which was agreed upon in the 1991 Agreement and is paid equally by the two countries' national railway agencies. The railway administrations, in turn, charge the train operators for using the Link. The amount is based on a fee of DKK 300 million in 1991 (approx. USD 47.0 million, 1991 prices) and is index-linked<sup>27</sup>. In 2019, revenues from the railway amounted DKK 512 million (approx. USD 76.4 million, 2019 prices)<sup>28</sup>.

The agreement with the guarantors stipulates that the currency of the loans can only be Danish Krone (DKK), Swedish Krona (SEK) and Euros (EUR). At the end of 2007, most of the loans were in EUR, with a small proportion in DKK and about 1% in SEK<sup>29</sup>. The toll for crossing the bridge is initially settled in DKK. Railway revenue is settled in DKK.

### Financial risks

Due to the pricing mechanism, Øresundsbro Konsortiet's revenues are closely associated with the development of the financing costs – mainly interest rates. They also directly depend on road traffic volumes. The road traffic expectations were not met in the first few years of operation, and income from car traffic was lower than expected. Indeed, the ferry connection between Helsingborg and Elsinore was still frequently used to cross the Sound<sup>30</sup>. Train traffic over the Øresund Fixed Link fared better than car traffic. However, given the financial structure of the project, the success of the train did not bring additional revenues to Øresundsbro Konsortiet, which receives fixed fees irrespective of ridership numbers. Because of that, the date of repayment of the loans was pushed several years into the future. Traffic volumes kept fluctuating over time, bringing uncertainties in cash flows. After the 2008 crisis, fluctuations in currency exchange rates, as well as the resulting relative price differentials, slightly changed the commuter behaviour. While traffic increased by 10-17% a year between 2001 and 2007, it increased by just under 5% in 2008<sup>31</sup>.

<sup>24</sup> Øresundsbro Konsortiet (2019), *Annual report 2019*.

<sup>25</sup> OMEGA centre Sweden, UCL London (n.d.) *The Øresund link - project profile*.

<sup>26</sup> Øresundsbro Konsortiet (2008), *Facts worth knowing about the Øresund bridge*.

<sup>27</sup> Øresundsbro Konsortiet (2008), *Facts worth knowing about the Øresund bridge*.

<sup>28</sup> Øresundsbro Konsortiet (2019), *Annual report 2019*.

<sup>29</sup> OMEGA centre Sweden, UCL London (n.d.) *The Øresund link - project profile*.

<sup>30</sup> Øresundsbro Konsortiet (2020, February 25), personal interview

<sup>31</sup> Ibid.

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Other factors can and have impeded cross-border mobility and lead to a reduction of traffic – and hence of revenues – using the Link:

- Covid-19<sup>32</sup> (see box below)
- Free movement of people: In 2015, border controls reintroduced by the Swedish authorities to manage the flows of refugees constrained train traffic<sup>33</sup> which led to a decrease in patronage. For the same reasons as stated earlier, this did not have a direct negative impact on Øresundsbro Konsortiet's economic situation. On the contrary, road revenues increased as commuters shifted from train to cars for their trips<sup>34</sup>.
- According to the OECD, discrepancies in tax, social insurance and pension regulations can also impact movements over the Sound: "The fiscal systems in both countries exhibit some differences that can distort location decisions and the free movement of labour and capital across the border"<sup>35</sup>.
- Partial recognition of education and grades achieved between the two countries can dissuade students to study in the neighbourhood country.
- The fees for crossing the bridge by car is a frequently raised concern and has most likely caused some unexpected diversion of traffic<sup>36</sup>.
- Other infrastructure projects currently being developed in Europe might directly impact the traffic flows through the Link. The construction of a fixed link across the Fehmarnbelt between Germany and Denmark – expected to open mid-2029 – will most likely benefit the Øresund Fixed Link, with faster car and train journeys to the European continent. Scandinavia is Germany's seventh largest trading partner. Øresundsbro Konsortiet expects the Fehmarnbelt link to increase road traffic on the Øresund Fixed Link by 1,000 vehicles per day<sup>37</sup>. On the other hand, the possibility of a tunnel between Helsingborg-Elsinore (Sweden to Denmark) could lead to traffic reduction, especially when it comes to freight traffic (see also *long-term benefits* sub-section). The impact of such a project on the Øresund Fixed Link's traffic has not been assessed yet<sup>38</sup>.

