EUROPEAN INVESTMENT BANK

EIB tunnel financing: technical and contractual best practices (Roads and Railways)
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Greek Tunnelling Society
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www.tunnelcontracts2012.com

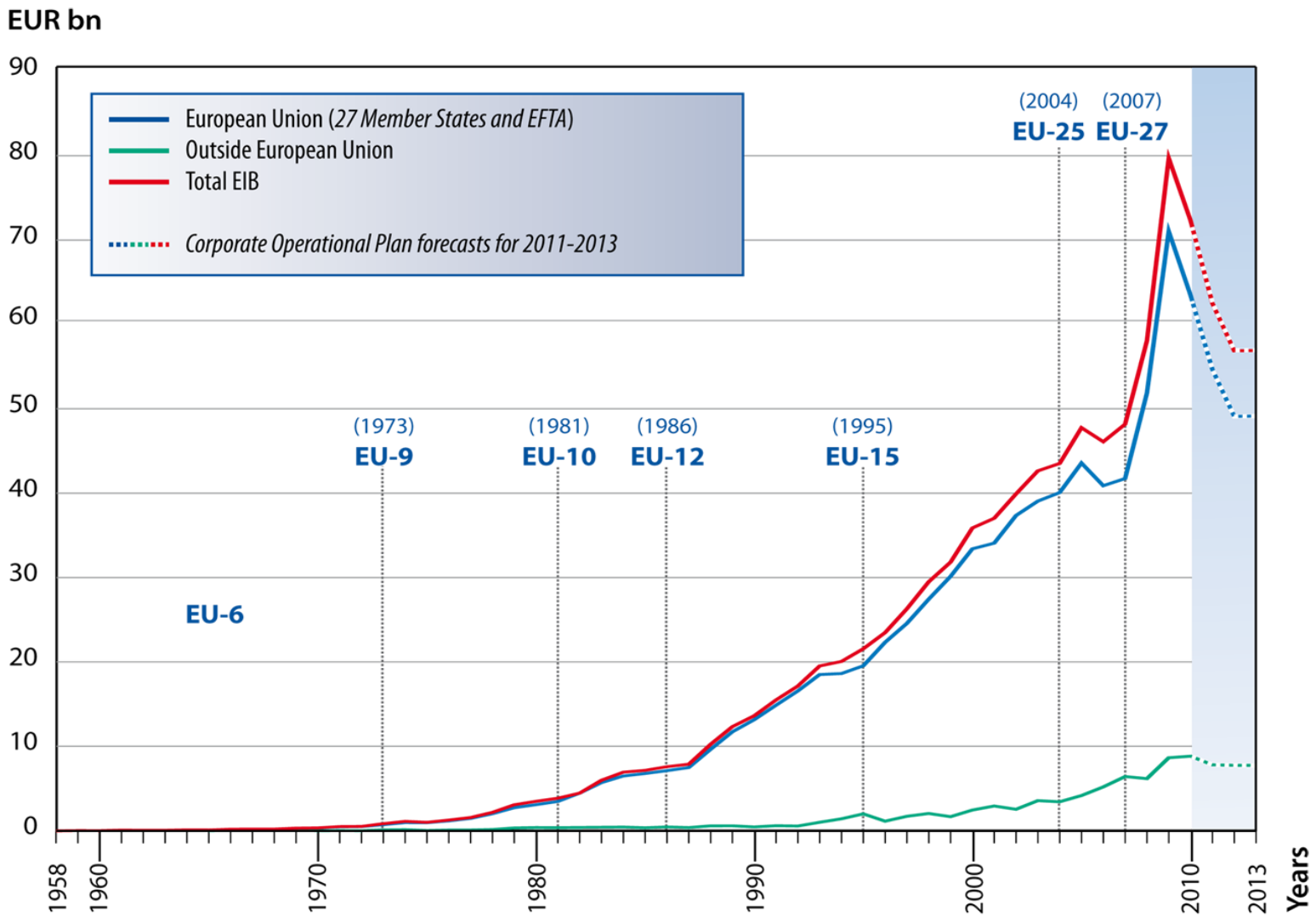
1. Introduction to EIB
2. Activity in Tunneling Sector
3. Trends on Financing - PPPs
4. Technical and Contractual Aspects
5. Conclusions

The European Investment Bank (EIB)

