



Financing and Organization of DK Infrastructure

Learnings from Denmark

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The better the question. The better the answer. The better the world works.

Introduction

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Financing and Organization of Danish Infrastructure Projects

The Danish State Guarantee Model

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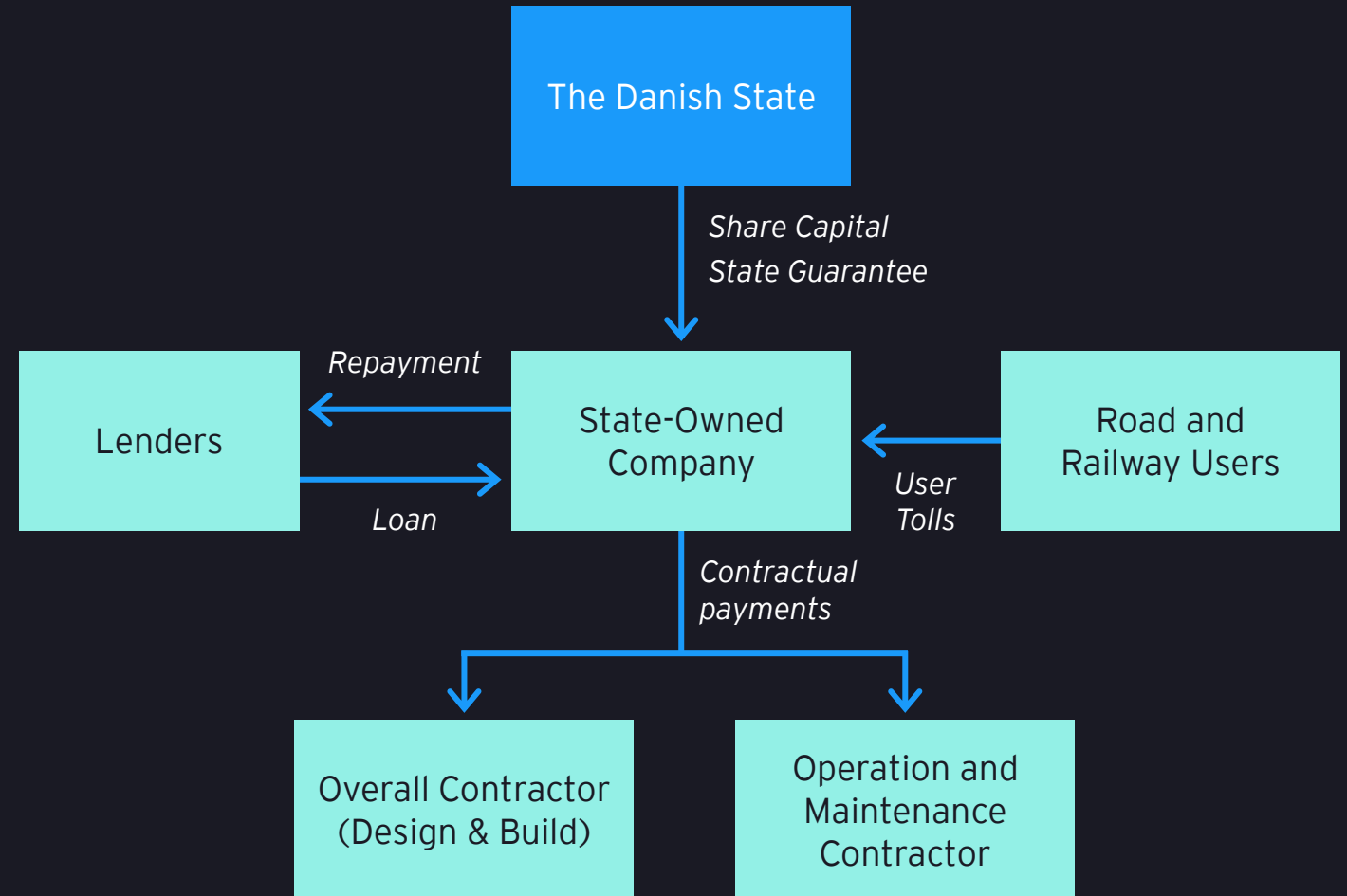
Public Private Partnerships

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The Danish State Guarantee Model

