

REPORT

FEHMARNBELT FIXED LINK

Financial Analysis - February 2003

Main Results

March 2003

A division of
Sund & Bælt Holding A/S

Vester Søgade 10
DK-1601 Copenhagen V

Tel. +45 33 41 63 00
Fax +45 33 41 63 01

Reg. no. 202 648
CVR no. 15 69 46 88

TABLE OF CONTENTS	PAGE
1. Introduction	1
2. Updated traffic forecast and new assessment of railway payment.....	1
3. Main results of Financial Calculations.....	4
3.1 Assumptions	4
3.2 Financial results for the two models.....	4
3.3 Impact on Governments' Economy	5
4. Alternative traffic Scenarios	6
5. Financial sensitivities	7
5.1 Partial sensitivities.....	7
5.2 Borderline scenarios	9
6. Comparison to the ECI Business Cases.....	11
6.1 Changed assumptions	11
6.2 Financial results for the BOT model	13
6.3 Financial results for the State Guaranteed model.....	13
7. Conclusions of the Financial Analysis	15
APPENDIX I: General assumption in the financial calculations.....	17
APPENDIX II: Support and Revenues for the two Governments.....	18
REFERENCES	20

1. Introduction

In 2001/2002 an ECI (Enquiry of Commercial Interest) was carried out to investigate the Private Sector's interest in participating in the implementation of the Fehmarnbelt Fixed Link project. On the basis of the Private Sector's response different Business Cases were developed in order to illustrate how the Private and Public Sector could organise themselves in order to realise the project under financially viable conditions.

In continuation of the ECI report [Ref. 1] a number of analyses related to the Fehmarnbelt project have been carried out. Among these an updating of the 1999-traffic forecast and new assessments of the railway payment on the Fixed Link have given rise to recalculate two of the previously reported Business Cases for the Fehmarnbelt Fixed Link project. The new financial calculations (February 2003 – Calculations) are summarized in the following. In section 1 the new assumptions regarding traffic forecast and railway payment are stated. In section 2 the summarized financial results of the recent recalculation of the BOT-model and the State Guaranteed model will be presented as well as the consequences for the Governments' economy. In section 3 the financial results of four alternative traffic scenarios are stated. The calculations of the sensitivities are presented in section 4 and section 5 contains a comparison to the ECI Business Cases. Finally, section 6 summarizes the conclusions of the financial analysis.

2. Updated traffic forecast and new assessment of railway payment

The updated traffic forecast has been prepared by Fehmarnbelt Traffic Consortium (FTC) under two different sets of assumptions regarding the future development of the transport sector (Base Case A, Base Case B) as described in the Fehmarn Belt Forecast 2002 [Ref. 2].

For the financial calculations the forecasted road traffic for a possible opening year 2012 has been stipulated. The financial model operates with a four year ramp-up period meaning that the level of the traffic forecast is reduced with 20%, 15%, 10% and 5%, respectively, in the first 4 years of operation. This "ramp-up" period is introduced to reflect the fact, that customers might need some time to adjust to a new, faster and more direct transport route between Scandinavia and the Continent.

Further, it is assumed that the traffic has an underlying growth of 1.7% per year in the operation period. This assumption is maintained from the ECI-calculations and it is the mid-point in the FTC-trend forecast where the range is defined to be 0.8-2.5% per year.

The stipulated traffic forecast in the first year of operation (year 2012) is as follows:

Table 1: Stipulated traffic forecasts for year 2012 (incl. ramp-up effect)

Thousand vehicles	Base Case A assumptions	Base Case B assumptions
Passenger cars	2,081	2,161
Lorries	314	344
Buses	36	36
Total	2,431	2,541

The table shows that the forecasts stipulate a total number of vehicles between 2,431,000 and 2,541,000 vehicles in 2012. The difference between the two forecast is 80,000 passenger cars and 30,000 lorries more in Base Case B in year 2012.