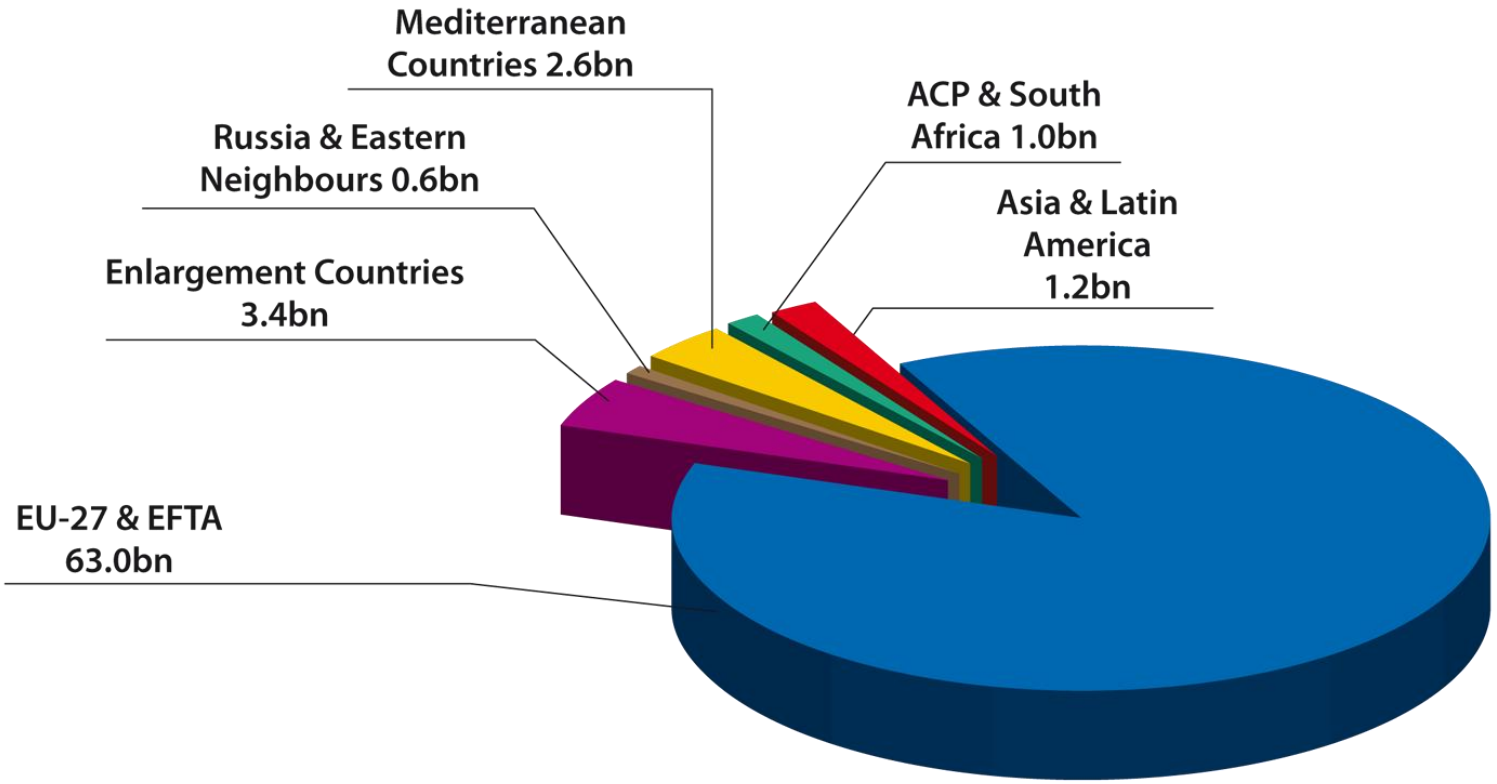
Long-term Finance Promoting European Objectives

- European Union's long-term lending bank set up in 1958 by the Treaty of Rome
- Shareholders: 27 EU Member States
- Governance
  - Board of Governors – EU Finance Ministers
  - Board of Directors - Member States & European Commission
  - Management Committee –EIB's executive body
  - Audit Committee – independent, non-resident

EIB Signatures 1958-2010



EIB Signatures 2010 (in EUR)



European priority objectives

- Within the Union:
  - Cohesion and convergence
  - Small and medium-sized enterprises (SMEs)
  - Environmental sustainability
  - Knowledge Economy
  - Trans-European Networks (TENs)
  - Sustainable, competitive and secure energy

