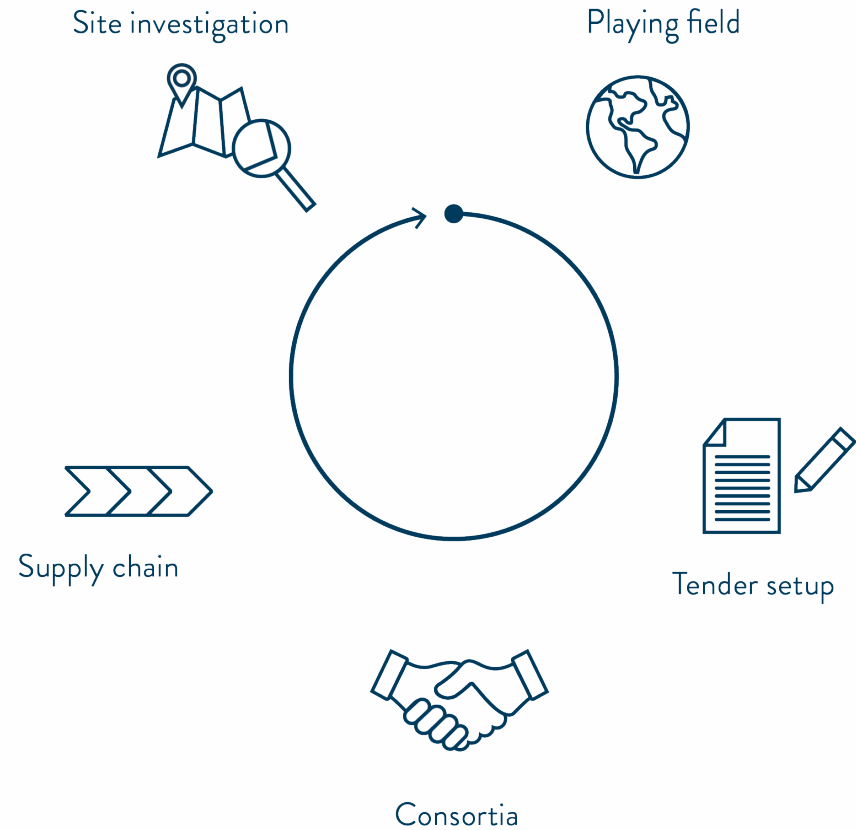




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Tendering and consortia

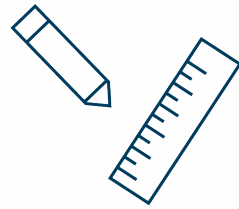




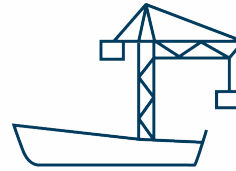
Offshore wind farm life cycle



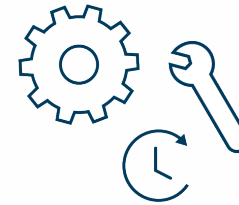
Initiation



Procurement and design



Construction



Operation and maintenance

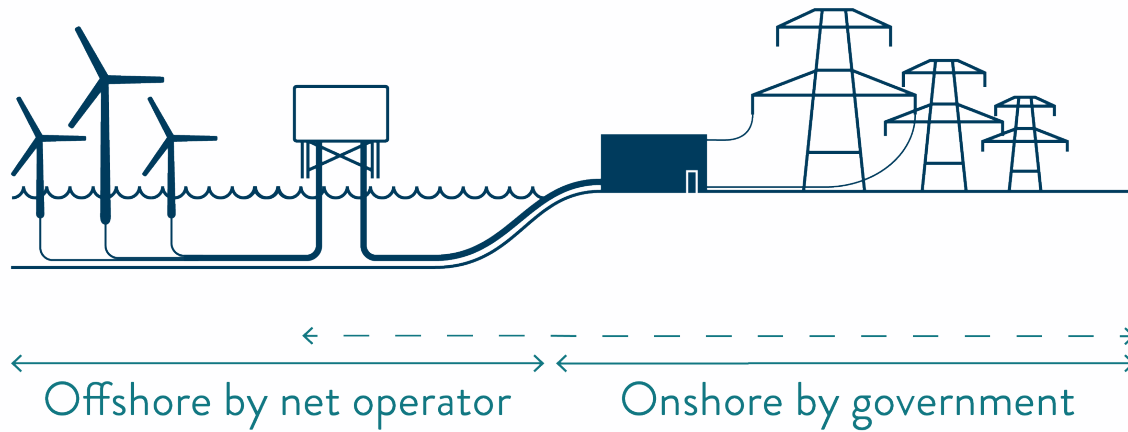


Available data





Available facilities



Grid connection

Provided by grid operator

Port facilities

Provided by port



What is a tender?