<sup>32</sup> <https://www.globenewswire.com/news-release/2020/08/13/2077641/0/en/Half-year-report.html>

<sup>33</sup> "Rail passengers crossing the Øresund Bridge had to change platforms and go through an ID check at Copenhagen Airport at Kastrup as well as a border check at the station in Hyllie [Sweden]" (*ibid.*).

<sup>34</sup> *Ibid.*

<sup>35</sup> OECD (2003), *OECD Territorial Reviews: Oresund, Denmark/Sweden 2003*, OECD Territorial Reviews, OECD Publishing, Paris.

<sup>36</sup> *Ibid.*

<sup>37</sup> Øresundsbro Konsortiet (2018), *The Øresund Bridge and its Region: 18 years*.

<sup>38</sup> Øresundsbro Konsortiet (2020, February 25), personal interview.

### Partial closure of borders due to the spread of COVID-19

In 2020, the spread of the coronavirus compelled the Danish Government to close its borders with neighbouring countries such as Sweden. The Øresund Fixed Link remained open for freight traffic and trips from Denmark to Sweden. However, strict entry rules applied for trips from Sweden to Denmark – travellers could only enter the country if they have a valid reason, such as living or working in Denmark. Car traffic controls are performed by the Danish authorities on Peberholm. Passenger trains are controlled at Kastrup Airport's station. Between the 14<sup>th</sup> March – when regulations entered into force – and the 12<sup>th</sup> of April, car traffic was about 71% lower compared to the traffic at the same period in 2019. The train traffic was severely reduced, with only one to two trains crossing the link per hour instead of the usual six. However, positively, freight traffic has only seen a minor dip.

In its 2020 half yearly report Øresund Konsortiet reported a 40% drop in traffic over the Jan – Jun period compared to 2019 as a result of the pandemic, with an equivalent drop in operating profit.

Travel restrictions began to ease in late June 2020 for people entering Denmark, depending on the level of infection in the country they reside.

### Private sector and procurement

Øresundsbro Konsortiet is responsible for negotiations with contractors. Contracts are awarded following EU procurement procedures and national legislations – usually Danish legislation<sup>39</sup>. In the construction stage, negotiations were held from July to November 1995, and deals were signed with three consortia<sup>40</sup>:

- The construction of the immersed tunnel section was awarded to the Øresund Tunnel Contractors, a consortium consisting of NCC AB (SE), Dumez-GTM SA (F), John Laing construction Ltd (UK), E. Pihl & Søn (DK), and Boskalis Westminster (NL). Value of the contract: DKK 3.8 billion (USD 0.7 billion, 1995 prices)
- The contract for constructing the artificial island and dredging was awarded to the Øresund Marine Joint Venture, a consortium of Per Aarsleff A/S (DK), Ballast Nedam Dredging b.v. (NL) and Great Lakes Dredge & Dock Co (USA). Value of the contract: DKK 1.4 billion (USD 0.3 billion, 1995 prices)
- A third contract was signed with Sundlink Contractors, a consortium of Skanska AB (SE), Højgaard & Schultz (DK), Monberg & Thorsen (DK), and Hochtief AG (Germany), for the construction of the high bridge and the two two-level approach bridges with the motorway on the upper level and the railway on the lower level. Value of the contract: DKK 6.3 billion (USD 1.1 billion, 1995 prices)

Øresundsbro Konsortiet describes the procurement procedure for the construction as quite innovative. Responsibilities were clearly defined between the owner and building companies, which was described as not common at the time. As a result, the construction process went smoothly and efficiently. There has not been any overrun from the budget initially allocated for the construction of the Link until its completion<sup>41</sup>.

The procurement of cross-border train services is under the responsibility of regional transport authorities from the two countries – Skånetrafiken in Sweden and Trafikstyrelsen in Denmark.

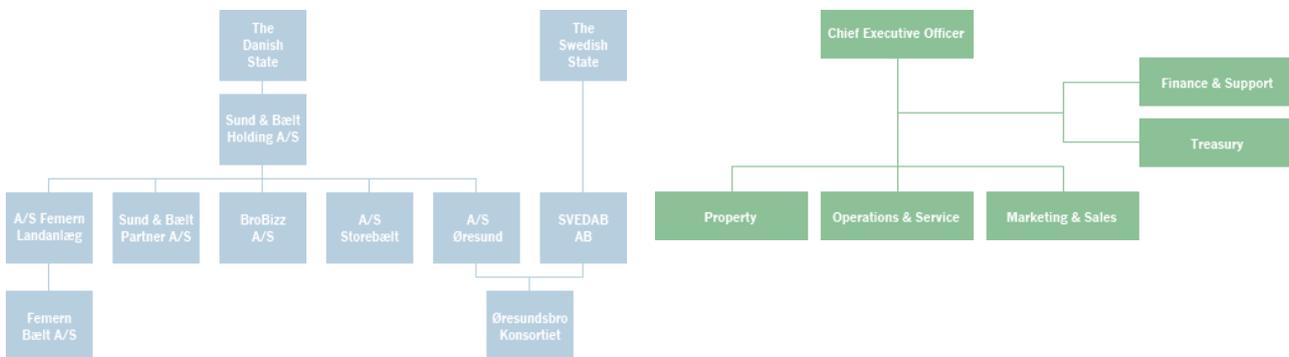
<sup>39</sup> According to our interviewee, the Consortium chooses which country's legislation will be applied.