The underlying set of toll rates used to determine the traffic volumes in the updated forecast is as follows:

Table 2: Tolls for passing the Fixed Fehmarnbelt Link

EUR excl VAT 2012-prices	Updated forecast
Passenger cars	50
Lorries	243
Buses	268
Railway payment (m EUR)	64

The basis for the tolls in the 2002-forecast has been the fares on the existing ferry line between Rødby and Puttgarden. The toll for passenger cars is the list price - 46 EUR in 2002-prices. This assumption covers the expectation that frequent users probably will be granted a certain discount and users with caravans or trailers have to pay an extra charge. The tolls for lorries and buses are estimated average ferry fares where different forms of discounts have been taken into account.

It has been assumed that the development in the tolls will follow the assumed general inflation of 2.5% p.a. from the opening year and to the end of the operation period.

It should be noted that present ferry fare for a passenger car corresponds to 60 EUR (2012-prices excl. VAT). However, it has been assumed that the consumer expenditure for crossing the Fehmarnbelt after opening of the Fixed Link has to be unchanged compared with the ferry services. According to the current EU VAT-laws transport of passenger cars by ferry is exempted for VAT, but the toll for passenger cars paid for passing a Fixed Link is subject to VAT. The net result of this difference is a reduced income for the project, corresponding to the VAT on tolls for passenger cars. The reduction due to VAT is 10 EUR (VAT 20.5%). Therefore the income for the project per passenger car is 50 EUR (2012-prices).

The railway payment has been investigated by Tetraplan [Ref. 3]. The assessment has been made on basis of the stipulated railway traffic and takes different forms of savings that arise from the change of route from the Great Belt Fixed Link to the Fehmarnbelt into consideration. The savings consist of “savings in operation”, “saving in infrastructure charges” and “value of time savings”. All elements are considered for passenger trains as well as for freight trains. The result is a minimum annual railway payment of 45 m EUR (2002-prices) excluding value of time savings and a maximum annual railway payment of 71.8 m EUR if all three elements are included.

The Ministries of Transport of Denmark and Germany have decided to leave value of time savings out of account and have set an income for the project from the railway operators of both passenger and freight traffic to 50 m EUR per year (2002 prices) for financial calculation purposes, corresponding to 64 m EUR (2012-prices) for both investigated Base Cases.

The revenue of the project is illustrated by the expected income in the opening year 2012.

Table 3: Revenue in 2012

M EUR 2012-prices	2002-forecast Base Case A	2002-forecast Base Case B
Passenger cars	104	108
Lorries	76	83
Buses	10	9
Income Road	190	200
Railway	64	64
Total	254	264

It can be concluded that the revenues based on the 2002-forecast in year 2012 amounts to 254 – 264 m EUR depending on the underlying assumptions. The revenues for the rest of the period are assumed to rise by the inflation and the traffic growth.

3. Main results of Financial Calculations

3.1 Assumptions

The February 2003 calculations have been based upon the same financial assumptions as the calculations in the ECI-report. Among the most important assumptions can be mentioned:

- Real interest rate 4 % p.a.
- Inflation 2.5 % p.a.
- Risk premium 2% p.a.¹
- Corporate tax 34 %
- Traffic growth 1.7% p.a. (2012-2041)

A more comprehensive list of assumptions is shown in Appendix I.

In the BOT-model the needed Government Support is determined by the requirement of the financial sector to the size of the cash flow and by the requirement of the concessionaire to an internal rate of return an equity of 17%. It has been assumed that the Government Support is paid to the Private Sector concessionaire as a fixed annual payment during a 30 year concession period.

In the State Guaranteed model no equity is needed and the funding is obtained in the international financial market and is backed by Government guarantees.

The Debt Payback Period is determined by the period from operation start to the year where the net debt equals zero.

3.2 Financial results for the two models

The results of the financial analysis based on the 2002 traffic forecast, the assumed toll rates and the new railway payment for the chosen models are shown in table 4 below.

1 The risk premium to be paid for a commercial loan depends directly on the risk structure of the project. In combination with the assumed real interest rate and inflation rate the risk premium of 2% reflects the interest rate obtainable for a single A-rated company.

Table 4: Results of financial calculations for BOT-model and State Guaranteed model.