Value Added

- Value-Added of the Bank's lending activities:
  - Support for EU priority objectives
  - Project quality and soundness
  - Financial benefits of EIB funds
  - Technical assistance
  - Project assessment

The EIB project cycle

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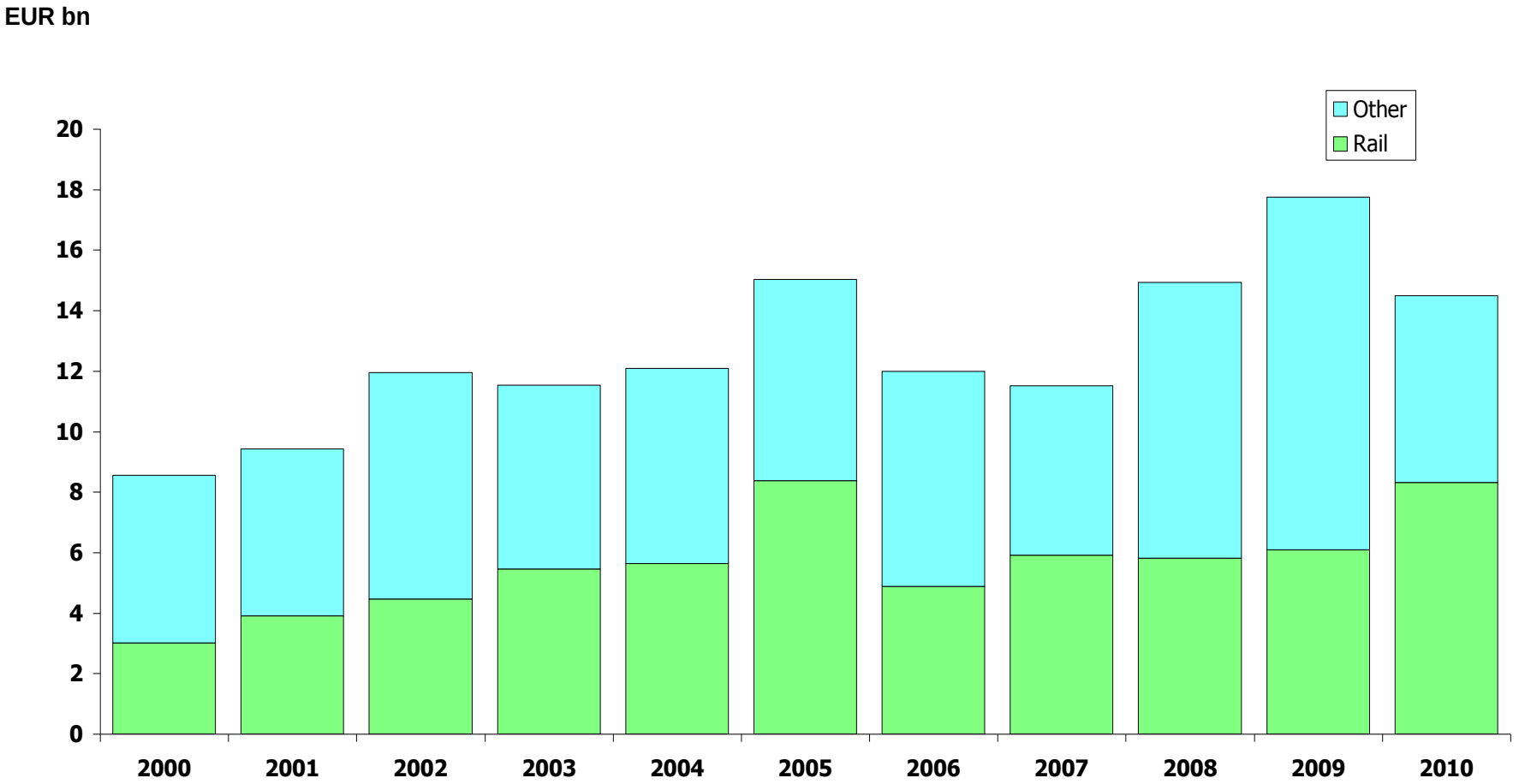
Ljubljana
Zagreb
Kupa
Una
Sava
Drava
Dinaric Mountains
CROATIA
BOSNIA AND HERZEGOVINA
Sarajevo
Belgrade
SERBIA AND MONTENEGRO
ROMANIA
Southern Carpathians
Bukarest
Olt
Danube
Morava
Balkan Mountains
Sofia
BULGARIA
Rila
Pirin
Rhodopes
Maritsa
Skopje
MACEDONIA
Tirana
ALBANIA
Pindus Mountains
GREECE
Athens
TURKEY
Aegean Sea
Black Sea
Adriatic Sea
Ionian Sea
ITALY
3000
2000
1500
750
m
250
100
0
km
0 50 100
The outline in the northwest is a geographic border seperating Alps from Dinaric Mountains.
Alternative historical or cultural borders are marked with ····· lines.