The Danish State Guarantee Model in Short

- Infrastructure project is paid for by users
- State guarantee on all loans
- Organised through a private company entity comparable to the SPV in a PPP setup
- Full-state ownership of the company entity
- The company is managed professionally and at arms-length
- Full-state control and insight



Three Danish Infrastructure Projects

Danish Ministry of Transport

Sund & Bælt Holding A/S

Storebælt Fixed Link

- 100% Danish project
- Links Zealand and Funen
- Opened 1998
- 18 km

Øresund Fixed Link

- Jointly-owned with Sweden
- Links Denmark and Sweden
- Opened 2000
- 16 km

Fehmernbelt Fixed Link

- 100% Danish project (except German Hinterland)
- Links Denmark and Germany
- Expected completion in 2029
- 18 km



The Projects in Facts and Figures

	Storebælt Fixed Link	Øresund Fixed Link	Fehmernbelt Fixed Link
Project Company	A/S Storebælt (BroBizz A/S, BroBizz Operatør A/S)	A/S Øresund (Øresundsbro Konsortiet I/S)	A/S Femern Landanlæg (Femern A/S)
Total Cost	DKK 21.4bn (1988 prices)	DKK 30.1bn (2000 prices)	DKK 52.6bn, incl. DKK 7.3bn reserves (2015 prices)
Annual Net Revenue (2024)	DKK 3.5bn	DKK 2.4bn	No publicly available estimate
Annual Net Income (2024)	DKK 1.8bn	DKK 1.7bn	No publicly available estimate
Expected Final Debt Repayment (2024)	Year 2035*	Year 2050**	28 years after opening

*Storebælt Fixed Link debt could have been fully repaid in 2022

**Øresund Fixed Link debt could have been fully repaid in 2034

The Danish State Guarantee Model – Advantages



Project costs are paid for by the users, who are benefitting from the project, rather than all tax-payers in the country



More efficient project management than normally found in a public procurement project



Professional management and board operating at arms-length



Able to compete for private sector talent



Enables the transfer of learnings from one project to another due to the shared holding organization

Compared to PPPs

1. *Lower financing costs, as the state bears the risk (especially the demand-risk)*
2. *Private investors require uncertainty premium*
3. *High-risk projects are not appropriate for PPPs*
4. *Separated from budget constraints from the government's annual finance act*

The Danish State Guarantee Model – Disadvantages



- Government can put pressure on project company
- Model is less effective in countries with weak institutions



- Potential lack of incentive for efficiency, which is often associated with private ownership (and risk-taking)
 - *Need for comprehensive governance model*
 - *Board of directors of project company should be held responsible*
 - *Financial goals should be clearly defined*



- Can be seen as easy money from a government perspective
 - *Need to be aware of compliance risk with EU state aid rules*
 - *Need for market-based pricing*

Femern – The Danish Financing Model Validated

Bond-Based Financing

- Borrowing is typically undertaken by the project company issuing bonds, which are purchased by pension funds or other investors.
- To support the project, **the state guaranteed**:
 - *The project company's **borrowing**, including any refinancing of previously raised loans.*
 - *The company's other **financial contracts** used in connection with the financial management, such as swaps.*
 - ***Non-financial obligations** without further notification (e.g. fulfilment of the signed construction contracts).*
- The project company thus obtain the same credit rating as the state and can therefore obtain virtually the same loan terms as the state itself. Since the company's bonds are less liquid than government bonds, however, a small liquidity premium accrues to the investor.

Compliance With EU Regulations

- In connection with an EU ruling on the Fehmarn Belt Fixed Link, Denmark succeeded in key areas:
 - *According to the Commission, both the capital contribution, the state loan guarantees, and the state loan constitute state aid that could qualify as investment aid.*
 - *The Commission found that the investment aid was **proportionate and necessary**, and that the project's **positive effects outweighed the potential competition-distorting effects**.*
 - *But: Femern A/S is obliged to pay an **annual premium of 2%** on the State guaranteed debt and the State loans to the Danish State.*
- The above validation meant that the financing of the project could continue to be **excluded** from Denmark's national debt.