	Base Case A	Base Case B	Scenarios 1 – 4
Government Support BOT-model m EUR, NPV (2002)	1,561	1,467	1,410 – 1,851 ¹⁾
Debt Payback Period State Guaranteed Model (number of years)	37	33	32- 55 ¹⁾

- 1) The sensitivities are tested in 4 scenarios. A Government Support of 1,851 m EUR or a Debt Payback Period of 55 years is calculated for the scenario where a ferry service is operating in parallel to a Fixed Link Rødby-Puttgarden. A Government Support of 1,410 m EUR or a Debt Payback Period of 32 years is calculated for a scenario where fares on competing Baltic Sea ferry services are raised with 25%.

For the BOT-model a Government Support in the order of 1.500 - 1.600 m EUR (NPV) is calculated. The amount should be evaluated in relation to the total investment of 2,820 m EUR, NPV (2002) corresponding to 5,176 m EUR in current prices². The amount corresponds to an annual support of 258 m EUR and 243 m EUR respectively in the operation period (2012-2041).

The Debt Payback Period for the State Guaranteed model is calculated to 33-37 years. A Debt Payback Period of this length is in line with the Debt Payback Periods known from the Øresund and the Great Belt projects.

3.3 *Impact on Governments' Economy*

The impact on Governments' economy is a result of the support to a private concessionaire and the income from VAT, tax payment, etc., illustrating the total economy for the two Governments seen in a more macroeconomic perspective. The table below summarizes this so-called surplus/deficit (IV) for the two selected Business Cases under the two different traffic forecasts. More details regarding support and revenues for the two Governments are presented in the Appendix II.

Table 5: Surplus/Deficit (IV) for the two Governments under different forecast assumptions

NPV (2002), M EUR	2002-forecast Base Case A assumptions	2002-forecast Base Case B assumptions
BOT-model	-1,253	-1,132
State Guaranteed model	195	264

² The investment amounts to 4,304 m EUR excluding financial costs and 5,176 m EUR including financial costs. The last figure corresponds to 2,820 m EUR calculated as net present value using a discount rate of 9.7%.

The total Government Economy shows in the BOT model a deficit of 1,132 – 1,253 EUR m (NPV) and a surplus in the State Guaranteed model of 195 – 264 EUR m (NPV).

In the ECI-report it was stated that the difference between the BOT-model and the State Guaranteed model could be seen as an expression of the price for the Governments of transferring the different forms of risks to the Private Sector. This difference adopting the new traffic forecast and the new assessment of railway payment amounts to 1,448 m EUR and 1,396 m EUR (NPV).

The financial results of the two different organizational models are not directly comparable, because in the State Guaranteed model the Government will handle the majority of the risks associated with the project, while in the BOT-model most of the risks are carried by the Private Sector.

The value of those risks is a product of the cost and probability of such risks materializing, thus their associated costs. In theory a full comparison of the BOT-model and the State Guaranteed model would require a pricing of all risks.

4. Alternative traffic Scenarios

In order to test the sensitivity of the calculated traffic demand forecasts of the traffic on the Fixed Link in 2015 for four alternative traffic scenarios have been carried out.

The scenarios are only investigated for Base Case A assumptions and result in the following predicted average daily traffic in year 2015:

Table 6: Average daily traffic for the different scenarios, 2015

Number of vehicles	Base Case A	Scenario 1	Scenario 2	Scenario 3	Scenario 4
Average daily traffic	8,756	8,395 (-4%)	8,014 (-8%)	9,449 (+8%)	7,359 (-16%)

Note: In brackets the percentage change in relation to the Base Case A.

In spite of the fact that the ferry fares and the tolls in the scenarios vary considerably the predicted average daily traffic varies only between + 8 % and -16 %. It can be concluded that the demand for crossing the Fehmarnbelt is fairly stable and inelastic.

The corresponding Government Support needed for the BOT-model is shown in table 7:

Table 7: Government Support needed in the different scenarios

m EUR (NPV 2002)	Base Case A	Scenario 1	Scenario 2	Scenario 3	Scenario 4
Government Support	1,561	1,627 (+4%)	1,724 (+10%)	1,410 (-10%)	1,851 (+19%)

Note: In brackets the percentage change in relation to the Base Case A.