<sup>40</sup> OMEGA centre Sweden, UCL London (n.d.) *The Øresund link - project profile*.

<sup>41</sup> Øresundsbro Konsortiet (2020, February 25), personal interview.

## Management

### Operational coordination



### 3. Øresundsbro Konsortiet ownership and management board (source: Øresundsbro Konsortiet)<sup>42</sup>

The Øresund Fixed Link is owned and operated by Øresundsbro Konsortiet, a Danish-Swedish company established based on the agreement of March 23<sup>rd</sup>, 1991 between the Governments of Denmark and Sweden. Øresundsbro Konsortiet is jointly owned by A/S Øresund and Svensk-Danska Broförbindelsen (SVEDAB), two state-owned companies<sup>43</sup>. A/S Øresund and SVEDAB are responsible for the delivery and operation of the land works on their respective sides of the Link.

As defined in the Governmental Agreement, Øresundsbro Konsortiet's two owners each appoint four members to the **Board of Directors** and nominate its Chairman and Vice-Chairman every other year. The board of directors is responsible for managing Øresundsbro Konsortiet and deciding on major strategic and economic issues. None of its members serves on the company's daily management. Day-to-day management is delegated to Øresundsbro Konsortiet's CEO, appointed by the board, and to the five department directors of the **management board** in charge of operations and maintenance tasks. These include financial administration, marketing, sales, customer and payment service, road and rail operations, maintenance, development, and administrative duties<sup>44</sup>. The consortium manages the rail infrastructure, but rail operators are responsible for traffic on the line<sup>45</sup>. The consortium is also responsible for environmental compliance. Øresundsbro Konsortiet reviews the Link's environmental impact and publishes an environmental report. In the design stage, the consortium was responsible for performing the environmental impact assessment (EIA). In 2020, about 170 people work for the Consortium<sup>46</sup>.

Traffic control and power management, as well as maintenance and railway safety coordination, are under the responsibility of Øresundsbro Konsortiet but performed by external parties<sup>47</sup>.

The Swedish road and rail administrations are responsible for maintaining and operating the connecting infrastructure on the Swedish side and the Danish counterparts are responsible for the Danish side<sup>48</sup>.

<sup>42</sup> Øresundsbro Konsortiet (2020), *Organisation*, <https://www.oresundsbron.com/en/info/organisation>

<sup>43</sup> Øresundsbro Konsortiet, multiple sources.

<sup>44</sup> Øresundsbro Konsortiet (2018), *Annual report 2018*.

<sup>45</sup> Øresundsbro Konsortiet (2008), *Facts worth knowing about the Øresund bridge*.

<sup>46</sup> Øresundsbro Konsortiet (2020, February 25), personal interview.

<sup>47</sup> Øresundsbro Konsortiet (2018) *railway operations - Network Statement 2020*.

<sup>48</sup> OMEGA centre Sweden, UCL London (n.d.) *The Øresund link - project profile*.

## Political coordination

In the early project stages, the Department of Communications (DOC) and the Ministry of Traffic (MOT) in the Swedish and Danish Governments, respectively, were responsible for background investigations and reports as well as negotiations below the minister level. Representatives and officials from the Swedish Road Administration, the Swedish Rail Administration, the Swedish State Railways and their Danish counterparts were also involved in the investigations and negotiations<sup>49</sup>.

In the design and construction stages, one of the main differences between the two countries' planning regimes concerned the formal procedures for environmental enquiries. In Denmark, the environmental assessment, through the report *Miljø Öresund 1991* – consisting of some 1 500 pages, was made public in March 1991, only a few weeks before the signing of the Governmental agreement. In Sweden, the formal procedure required that the project had to be tested against different legal frameworks in several local jurisdictions before approval, which was a long and complicated process. This led to a controversial situation, in which construction on the Danish side began before the Swedish environmental enquiry was fully completed. As the environmental inquiry could influence the shape and design of the Link, but not the actual building of it, this issue did not become critical.

