## The Channel Tunnel

**Location**  
The English Channel between Folkestone (England) and Coquelles (France)

**Sector**  
Water crossing, fixed link, rail and road

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<th><strong>Procuring authorities</strong></th>
<th>Government of the United Kingdom, Government of the Republic of France</th>
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<td>Design, build, finance, maintain, operate, transfer (DBFMOT)</td>
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Project highlights

The Channel Tunnel is a roughly 50 km rail tunnel linking Folkestone, Kent, in England, with Coquelles, Pas-de-Calais, near Calais in northern France. The tunnel extends beneath the English Channel at the Strait of Dover. It is the only fixed link between the island of Great Britain and the European mainland. It allows the city of London to be directly connected by train to Paris, Lille, Brussels, Amsterdam and Cologne – thanks to the Eurostar and Thalys train lines.

The Channel Tunnel was officially opened in 1994. Train operation consists of shuttle trains conveying cars and coaches and other trains conveying heavy goods vehicles between the two terminals. Other trains using Getlink infrastructure are operated by the respective owners.

Getlink, previously Groupe Eurotunnel (until 2017), is a public company that manages and operates the Channel Tunnel, including the Eurotunnel Shuttle vehicle services, and earns revenue on other trains through the tunnel (DB Schenker freight and Eurostar passenger trains). The company was formed in 1986, with the objective of financing, building and operating a tunnel between the two countries initially for a period of 55 years, then extended to 99 years until 2086. Getlink’s head office is located in Paris.

Originally estimated at GBP 4.8 billion in 1985 (about USD6.2 billion, 1985 prices), the Channel Tunnel’s total cost was much higher than expected, reaching GBP9.5 billion by the end of its construction (about USD14.5 billion in 1994). Project costs were vastly underestimated and an overrun of 80% was incurred. This was due to delays related to “construction cost, equipment delivery and testing problems”, and to changes to the design of the project during construction to increase safety. The project was financed entirely by private sector capital, including five banks who were part of the TransManche Link consortium. Financing originated partly from investment by shareholders and partly from GBP8 billion of debt (about USD12.2 billion, 1994 prices).

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1 Note that Getlink and Eurotunnel will be used interchangeably throughout the case study depending on the point in time being discussed.
The idea of a tunnel under the English Channel has a long history with the first proposal dating back to 1802, and several others following over subsequent years. The idea was discussed several times during the 20th century but only in the 1960s did dialogue between France and the UK result in a call for proposals, leading to the drafting of a convention in 1972, which gave the Channel Tunnel Group the mandate to start the technical and financial feasibility studies and the preparation of the construction works. Government-funded tunnel boring works started in 1974 but were cancelled in 1975 by the newly elected UK Government for financial reasons, including the oil crisis.

The project resumed in 1981 with the formation of a joint working group to study technical and economic aspects of a fixed link. After four years of studies and discussions, the procurement procedure was initiated in 1985 under British Prime Minister Margaret Thatcher and French President François Mitterrand for the construction of the link as we know it today.

**POLICY AND PLANNING SETTING**

The Channel Tunnel was approved with the signature of the Treaty of Canterbury (signed by the French and UK Governments on 12 February 1986), which authorised the construction of the Fixed Link as a concession without any public financing or guarantees. The Treaty of Canterbury also established the creation of the Channel Tunnel Intergovernmental Commission (IGC) as the body in charge of supervising the construction and operation of the Fixed Link on behalf of the French and UK Governments, as well as the general application of the Treaty. The IGC is the body in charge of adopting and implementing rules for the Channel Tunnel. Safety aspects of the project are managed under the remit of the Channel Tunnel Safety Authority (CTSA).

Another key document to the Channel Tunnel’s inception is the Concession Agreement (signed 14 March 1986), which establishes the rights and roles of the concessionaires, the two governments and the IGC. It stipulates that concessionaires of the Channel Tunnel “have the right and the obligation to carry out the development, financing, construction and operation during the Concession Period” (i.e. for 55 years from 1986 – extended by 10 years in 1994).

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and extended again in 1997 to 99 years until 2086). This is done “at their own risk, without recourse to
government funds or to government guarantees of
a financial or commercial nature and regardless of
whatever hazards may be encountered”. Furthermore,
“the Concessionaires [are] free to determine their
tariffs and commercial policy and the type of service
to be offered. In particular, laws relating to control
of prices and tariffs shall not apply to the prices and
tariffs of the Fixed Link”.

The third key document is the Railways Usage
Contract, which determines Eurotunnel’s source
of income. According to Michael Grant, at the time
Eurotunnel’s Corporate Finance Manager, “Under this
Contract, Eurotunnel is required to make half of the
tunnel capacity available to the British, French and
Belgian railways for their Eurostar and freight trains.