The needed Government Support is varying inversely with the average daily traffic and the maximum support is calculated to 1,851 m EUR in scenario 4 where a ferry service is assumed to operate in parallel to the Fixed Link and the minimum support is calculated to 1,410 m EUR in scenario 3 where fares on competing Baltic Sea ferry services are assumed to rise with 25%. These amounts should be seen in relation to the total investment of app. 2,825 m EUR (NPV).

The Debt Payback Period in the State Guaranteed model shows corresponding changes.

Table 8: Debt Payback Period for the different scenarios for State Guaranteed model

Number of Years	Base Case A	Scenario 1	Scenario 2	Scenario 3	Scenario 4
Debt Payback Period	37	40	45	32	55

The State Guaranteed model shows the same effect as for the BOT-model. For scenario 4 the maximum Debt Payback Period is calculated to 55 years and the minimum period is calculated to 32 years for scenario 3.

5. Financial sensitivities

5.1 Partial sensitivities

In order to test the sensitivity of the financial results calculations have been carried out with the following individual changes:

Sensitivity: Railway payment changed by +/- 20% to 40/60 m EUR pr. year

Sensitivity: Real interest rate changed with +/- 1% to 3% or 5 % p.a.

Sensitivity: Traffic growth changed with +/- 0.5% to 1.2 % or 2.2 % pr. year

The results of the sensitivity calculations for the BOT-model are:

Table 9: Sensitivity: Government Support needed for a BOT-model

NPV (2002), M EUR	Base Case A assumptions	Base Case B assumptions
February 2003 calculations BOT model <ul style="list-style-type: none"> - Railway payment: 50 m EUR pr. year - Real Interest rate: 4% p.a. - Traffic growth: 1.7 % p.a. 	1,561	1,467
Sensitivity: Railway payment 60 m EUR pr. year 40 m EUR pr. year	1,479 (-5%) 1,633 (+5%)	1,391 (-5%) 1,546 (+5%)
Sensitivity: Real Interest Rate 3 % p.a. 5 % p.a.	1,301 (-20%) 1,827 (+17%)	1,213 (-17%) 1,739 (+18%)
Sensitivity: Traffic Growth 2,2 % pr. year 1,2 % pr. year	1,503 (-4%) 1,615 (+3%)	1,410 (-4%) 1,519 (+3%)

Note: In brackets the percentage change in relation to the February 2003 calculation is stated

The partial sensitivity analysis shows that 20% change in railway payment and approx. 30% change in traffic growth result in small changes (3-5%) in the Government Support. On the other hand a 25% changes in the real interest rate shows a significant change (17-20%) in the Government Support.

The results of similar sensitivity calculations for the State Guaranteed model are:

Table 10: Sensitivity: Debt Payback Period, State Guaranteed model

Number of years	Base Case A assumptions	Base Case B assumptions
February 2003 calculations State Guaranteed Model - Railway payment: 50 m EUR pr. year - Real Interest rate: 4% p.a. - Traffic growth: 1.7 % p.a.	37	33
Sensitivity: Railway payment 60 m EUR pr. year 40 m EUR pr. year	34(-3) 40(+3)	31(-2) 36(+3)
Sensitivity: Real Interest Rate 3 % p.a. 5 % p.a.	30(-7) 52(+15)	28(-5) 45(+12)
Sensitivity: Traffic Growth 2.2 % pr. year 1.2 % pr. year	33(-4) 43(+6)	30(-3) 38(+5)

Note: In brackets the change in numbers of years in relation to the February 2003 calculation.

Similar to the BOT model the sensitivity analysis shows that 20% change in railway payment and approx. 30% change in traffic growth result in small changes (3-6 years) in the Debt Payback Period. It also shows that a 25% change in the real interest rate has an impact of 5-15 years change in the Debt Payback Period.

5.2 Borderline scenarios

As a supplement to the sensitivity analysis mentioned above the financial viability of the Fehmarnbelt project for two “borderline” scenarios has been evaluated.

The scenarios are regarded as a “best/optimistic” case and a “worst/pessimistic” case. In each of the scenarios a few decisive parameters are chosen to be changed simultaneously in the financial calculation. The parameters are set on basis of the experience from the construction and operation of the Fixed Links across the Great Belt and the Øresund. The changed parameters are not the same for the two cases.