The planning regimes in Denmark and Sweden are, in many ways, different. In Sweden, the planning system grants extensive power to the municipal level, often referred to as the municipal planning monopoly. However, given the size and profile of the project, many of the relevant planning and decision-making processes were carried out on a higher political level<sup>50</sup>.

## Harmonisation rules, procedures and technical standards

Øresundsbro Konsortiet established a specific safety procedure. The procedure is supported by statistical analysis (Operational Risk Analysis) and is regularly updated based on experience gained from the Link's ongoing operation<sup>51</sup>.

Rail operations are regulated by the Network Statement, in agreement with Banedanmark and Trafikverket, who are members of the Rail Net Europe (RNE) – RNE is a collaboration between 40 different European infrastructure managers with the aim of facilitating cross-border rail traffic. RNE works to ensure that infrastructure managers' network statements follow a common document structure<sup>52</sup>. Technical standards for the railway on the Link are defined in the Network Statement.

Other technical requirements, such as alignments, environmental constraints and main civil engineering principles, are defined in the 1991 Agreement<sup>53</sup>.

In collaboration with the relevant authorities in Denmark and Sweden, Øresundsbro Konsortiet maintains a comprehensive contingency plan, including an internal crisis response to handle accidents on the Link. The plan is tested regularly through exercises that meet the requirements from the authorities and the EU.<sup>54</sup>

<sup>49</sup> OMEGA centre Sweden, UCL London (n.d.) *The Øresund link - project profile*.

<sup>50</sup> OMEGA centre Sweden, UCL London (n.d.) *The Øresund link - project profile*.

<sup>51</sup> Øresundsbro Konsortiet (2018), *Annual report 2018*.

<sup>52</sup> Øresundsbro Konsortiet (2018) *railway operations-Network Statement 2020*; Øresundsbro Konsortiet (2019) *railway operations-Network Statement 2021*.

<sup>53</sup> Vincentsen, L. and K. Smedegaard Andersen (2018), *Risk Allocation in Mega-Projects in Denmark*, Working Group Paper, OECD Publishing, Paris.

<sup>54</sup> Øresundsbro Konsortiet (2018), *Annual report 2018*.

## Communication and dissemination

Øresundsbro Konsortiet includes a Marketing and Sales team, whose role it is to promote the Link and the region<sup>55</sup>. The Øresundsbro website contains information about Øresundsbro Konsortiet and the Link itself. The library gathers all documents published by the consortium, such as financial reports. But the website also provides operational information, such as real time traffic information for road transit in the bridge, weather conditions, fares policies and customer services (road traffic). Frequent travellers can subscribe to discount programs (bropass, bropass business etc.) and access their user account.

## Conclusions

- **Governance Structure:** *One of the major success stories of the Øresund Fixed Link lies in its independence from the political system. Politicians initially defined the project's framework and strategy, but later, Øresundsbro Konsortiet was relatively self-reliant. The two owners appoint the members of the board of directors but are not involved in day-to-day operations. Moreover, the Link is partially independent from the government budgets and thus does not answer to a national budget objective.*
- **Financial risks:** *Øresundsbro Konsortiet revenues are directly dependent on user traffic and can be strongly impacted by external factors such as the closure of borders or competition from other modes. In the meantime, existing transport modes between Denmark and Sweden (such as the Helsingborg-Elsinore ferry) are protected by the Governmental Agreement signed in 1991. This included the prevention of unnecessary distortion of the region's traffic balance resulting from the new infrastructure. Hence, road fees are bounded and are calculated based on the ferry taxes.*
- **Procurement:** *The construction of the Link went smoothly and efficiently thanks to clearly defined responsibilities between the owner and building companies. There has not been any overrun from the budget initially allocated for the construction of the Link until its completion.*
- **Cross-border collaboration:** *The project could have led to national competition between Sweden and Denmark. But it did not. Instead, the two countries decided to collaborate and work together on the Øresund region, for which the bridge act as a catalyst.*
- **Covid 19 management:** *Borders were temporarily closed in March 2020 on the Danish side, with the management of the Covid 19 crisis very different from one country to the other and affected therefore the border control measures. The crisis has resulted in a significant drop in traffic and therefore revenue, however Øresund Konsortiet is still operating at a profit.*

<sup>55</sup> Øresundsbro Konsortiet (2020, February 25), personal interview.