In return, the railways pay a fixed charge and tolls
based on the volume of traffic passing through the
tunnel together with a contribution to Eurotunnel’s
operating costs. There is a minimum charge level, a
mechanism to ensure a guaranteed level of cash flow
to Eurotunnel over the first 12 years of operation”.

The Railways Usage Contract is of fundamental
importance to the Channel Tunnel, together with the
Treaty of Canterbury and the Concession Agreement,
in giving confidence to investors that the Channel
Tunnel will remain operational.

The project contractual structure and associated
governance structure are illustrated in Figure 1.
**CHALLENGES AND OPPORTUNITIES ADDRESSED BY THE PROJECT**

The project aimed to provide a fixed (rail) link for the transport of freight and passengers (including by high speed train, ‘Train à Grande Vitesse’ or TGV), complementing ferry and air travel between the UK and France, and by extension the rest of the EU. One of the objectives of the project was to provide a transport option that was faster than the ferry and more affordable than air travel. The project had strong economic and political implications with regard to trade and tourism, in particular the strengthening of ties between the UK and France, and by extension between the UK and the rest of the EU.

**ALTERNATIVE OPTIONS CONSIDERED**

In 1985, a call for proposals received several submissions of varying designs. Four were shortlisted:

- **Euroroute**, a hybrid solution of a bridge-tunnel-bridge (GBP4.8 billion – about USD6.2 billion, 1985 prices)
- **Europont**, a suspended bridge (GBP5 billion – about USD6.5 billion)
- **Transmanche Express**, four bored tunnels allowing both railway and road traffic (GBP2.5 billion – about USD3.3 billion)
- **Eurotunnel**, a rail shuttle service for road vehicles with provision for through trains, using three tunnels (GBP2.6 billion – about USD3.4 billion).

The Eurotunnel consortium, consisting of the Channel Tunnel Group (CTG) and France-Manche (FM), was awarded the project in January 1986. Of all project options, Eurotunnel was selected in part because it offered the highest level of safety thanks to the three-tunnel design that includes two tunnels for train transit, and a tunnel in the middle for maintenance and safety evacuation (see Figure 2).

In 1994, the first Eurostar train link service was created between Paris, Lille and London, then Brussels was added in 1997 and Amsterdam in 2018, via the high-speed Eurostar train. In 2015, the Eurostar line was extended from London to Avignon, Lyon and Marseille. The Eurostar also connects London and the Savoie region of France during winter.

**LONG-TERM BENEFITS**

The Channel Tunnel project has driven transport infrastructure improvements of the road and rail networks in France and the UK that connect to, and are associated with, the tunnel. Of all designs proposed, Eurotunnel also offered the least environmental disruption, due to the tunnel being dug 40 m under the seabed, as well as less health risks from pollution (compared to an automobile ‘drive-through’ tunnel, initially preferred by the UK Government); lower vulnerability to environmental disasters; and better protection against the risk of terrorism.

In terms of trade, the trade value of the Channel Tunnel has been estimated as equivalent to 26% of total UK–EU trade as of 2016. The speed and efficiency of transport offered by the Channel Tunnel has significantly increased trade interconnectivity between the UK and the EU, with the benefit of consumers able to access products cheaply.

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Figure 2: Cross section of the Channel Tunnel, showing the three-tunnel design. Source: Getlink Group.

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13 Reported costs are cited from Finnerty (2012, p.369).
16 Ibid.
Procuring and financing

PROCUREMENT PROCESS

The project was procured using an open form of tendering. The tendering procedure formally took place after discussions between governments and with private sector actors following the release of the joint statement of the two governments in October 1984, up until the final decision a year later. The concession was awarded to the Eurotunnel consortium, who owns, finances and manages the Channel Tunnel, and which makes money with access charges levied on railway undertakings. The Eurotunnel consortium consists of CTG and FM.

The Channel Tunnel proposal from Eurotunnel was conceived as a combination of financing and construction functions. The design-and-build contract was awarded by Eurotunnel to a bi-national organisation TransManche Link (TML), a consortium made up of five banks – arranging Eurotunnel Credit – and 10 construction companies: five French companies (TRANSMANCHE) and five UK companies (TRANSLINK).

The passenger trains are run by Eurostar, which is owned by public companies:

- SNCF – 55%
- London and Continental Railways (LCR) – 40%
- SNCF – 5%.

LCR’s holding was transferred to the Treasury in June 2014, and the UK Government’s shares – equalling 40% – were sold in 2015 to a consortium comprising the Caisse des Depot et Placement du Quebec (CDPQ) and Hermes Infrastructure.

FINANCIAL STRUCTURE

The Treaty of Canterbury and the Concession Agreement established that the project would be entirely financed, delivered and operated by the private sector. This approach was particularly advocated for by the UK Government at the time to spare public expenditure on the project.