Spin-Offs from the Model and the S&B Company

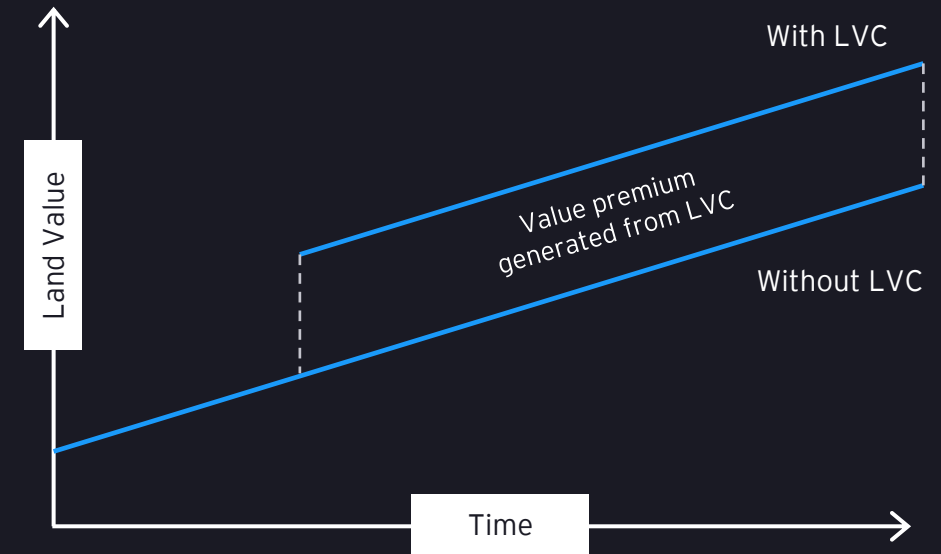
- The model has made large and complex infrastructure projects possible for the otherwise small Danish state
- The model has introduced market-based mechanisms in the management of Danish transport infrastructure
- The business scope of Sund & Bælt Holding A/S is now being expanded into other areas, such as general asset management
 - *Management of harbors for protection against a future shutdown of Storebælt Fixed Link*
- *Management of commercial companies for user-payment of transportation infrastructure*
- Due to its proven successful track record, Sund & Bælt is looking into expanding into other infrastructure projects in the Nordics
- Another result of the solid track-record of S&B is that private capital is increasingly expressing interest in S&B projects



A similar logic: Land Value Capture (LVC)