The likelihood of a development where all parameters are developing in a positive or a negative direction simultaneously has not been estimated but it is probably small. It should be noted that the revised financial calculations must be regarded as cautious due to the relatively high real interest rate, the four years ramp up period for the traffic, relative high operation and maintenance costs as well as the reduced income flow resulting from cautious setting of the toll rates and the railway payment.

The results of the financial calculations for the BOT-model and the State Guaranteed model will form the basis for the calculations.

The “best/optimistic” case is defined as:

1. Base Case B traffic assumptions
2. Real Interest Rate decreases by 1% to 3%
3. The traffic growth is set to 2.5% per year
4. Railway payment is set to 60 m EUR per year
5. Operation and maintenance costs reduced with 10 m EUR per year.

The “worst/pessimistic” case is defined as:

1. Base Case A traffic assumptions
2. The investment cost is increased by 15 %
3. Traffic growth is set to 1.2%
4. Railway payment is set to 40 m EUR per year.

The results of the calculations are:

Table 11: Financial results of the “best/optimistic” and “worst/pessimistic” cases

	Best/Optimistic case	February 2003 calculations	Worst/Pessimistic case
Government Support in the BOT-model measured as (m EUR, NPV 2002)	995	1,561	2,710
Debt Payback Period in the State Guaranteed model in years	23	33	66

The two scenarios show that the Fehmarnbelt project in the optimistic case could be paid back in 23 years, which is extraordinary well for a project of this type and scale. However the pessimistic case shows that organising the project as a BOT-project becomes even more expensive for the Governments and a 66 years Debt Payback

Period in the State Guaranteed model would probably not be regarded as acceptable.

6. Comparison to the ECI Business Cases

In order to illustrate the impact of the new traffic forecast, the new tolls and the new railway payment a comparison with the two Business Cases calculated in the ECI-report is carried out.

6.1 Changed assumptions

Table 12: Stipulated traffic forecasts year 2012 (incl. ramp-up effect)

Thousand vehicles	1999-forecast ECI report	2002-forecast Base Case A assumptions	2002-forecast Base Case B assumptions
Passenger cars	1,877	2,081 (+11%)	2,161 (+15%)
Lorries	398	314 (-21%)	344 (-14%)
Buses	49	36 (-25%)	36 (-25%)
Total	2,324	2,431 (+5%)	2,541 (+9%)

Note: In brackets the percentage change in relation to the ECI report.

The table shows that both 2002 traffic forecasts stipulate a higher total number of vehicles than the 1999-forecast. However, the composition of vehicles is changed with a 11-15% higher volume of passenger cars paying the low toll and a 14-21% smaller volume of lorries and 25% smaller volume for buses both paying the high toll.

Compared to the 1999- traffic forecast the new traffic forecast is based on a new set of assumed toll rates for passing the Fixed Fehmarnbelt Link. The new set of toll rates is the underlying toll rates used to determine the traffic volumes in the 2002-forecast.

Table 13: Tolls for passing the Fixed Fehmarnbelt Link

EUR excl VAT 2012-prices	1999-forecast ECI report	Updated forecast
Passenger cars	71	50
Trucks	257	243
Buses	257	268
Railway payment (m EUR)	113	64

In comparison with the assumptions in the ECI, the new financial analyses imply that the toll rate for passenger cars has been reduced by 30% and for the assumed income from the railway sector by 43%.

The consequences of these changes for the revenue of the project are illustrated by the changes in the expected income in the opening year 2012.

Table 14: Revenue in 2012

M EUR 2012-prices	1999-forecast ECI report	2002-forecast Base Case A	2002-forecast Base Case B
Passenger cars	134	104	108
Lorries	102	76	83
Buses	13	10	9 8
Income Road	249	190	200
Railway	113	64	64
Total	362	254	264

It can be concluded that the revenues arising from the reduced tolls in year 2012 are reduced by 27-30% depending on the underlying Base Case assumptions compared to the 1999-forecast in the ECI-report. The revenues for the rest of the period are assumed to rise by the inflation and the traffic growth both in the ECI calculation and in the revised calculations. Consequently, the total revenues in the revised calculations are reduced by 27-30% compared to the ECI calculation for the whole operation period.