To enable total private financing of the project, the Channel Tunnel was procured as a concessional public-private partnership (PPP). The concessionaire would design, build, own, operate and transfer the project over an initial duration of 55 years, extended to 99 years throughout the many renegotiations over the debt restructuring. The initial structure was a project finance structure (equity/debt) with equity provided by five banks and 10 construction companies.

Eurotunnel had forecast that the Channel Tunnel would lead to construction costs of GBP2.8 billion (about USD3.6 billion in 1985) and total costs of GBP4.8 billion (about USD6.2 billion) between 1986 and the last year of construction, 1993. Eurotunnel planned to raise GBP6 billion (about USD7.8 billion) in order to cover the costs and possible overruns. This amount included GBP1 billion (about USD1.3 billion) in equity and GBP5 billion (about USD6.5 billion) in debt.

Moreover, construction costs were more than double their initial predictions. This was partly due to unforeseen technical complications related to the complexity of the three-tunnel design, but also modifications to the design as a result of safety concerns expressed by the IGC during construction.

In its first year of operation (1994-95), the company reported a loss of GBP925 million (about USD1.4 billion) because of disappointing revenue from passengers and freight, together with heavy interest charges on its GBP8 billion (about USD12.2 billion in 1994) of debt. In light of its financial difficulties, Eurotunnel was at serious risk and sought to refinance the project with a scheme based on debt-for-equity restructuring legally enforced using French legal protection with a ‘procédure de sauvegarde’ (safeguard procedure), effectively pausing all debt.

19 TRANSMANCHE : Bouygues, Dumez, Spie-Batignolles, La Société Auxiliaire d’Entreprises (SAE), La Société Générale d'Entreprises (SGE),
21 Eurostar.com, Behind the scenes. Available at: https://www.eurostar.com/uk-en/about-eurostar/our-company/behind-the-scenes
23 Ibid.
25 The French ‘procédure de sauvegarde’ was introduced in 2005 and is comparable to the UK legal procedure for company voluntary arrangement.
repayment processes for six months and enabling Eurotunnel to bank in some of its operating revenue to finance the restructuring effort. The refinancing plan was completed in 2007 with Eurotunnel turning a net profit of EUR1 million (about USD1.4 million) for the first time in that year.

When asked the question of what made the Channel Tunnel model withstand economic difficulties, a representative from the Getlink Group interviewed for the purpose of this case study replied that the Treaty of Canterbury and Concession Agreement, but especially the Railways Usage Contract, were fundamentally important in giving confidence to investors that a minimum volume of traffic would continue to run despite financial difficulties.

Currency risk and credit ratings
Due to the cross-border nature of the project between two countries with different currencies (the French franc and since 2002 the Euro in France, and the pound sterling in the UK), Eurotunnel has structured its debt and established its operations in both currencies to mitigate currency fluctuations. For instance, passenger traffic tends to be more UK-led whereas freight traffic is more EU-led, such that the corresponding currencies are used for either activity. This has been an advantage to Getlink: if a change in currency value occurs (such as the drop in the Pound during Brexit), Getlink can, for instance, change its focus when tendering for contracting by preferring one currency or the other.

In order to guard against customer credit risk, Getlink Group applies UK and Eurozone credit policy “requiring that every new customer undergo a credit check before being able to benefit from the Group’s standard credit terms”. Furthermore, “The Group’s credit risk exposure to account customers is managed by the continuous monitoring of their financial position and of their outstanding debt in relation to the credit limits and payment terms granted to them”.

Management

POLITICAL AND OPERATIONAL COORDINATION
The IGC is made up of an even split of French and UK Government representatives who regularly meet and oversee the Channel Tunnel’s operation. Regulatory discrepancy is minimised in the case of the Channel Tunnel due to the application by both countries of relevant EU legislation (even after Brexit). For instance, the IGC is responsible for the implementation of safety provisions from EU legislation (Directive 2004/49/EC on rail safety).

Rules and procedures are harmonised as part of implementing common EU legislation and under the regulatory role of the IGC. Border procedures are, for instance, set by EU standards for border controls for EU Member States and third countries to the EU. After Brexit, the UK will introduce import controls on EU goods at the border after the transition period ends on 31 December 2020. Immigration control will continue to be performed on the way from France to the UK due to the UK not being in the Schengen area.

Being composed of key government officials, the IGC is directly involved in the process of coordinating the transition following Brexit. In the case of a no-deal Brexit at the end of the transition period, Getlink Group remarks that Eurotunnel and Eurostar “will be dependent on the decisions of the governments and regulatory authorities regarding the licences, and operating agreements and procedures needed to ensure the smooth running of the rail service” including “border control measures, cross-border employment contracts for Eurostar personnel, operating and safety licences that are valid in the EU, as well as the regulatory and operational framework of the European Union”. France has now formally asked the European Commission if it may negotiate with the UK a new agreement supplementing the Treaty of Canterbury fixing rules governing the tunnel. At the time of writing this case study report, an agreement between the UK and the EU has not yet been found to resolve the situation.