- Our Work With Lynetteholmen

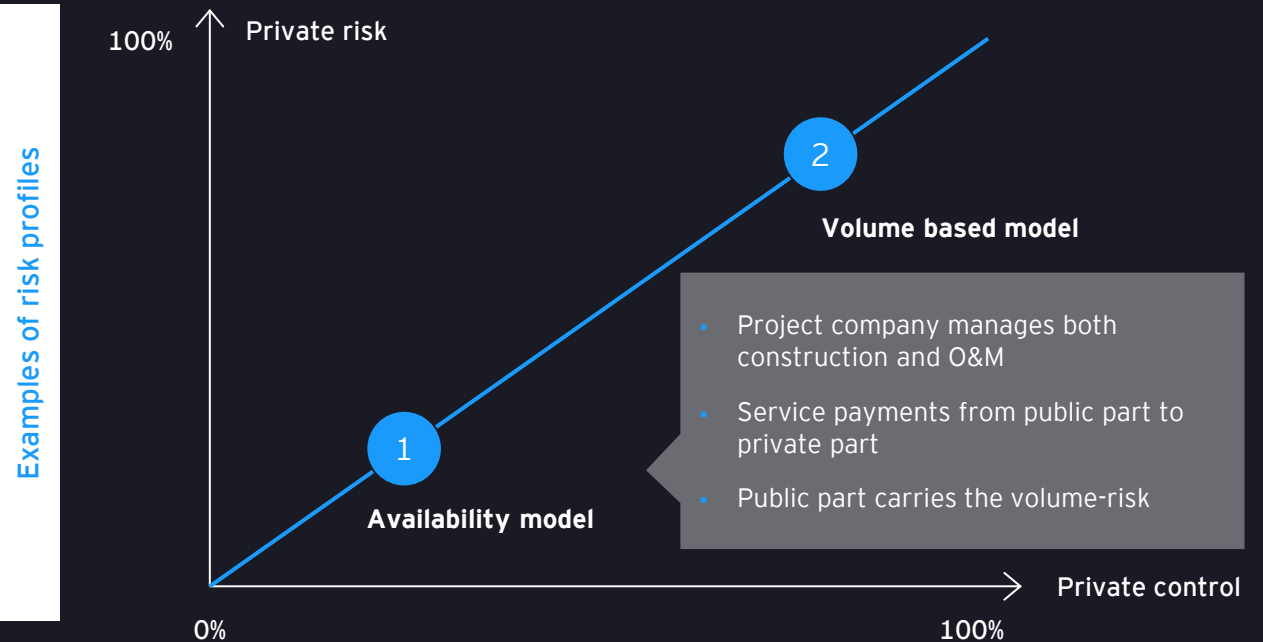
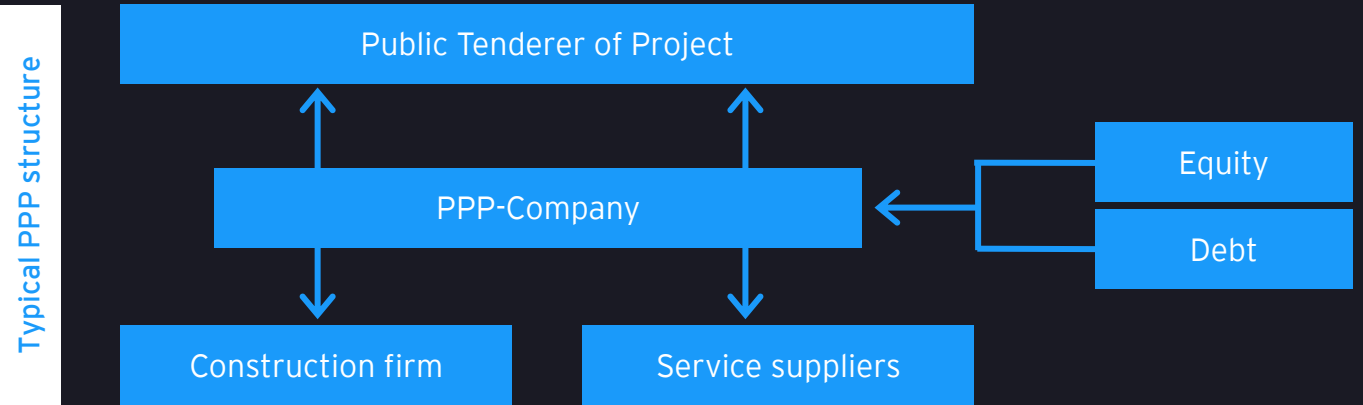
- A new part of Copenhagen is under construction
- Space for 50,000 new inhabitants and 30,000 new jobs
- 20,000 new homes
- Lynetteholmen's LVC:
 - *Proceeds from sale of building rights on land-filled areas*
 - *Voluntary value-capture contributions from real estate developers*