The consequences for the BOT-model and the State Guaranteed model are presented below. Compared to the previous ECI Business Cases all other assumptions for the financial calculations remain unchanged, including opening year in 2012 and the 30 years concession period.

6.2 *Financial results for the BOT model*

Using the 2002 traffic forecast, the new toll assumptions and the new railway payment the financial calculations show the following changes compared to the ECI calculations in Government Support to the project for the BOT model:

Table 15: Government Support in the BOT model

NPV (2002), m EUR	Base Case A assumptions	Base Case B assumptions
ECI report	805	805
Changes in traffic volumes	+85	-24
Changes in tolls	+393	+408
Changes in railway payment	+278	+278
Revised calculation	1,561 ¹⁾	1,467 ²⁾

1) Corresponding to 258 m EUR/year in the operation period

2) Corresponding to 243 m EUR/year in the operation period.

The table shows that the need for Government Support has increased considerably for both Base Cases to 1,561 m EUR and 1,467 m EUR (net present values) depending on the underlying traffic forecast assumptions. These amounts correspond to an annual support of 258 m EUR and 243 m EUR in the operation period (2012-2041).

6.3 *Financial results for the State Guaranteed model*

For the State Guaranteed model the Debt Payback Period is the most relevant result of the financial calculation. In the table below the changes arising from each of the changed assumptions are stated as well as the total period for the February 2003 calculations in respect to the Debt Pay Back period.

Table 16: Debt Payback Period in the State Guaranteed model

Number of years	Base Case A assumptions	Base Case B assumptions
ECI report	23	23
Changes in traffic volumes	+1	-1
Changes in tolls	+8	+6
Changes in railway payment	+5	+5
February 2003 calculation	37	33

The financial calculations show that the updated traffic forecast, the new toll rates and the new railway payments result in an extension of the Debt Payback Period with 10-14 years depending of the underlying forecast assumptions. For the State Guaranteed model it has been necessary to expand the calculation period to more than the previously assumed 30 years.

The impact coming from the traffic volumes differs due to the changes in the composition of the traffic. In Base Case A the reduction in the expected traffic volumes for trucks paying the high tolls is greater than the reduction in Base Case B because of the different assumptions about user costs in the two Base Cases. In addition the rise in number of passenger cars is greater in Base Case B than in Base Case A. These two facts result in an increase of one year in Debt Payback Period for Base Case A and a reduction of one year in Base Case B.

The impact coming from reduction in tolls is bigger for Base Case A than for Base Case B due to lower total traffic volumes especially a lower number of trucks.

The impact coming from a reduction in railway payment is obviously the same for the two cases.

7. Conclusions of the Financial Analysis

The February 2003 financial calculations show that the BOT-model needs Government Support in the order of 1.500 - 1.600 m EUR (NPV). In relation to the total investment of app. 2.800 m EUR (NPV)³ a Government Support of this magnitude indicates that the BOT-model under the stated assumptions hardly can be characterized as a privately financed project.

The Debt Payback Period for the State Guaranteed model is calculated to 33-37 years. A Debt Payback Period of this length is in line with the Debt Payback Periods known from previous and actual calculations of the Øresund and the Great Belt projects under similar assumptions.

The new traffic forecast predicts a higher total number of vehicles but also a changed composition of categories. In total these changes have only small impacts on the financial result of the project.

But the changed assumptions of tolls and lower railway payment have a significant impact on the financial result of the project. The changed tolls result in approximately a 50 % increase in the needed Government Support in the BOT-model and an increase in the Debt Payback Period of 6-8 years in the State Guaranteed model. The impacts from the changed tolls show that the determination of the toll level is of the utmost importance for the financial viability of the project. The changed railway payment results in an increased Government Support in the BOT-model amounting to 278 m EUR (NPV) and an increased Debt Payback Period of 5 years in the State Guaranteed model.

The traffic scenarios with varying degrees of competition from the ferries across the Baltic Sea show that even dramatic changes in the price relation between the ferry fares and the tolls on the Fixed Link result in moderate changes in the traffic demand and correspondingly in the financial result.

The sensitivity analysis demonstrates that the financial result of the project is sensitive to changes in the real interest rate.