EIB Transport lending strategy (Dec,2011)

- Key issues
  - Support the best solutions that satisfy the demand requirements
  - Development of TEN's
  - Road Safety / Tunnel Safety
  - Climate Adaptation
  - Pursue reduction of greenhouse gas emissions
  - RDI and energy efficiency

Lending to the Transport Sector



Lending to Tunnelling Sector – Old projects

1	1974-7038	SECOND DARTFORD TUNNEL	Fully Reimbursed
2	1974-7052	TUNNEL ROUTIER DU FREJUS A	Fully Reimbursed
3	1974-7064	TUNNEL ROUTIER DU FREJUS B	Fully Reimbursed
4	1986-0820	EUROTUNNEL (UK AND F)	Fully Reimbursed
5	1986-0821	EUROTUNNEL(F/UK)	Fully Reimbursed
6	1989-2263	EUROTUNNEL 2 (UK / F)	Fully Reimbursed
7	1990-0297	TUNNEL PRADO-CARENAGE MARSEILLE	Fully Reimbursed
8	1991-0120	CNA/SAPRR A40 II (TUNNEL CHAMOISE) 1&2	Fully Reimbursed
9	1993-0211	WIJKERTUNNEL (NL/ED)	Fully Reimbursed
10	1994-1131	EUROTUNNEL 3 (GB/FR)	Fully Reimbursed
11	1994-1134	CHANNEL TUNNEL RAIL LINK UK/TEN PH PPP	Fully Reimbursed
12	2000-0311	STRASSENTUNNEL HEMELINGEN, BREMEN	Fully Reimbursed
13	2003-0061	CHANNEL TUNNEL RAIL LINK S2 - TEN	Fully Reimbursed
14	1995-1109	THE FOURTH TUBE ELBE TUNNEL 1&2 - PPP	Fully Disbursed
15	1997-1232	WESER TUNNEL - PPP	Fully Disbursed
16	1998-2166	ENGELBERGBASISTUNNEL PPP	Fully Disbursed
17	2000-0326	TUNNEL DU MONT BLANC	Fully Disbursed
18	2000-0136	MALMO CITY TUNNEL	Cancelled After Signature
19	2004-0073	THESSALONIKI SUBMERGED TUNNEL PPP	Cancelled After Signature

Lending to Tunnelling Sector – On-going

1	**1999-0272**	BOSPHORUS TUNNEL	**Fully Signed**
2	**2005-0103**	BOSPHORUS TUNNEL - COMMUTER TRAINS	**Fully Signed**
3	**2005-0425**	**2ND COEN TUNNEL PPP**	**Fully Signed**
4	**2006-0218**	**INFRABEL RAIL TUNNEL PPP**	**Fully Signed**
5	**2005-0299**	BRENNER BASE (RAILWAY) TUNNEL	Initiated
6	**2010-0526**	**DUBLIN TEN-T RAIL TUNNEL (DART) PPP**	Initiated
7	**2009-0678**	**EURASIA TUNNEL (PPP)**	Approved CA
8	**2010-0182**	FREJUS TUNNEL IMPROVEMENTS	Approved CA
9	**2008-0033**	**ORLOVSKI TUNNEL PPP**	At Pre-Appraisal
10	**2009-0170**	BRENNER BASE TUNNEL-ITALIAN FINANCING	At Pre-Appraisal
11	**2011-0053**	BESKYD RAILWAY TUNNEL	At Pre-Appraisal