Public-Private Partnerships

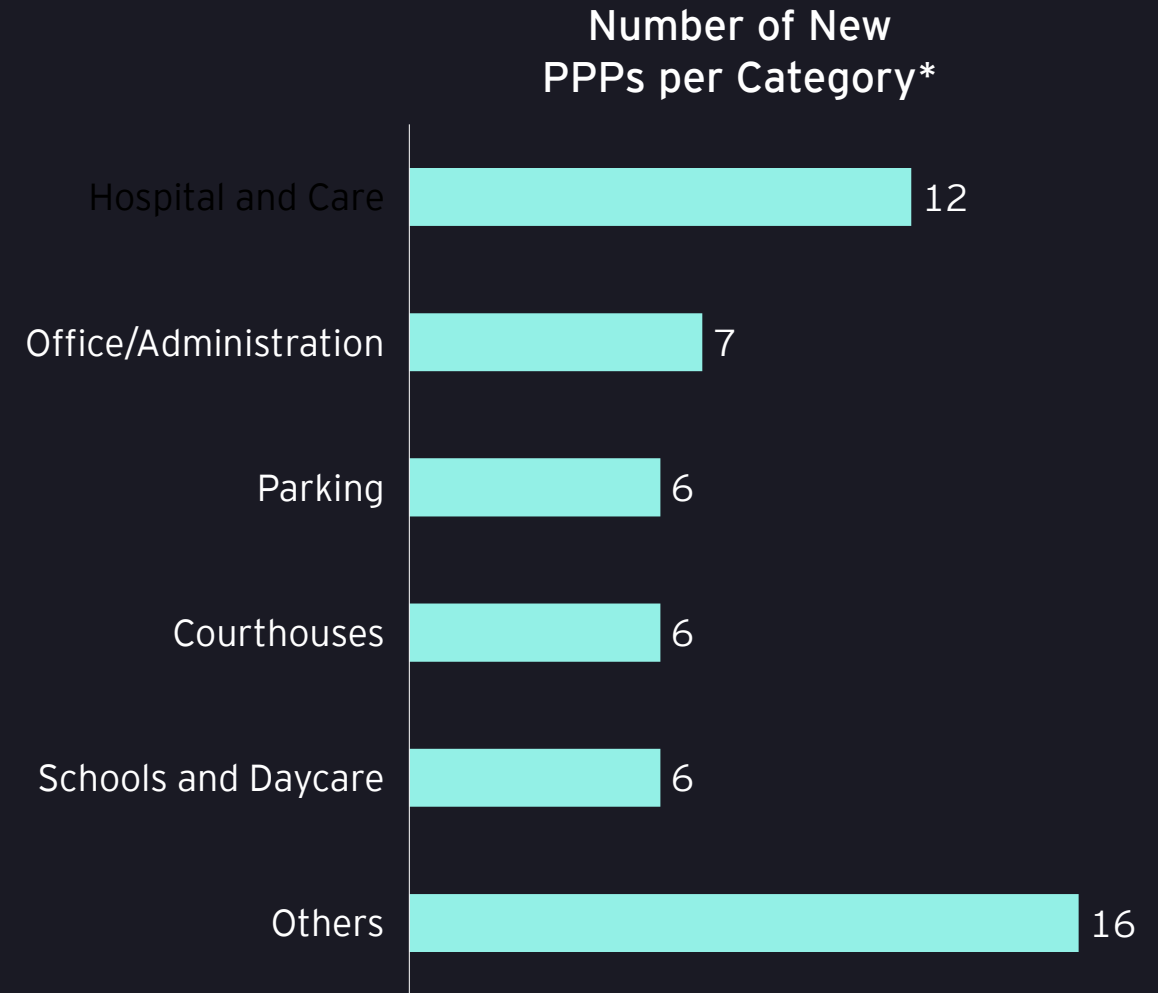
Public Private Partnerships (PPPs)

- Public entity can combine financing, design, planning, execution, operation and maintenance in a contract with a private party
- This ensures a focus on the total economy between construction and operation
- Risk transfer to private party (where/if efficient)
- The private party will demand a premium to take on risk
- Key risks to allocate include:
 - Construction risks
 - Volume/market risks
 - Flexibility/change risks
 - Financial risks



PPPs in Denmark Historically - Keeping it Simple

- PPPs in Denmark has grown substantially since the beginning of 2000's
- Evolved from being centered around small projects within limited areas of application to now cover larger projects with broader application
 - *53 Danish PPPs since 2004, most of which have been smaller projects at DKK <500m contract value, but with some approaching DKK 3bn*
 - *Often availability-based and fixed exit value as part of the initial tender ("Right & Obligation")*
- Public-Private Cooperations (PPC)
 - *Aimed at the construction phase, and O&M phases with shorter O&M contracts (typically 5-15 years)*
 - *Comprehensive procurement process, where construction, operational & maintenance phases are tied together in contracts with a private partner*
- Compared to our Scandinavian peers:
 - *Larger road and bridge infrastructure projects in Finland and Norway*
 - *Karolinska Hospital in Sweden*



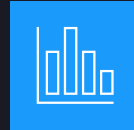
*<https://www.kfst.dk/udbud/offentlig-privat-samarbejde/offentlig-private-partnerskaber-opp/opp-oversigt/>.