The analysis shows indeed that the financial result will be strongly affected by a row of changes all pointing in the same direction.

If the optimistic approach is chosen it can be seen that the Government Support in the BOT-model amounts to 995 m EUR corresponding to approx. two thirds of the February 2003 calculation. For the State Guaranteed model the Debt Payback Period is reduced by 10 years to 23 years.

3 The investment amounts to 4,304 m EUR excluding financial costs and 5,176 m EUR including financial costs. The last figure corresponds to 2,820 m EUR calculated as net present value using a discount rate of 9.7%.

On the other hand the project is not viable if the pessimistic approach is chosen. This is illustrated by the Debt Payback Period of 66 years, which normally would be regarded as unacceptable even for a public infrastructure investment. For the BOT-model the pessimistic scenario leads to an increase in Government Support to 2,710 m EUR (NPV) corresponding to app. 95 % of the total investment costs of app. 2,825 m EUR (NPV).

The financial results of the two different organizational models are not directly comparable, as it must be emphasized that in the State Guaranteed model the Government will handle the majority of the risks associated with the project, while in the BOT-model most of the risks are carried by the Private Sector.

APPENDIX I: General assumption in the financial calculations

Construction costs (m EUR current prices)	4,304
Operation costs (m EUR 2012-prices)	67
Real Interest Rate	4%
Risk Premium	2%
Inflation Rate	2.5%
Annual Debt Service Coverage Ratio (ADSCR)	1.4
Discount Rate	9.7%
Depreciation	Historical costs
Debt Instalment Profile	Annuity
Corporate Tax	34%
Traffic Growth	1.7%
Lending Fees	1.5%
Ramp-up-period	4 years
TEN support (m EUR current prices)	450
Railway payment (m EUR 2012-prices)	64
Opening year	2012
Concession period for BOT-model	30 years
Internal Rate of Return (IRR)	17%

APPENDIX II: Support and Revenues for the two Governments

In the ECI-report four different forms of surplus/deficits for the two Governments economy were defined.

In order to be able to compare the February 2003 calculation to the ECI figures the same definition has been used in the tables below where the support and revenues for the BOT-model and the State Guaranteed model is stated. In this connection it has to be mentioned that the railway payment now is an assessment of the payment ability of the railway sector where it in the ECI-report was regarded as a state guaranteed payment.

Government Support and revenues in the BOT-model

NPV (2002), m EUR	Base Case A	Base Case B
Government Investment	0	0
Government Subsidy	1,561 ¹⁾	1,467 ²⁾
TEN Support	248	248
Railway Payment	336	336
Total Public Support	2,145	2,051
Concession Fee	0	0
NPV from the Project Cash Flow	0	0
Total Government Revenues	0	0
Surplus/Deficit I	-2,145	-2,051
EU Support (TEN) received	248	248
Surplus/Deficit II	-1,897	-1,803
Railway Payment re-gained	336	336
Surplus/Deficit III	-1,561	-1,467
Corporate Tax	15	24
VAT	293	310
Surplus/Deficit IV	-1,253	-1,132

1) Corresponding to 258 m EUR/year in the operation period

2) Corresponding to 243 m EUR/year in the operation period.

Government Support and revenues in the State Guaranteed model

NPV (2002), m EUR	Base Case A	Base Case B
Government Investment	0	0
Government Subsidy	0	0
TEN Support	248	248
Railway Payment	336	336
Total Public Support	584	584
Concession Fee	0	0
NPV from the Project Cash Flow	-98	-46
Total Government Revenues	-98	-46
Surplus/Deficit I	-682	-630
EU Support (TEN) received	248	248
Surplus/Deficit II	-434	-382
Railway Payment re-gained	336	336
Surplus/Deficit III	-98	-46
Corporate Tax	0	0
VAT	293	310
Surplus/Deficit IV	195	264

REFERENCES

1. Fehmarnbelt Development Joint Venture, Fehmarnbelt, Finance and Organisation, June 2002.
2. Fehmarnbelt Traffic Consortium, Fehmarn Belt Forecast 2002, March 2003.
3. TetraPlan A/S, Fehmarn Belt Fixed Link, Analysis of Rail Infrastructure Payment, March 2003.