Recent Investment Loans in Tunnels – Trends

Operation	Country	Loan amount (million) / EIB contribution
Road - 2nd Coen Tunnel - PPP	NL	EUR 620/300
TENT T Road – Struma	BU	EUR 1000 / ?
TENT T Egnatia – Odos (Concession) This one is divided in various project for the Bank: East – Central – Central&East Egnatia – Egnatia&Epirus – West&Panagia – Thessaloniki Orbital	GR	1997 EUR 430/215 1999 EUR 800/350 1999 EUR 449/175 2001 EUR 1737/840 2003 EUR 822/400 2004 EUR 580/290
PATHEP RAILWAY CORRIDOR PP22 - Support to the Hellenic Railways (Framework Loan)	GR	2008 EUR 2800 / 1000
Rail - LGV Perpignan - Figueres	ES/FR	EUR 1220 / 500

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FINANCING OPTIONS (1)

- "Classic" Financing
  - Directly to Infrastructure Manager
  - Guarantee of EIB loan – State Guarantee or Guarantee from Commercial Banks
- Structured Finance Facility (SFF) – Sharing of Construction Risk by EIB

FINANCING OPTIONS (2)

- Loan Guarantee for TEN-T (LGTT)
  - Guarantee Provided for Lower than Forecast Revenues During Project Ramp-Up Period
  - Typically (but not exclusively) in Context of PPP-Financed Projects
    - (not yet in Greece)
- PPP Financing
  - Without SFF – State Guarantee or Bank Guarantee (from commercial Banks)
  - With SFF – with EIB risk sharing, but only for SFF portion of loan

Financing challenge

- Outlook poor
  - Deteriorating fiscal position of governments, including regions
  - Sharp rise in cost of borrowing to governments
  - Contraction in private finance market

- EIB can help, but project must be sound

What is a PPP?
A Complex Web of Contracts & Cash Flow

Public sector body

Direct Agreement

Paying users

Concession Agreement

Revenues

Customer Contract

minus

Risk appetite

Senior lenders

Subordinated lenders

Debt service

Loan Contract

Private Special Purpose Co.

Capex

Construction Co.

EPC Contract

Costs

Financial equity investors

Dividends

O&M Contract

Opex

Operating Co.

plus

Shareholders Agreement

Dividends

70 to 95% Debt

Sponsor | Sponsor | Sponsor

PPP FINANCING ASPECTS (1)

Contraction in Financial Markets

- Mobilisation of Funding from Commercial Banks Increasingly Difficult in Current Financial Climate (EIB Finance Covers Maximum 50% of Project Cost)
- Cost of Finance is Increasing (spreads)

PPP FINANCING ASPECTS (2)

Decreasing EIB Appetite for SFF

- In 2001-2008 typically EUR 200-300 million per operation
- Currently EUR 50-100 million per operation – signalling effect

PPP FINANCING ASPECTS (3)

Increasing Difficulties Associated with Bank Guarantees

- Stress on National Finances due to Financial Crisis: Difficulties in Obtaining State Guarantees
- Cost of Bank Guarantees is Increasing – Negative Impact on Financial Viability of Projects
- Commercial Banks under Stress – Limits on Amounts of Bank Guarantees Acceptable to EIB

PPP FINANCING ASPECTS (4)