Main features of the Danish PPP-Light model



Payment Mechanism

- Public pays private partner for operation and maintenance upon availability, regardless of usage
- Availability payments incentivize quick completion
- Maintenance requirements ensure quality construction, reducing future costs



Availability

- Payment mechanism includes fixed base payment, inflation-regulated service and maintenance payments, and utility payments
- Contract features performance-based payments: lower performance results in reduced payments
- Enhances transparency and clarifies worst-case scenarios for lenders



Predetermined Exit Scenario

- PPP contract includes a specified exit scenario
- Either party may have the right to buy back the asset at a fixed price, depending on the contract
- Clear exit strategy enhances contract transparency and improves loan approval chances

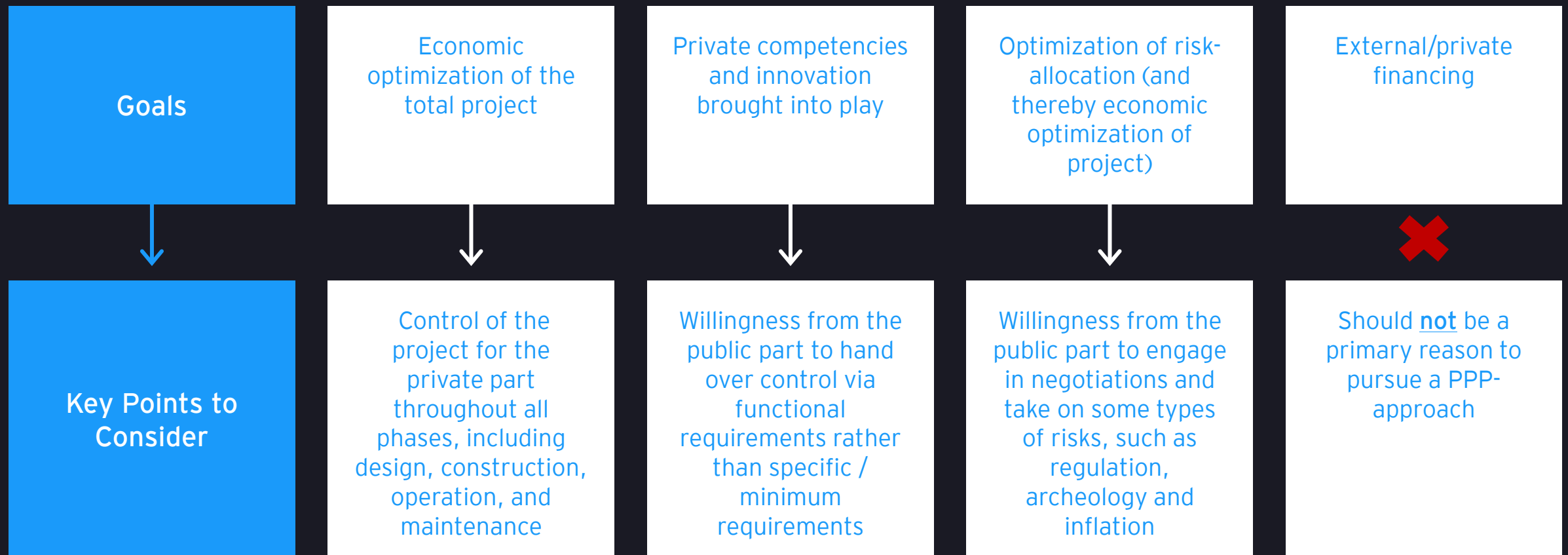


Manageable risk for private part

- Private part's risk is manageable, influenced only by controllable factors like availability
- Payment mechanism, known exit scenario, and manageable risk lower overall risk, attracting institutional investors
- Transparency, predictability, and low risk facilitate easier and cheaper financing