27 Ibid.
28 A country that is not a member of the EU as well as a country or territory whose citizens do not enjoy the EU right to free movement, as defined in Art. 2(5) of the Regulation (EU) 2016/399 (Schengen Borders Code).
30 The Schengen Area, which comprises 26 European states, is an area in which citizens can cross internal borders without being subjected to border checks. The border-free Schengen Area guarantees free movement to more than 400 million EU citizens, as well as to many non-EU nationals, businesspeople, tourists or other persons legally present in the EU territory.
31 Interview with a Getlink representative.
HARMONISATION OF RULES, PROCEDURES, AND TECHNICAL STANDARDS

Technical standards for the Channel Tunnel relate mostly to safety and interoperability. In the EU, interoperability is ensured by the Safety in Railway Tunnels Technical Specifications for Interoperability (TSI), however the safety standards applied to the Channel Tunnel by the IGC do not comply with the EU TSIs. According to the Getlink Group, the reason for this is that the Channel Tunnel should obey the specific standards approved by the CTSA in accord with the tunnel’s particular design, such as its length (being one of the longest tunnels in the world). For example, shorter tunnels may more easily prescribe that trains which have an incident must run out of the tunnel and be repaired outside the tunnel. Due to the length of the Channel Tunnel, an internal firefighting system was built in four places in the tunnel, going beyond standard TSIs.

ARBITRATION ISSUES

Arbitration has occurred twice in the history of the Channel Tunnel. The first arbitration case occurred during project development and related to the rising costs of construction, which led TML to launch a claim to the International Chamber of Commerce (ICC) in Brussels, as foreseen by the construction contract, for additional construction costs of GBP1.5 billion (about USD2.0 billion, 1985 prices). As TML was threatening to suspend work unless its claim was met, Eurotunnel applied to the English court for an interim injunction to restrain TML from carrying its threat. However, this injunction was rejected, as all the parties had agreed to go to arbitration abroad in their contract.

The second time was in 2003, when Eurotunnel launched an arbitration request related to “the Governments’ failure to protect the Fixed Link from multiple incursions” of migrants leading to delays, damage and expenses. A second issue of the same arbitration relates to the ‘Governments’ granting (or failing to prevent the grant) of large subsidies to SeaFrance, thereby allowing it to remain in business, to renew its fleet and to compete with the Fixed Link on an unfair basis. Arbitration between Eurotunnel, the UK and French Governments was handled by the Permanent Court of Arbitration (PCA). The PCA eventually ruled in favour of Eurotunnel, judging that the UK and French Governments should be held liable.

ACCOUNTABILITY

The management of the Channel Tunnel is held accountable by means of transparent reporting of related activities. According to Eurotunnel’s Network Statement, the fixed link is also subjected to a performance monitoring and improvement regime which involves measurement of delays and reporting of causes, as well as reporting of incidents to Eurotunnel and to the European Railway Agency, all in accordance with relevant EU legislation. This monitoring is conducted by railway undertakings and in collaboration with Eurotunnel.
Conclusions

- **Political will** – The Channel Tunnel could be realised thanks to strong political will from both the French and UK Governments wishing to build a fixed link between the UK and the rest of Europe.

- **Financial issues** – The project has faced several financial difficulties during construction and operation that resulted in several restructures and significant losses for the private sector. However, the financial situation was able to be resolved thanks to several restructuring and refinancing plans, the participation of many individual shareholders, and the Channel Tunnel’s operating model based on the terms of the Railways Usage Contract. In hindsight it is possible that, had design been completed and agreed upon with the IGC before construction started, the project may have avoided some of its financial difficulties. This demonstrates the importance of proper planning and design to the successful delivery of infrastructure.

- **Policy, planning setting and governance** – The project benefits from a solid legal basis enshrined in the Treaty of Canterbury and the Concession Agreement, as well as the binational steer of the IGC overseeing the good implementation of the Treaty and maintenance of the project’s operations in spite of Brexit. This policy and planning setting, involving both countries on an equal footing, has provided certainty to the development and management of the project and is exemplary in terms of project governance.

- **Long-term benefits** – The Channel Tunnel is one of the longest tunnels in the world for freight and passenger transport. Channel Tunnel passenger trains allow for fast travel between the city centres of several EU capitals and cities at a low environmental footprint compared to private cars, airplanes and ferries in terms of air pollutant emissions, including greenhouse gases. The choice of a rail tunnel is also safer for people to use than the car in terms of the lower risk of accident, but also faster than the ferry, and more frequent than flights. Accounting for an estimated 26% of France—UK trade, the Channel Tunnel is a significant contributor to both French and UK consumer markets.