PPP Financing is Currently Under Additional Stress

Current Options

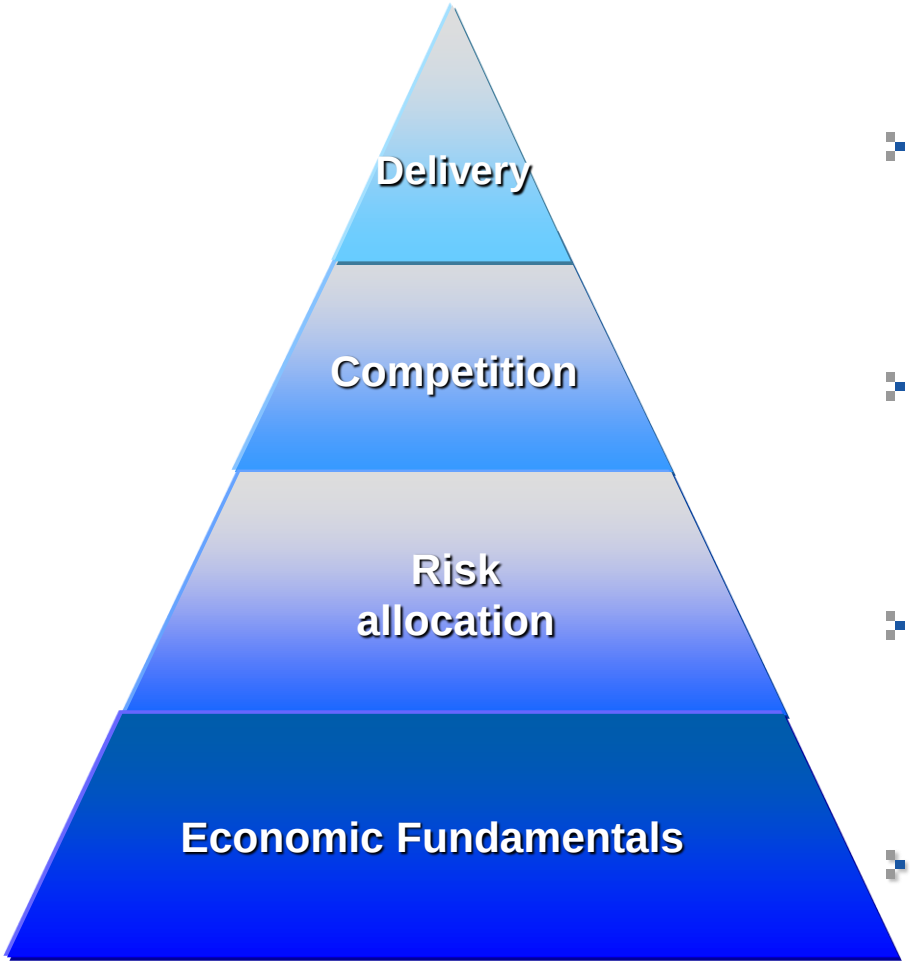
- Loan Guarantee for TEN-T (LGTT)
- Investments Funds:

  (For example, for Providing Equity for SPV in PPP)

Potential Options

- Issuing of Project Bonds in Capital Markets – but Bonds must have attractive rating, ideally above BBB+
- Mechanisms for Improving Investment Grade Rating of Project Bonds for Better Access to Capitals Markets
- But, essentially: Healthy Economic Fundamentals of Projects

Key success factors for projects



- Public sector's capacity to manage
- Competitiveness of bidding process