PPP Goals and Points to Consider

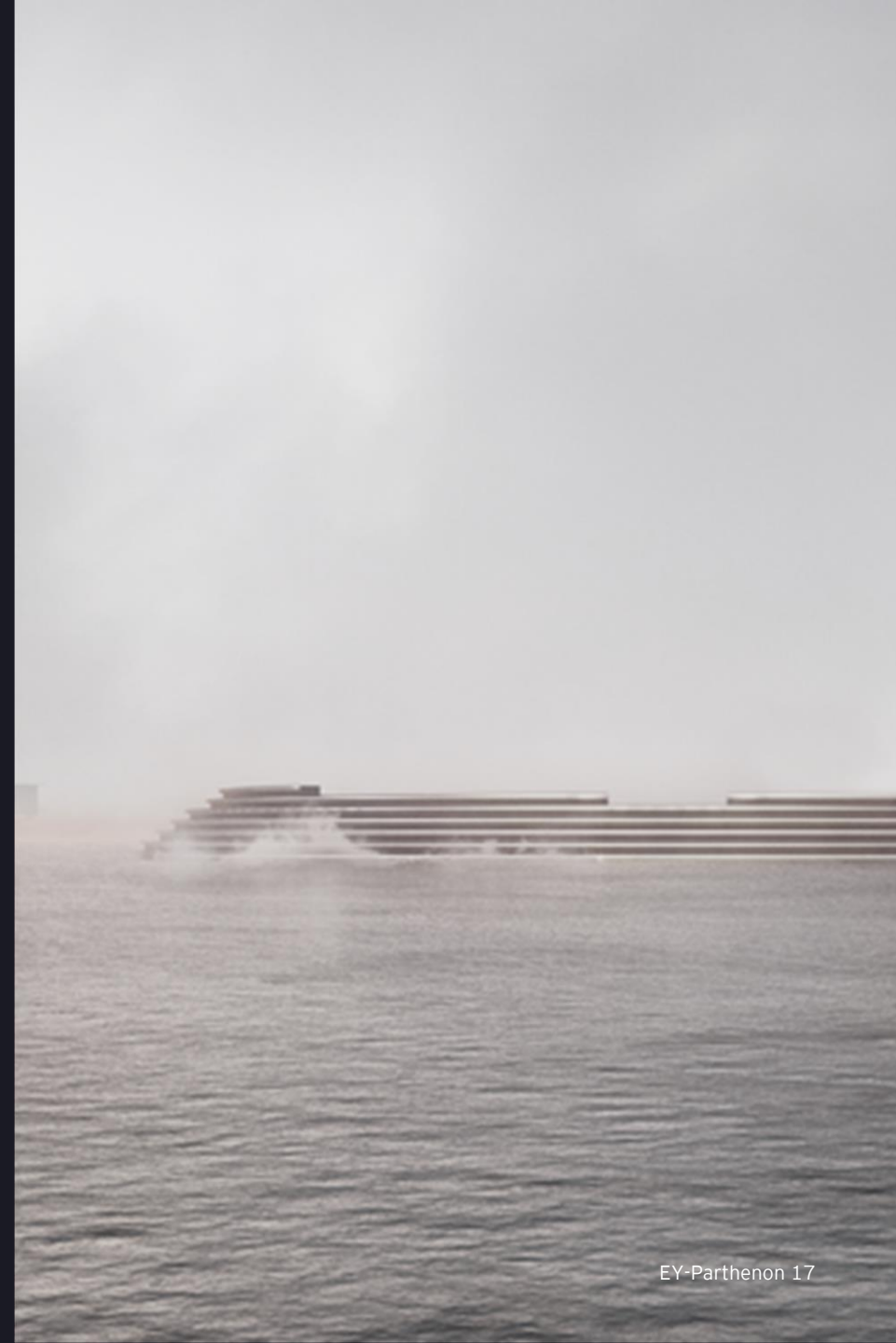
- A state may have several goals for choosing a PPP approach, but it's important to understand the true motivations behind them
- Certain key points should be considered based on the goals



Our Recent Work With PPPs

- Energy Island

- EY served as the financial advisor to the Danish Energy Agency on the tender for the Energy Island in the North Sea
- The project concerned the tender for the construction and subsequent PPP for one of the world's first energy islands
- We advised the government in several areas, such as
 - *Financial modelling*
 - *Project economics*
 - *Investor analyses and outreach*
 - *Risk allocation*
 - *Project management*
 - *Financial structuring*



Our Recent Work With PPPs

- The Danish Defense

- We advised on the Danish Ministry of Defense Estate Agency's PPP pilot project(s) for scaling the housing stock of the Danish military to accommodate its ambitious growth plans
- This represents a new area of application for the Danish PPP model and a new way to tender for the MDEA
- We are now serving as financial advisors assisting the MDEA with the potential tender which incl. preparing the tender model, defining the payment mechanism and providing advice on evaluation and risk allocation
- The project is large-scale, yet retains distinct features of the PPP light approach:
 - *10+ locations in Denmark*
 - *DKK 2-5bn CAPEX*
 - *Availability-based payment model based on 15-20 years of operations and a fixed exit value*



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