- Appropriateness of risk sharing
- **Economic fundamentals**

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PJ Role

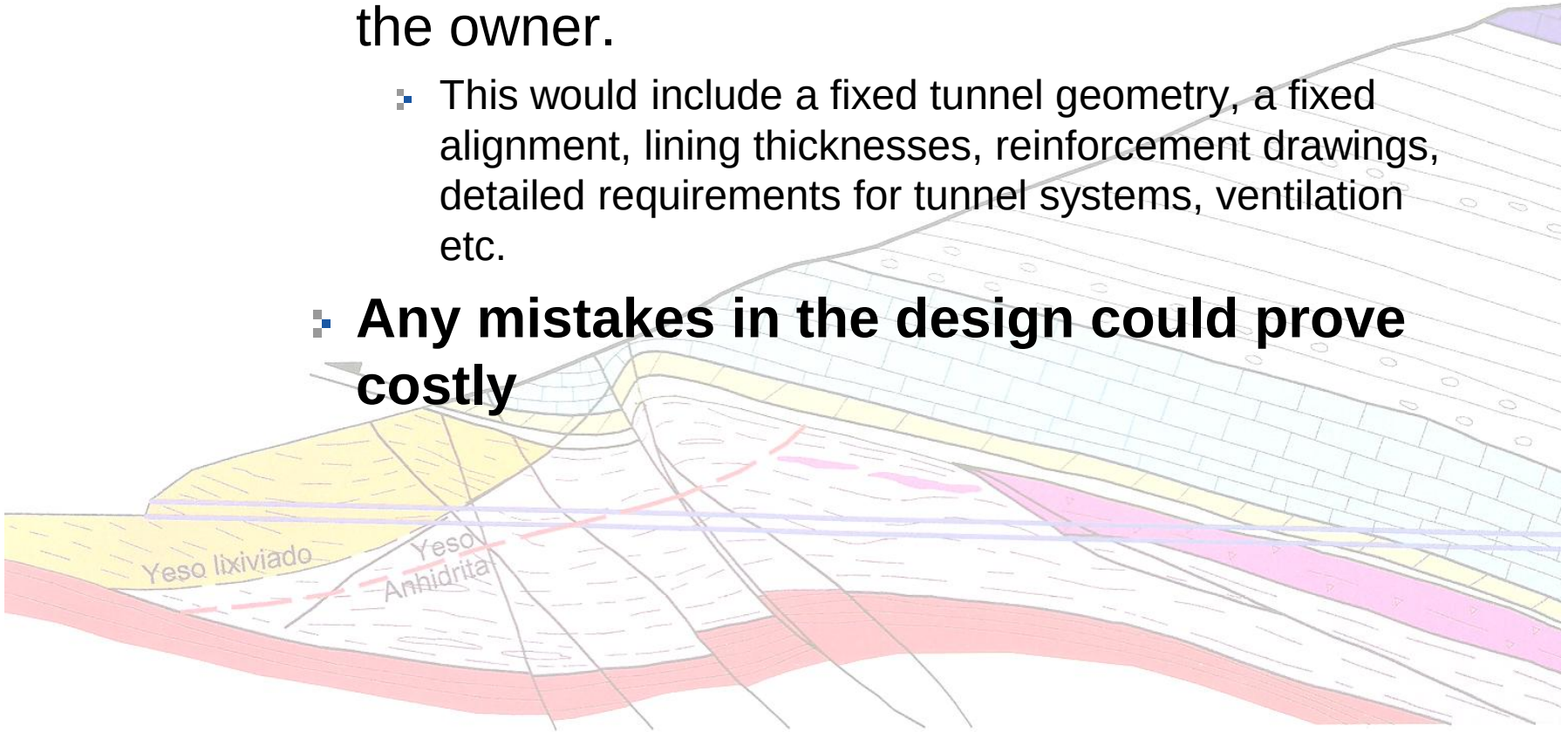
- The Technical Department within the Bank is the Projects Directorate (PJ).
  - PJ check the technical risks of the operation and that the necessary information is available,
  - We determine if the project is mature,
  - Evaluate the construction risk / acceptable risks & propose actions to reduce the risks and its impact,
  - Monitor the advancement of the Project / providing, if necessary, technical advise to the promoter and to the Project Delivery Agent.

Procurement Legal Framework

- **EIB Guide to Procurement**
  - http://www.eib.org/attachments/thematic/procurement_en.pdf
- **Within the European Union - EC Directives**
  - A full list of EU legal instruments concerning procurement can be found at the website:
  - http://ec.europa.eu/internal_market/publicprocurement/index_en.htm
- **Concession contract According to Directive 93/37/CEE**

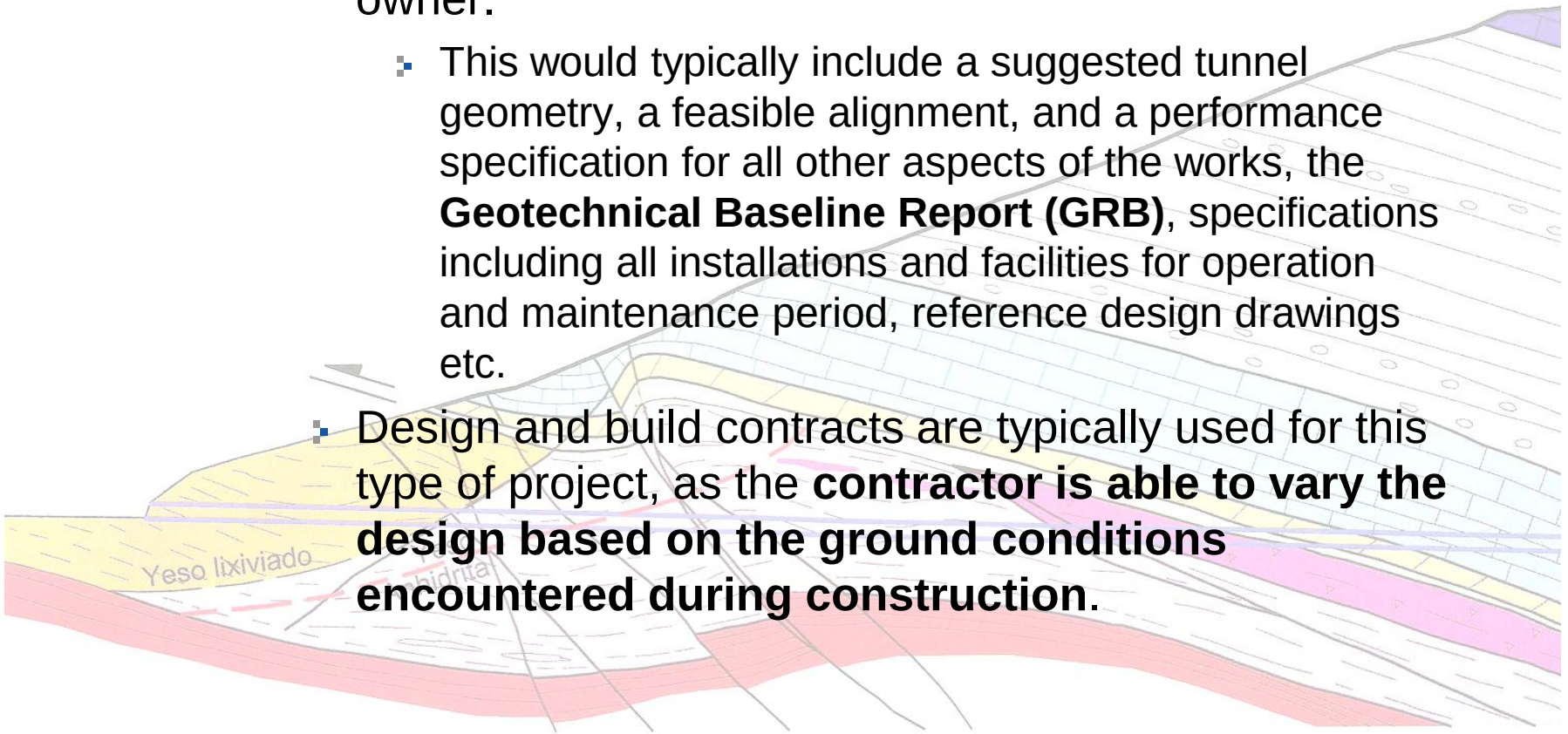
Tunnel - Procurement Methods

- **Engineer´s Design**
  - **Detailed Design** is prepared on behalf of the owner.
    - This would include a fixed tunnel geometry, a fixed alignment, lining thicknesses, reinforcement drawings, detailed requirements for tunnel systems, ventilation etc.
  - **Any mistakes in the design could prove costly**



Tunnel - Procurement Methods

- **Design and Build**
  - **Reference Design** is prepared on behalf of the owner.
    - This would typically include a suggested tunnel geometry, a feasible alignment, and a performance specification for all other aspects of the works, the **Geotechnical Baseline Report (GRB)**, specifications including all installations and facilities for operation and maintenance period, reference design drawings etc.
  - Design and build contracts are typically used for this type of project, as the **contractor is able to vary the design based on the ground conditions encountered during construction**.



Tunnel - Conditions of Contract

Conditions of Contract

Underground construction is different from any other type of construction

A) Uncertainties in ground conditions,
B) High construction risk,
C) Dependency on method of construction,

Contract conditions must allow for changing ground conditions which may not have been envisaged at the start of the procurement process. This is particularly true for drill and blast tunnelling, where the temporary support requirements can vary enormously from what was envisaged.

The contract should ideally include some provision for variations due to ground conditions, possibly through the use of a geotechnical baseline report ('GBR'- see below).

The choice of construction method should be left to the contractor based on the ground conditions, physical constraints of the site, programme duration, and tunnel geometry prescribed by the owner.

Tunnel - Safety

- Directive 2004/54/EC of the European Parliament and of the Council of 29 April 2004 on Minimum Safety Requirements for Tunnels int he Trans-european **Road Network**
  - tunnels longer than 500 meters and belonging to the Trans European Road Network meet minimum safety requirements
- Commission Decision of 20 December 2007 concerning the technical specification of interoperability relating to ‘safety in railway tunnels’ in the **trans-European conventional and high-speed rail system**
- Business Best Practices - Codex 779-9 for Railway Tunnels (*)

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EIB

- Large player in EU market
- Bank supports projects with sound economic case; appropriate financial structure.
- EU and EIB policy strongly supports rail, but…
- Deteriorating Financial Position of Governments

PPP Financing Aspects

- Contraction of Financial Markets and Increased Cost of Finance
- Decreasing EIB Appetite for Risk
- Increasing Difficulties for Obtaining Bank Guarantees
- PPP Financing Under Stress

Innovative Options Available or Being Explored

- LGTT
- Investment Funds
- Project Bonds with Improved Rating

but…

- Economic Fundamentals of Project Remain Essential

For more information…

Thank You

http://www.eib.org/