“A tender is a formal, structured invitation to suppliers to submit a bid to supply products or services”





Tender goals



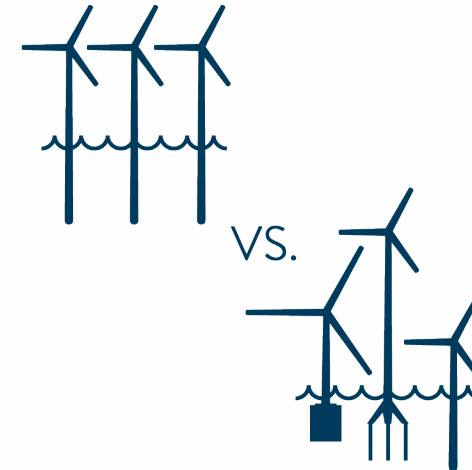
Innovation



Price



Quality



Technological
diversification



Tender site selection



Centralized: government selects site



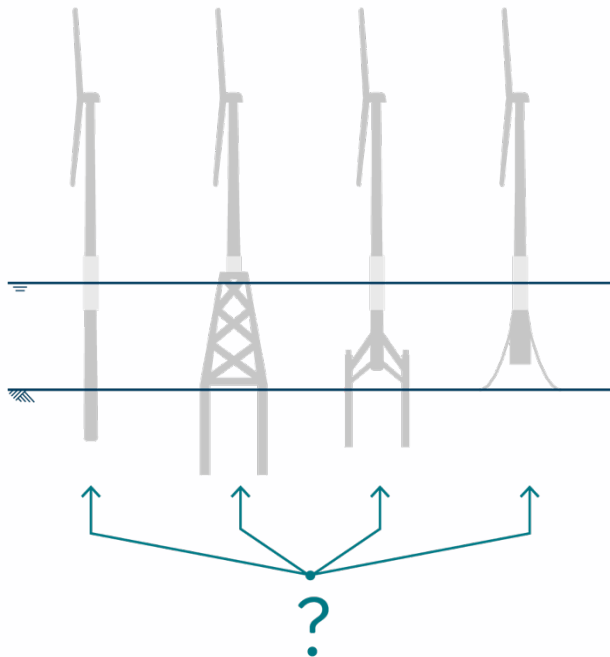
Decentralized: developers propose sites



Tender technological focus

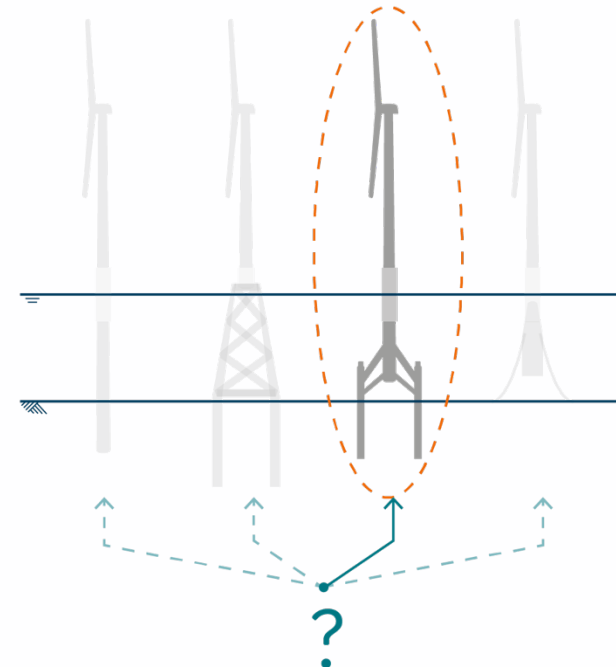
Technology neutral

To achieve lowest cost



Technology specific

To achieve innovation and technological diversification

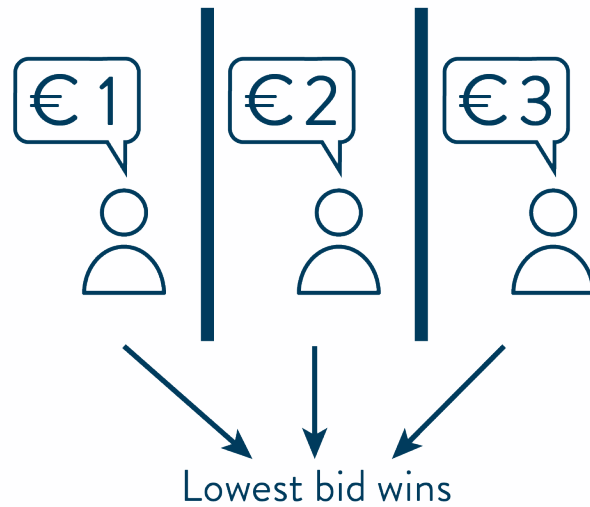




Tender price finding mechanism

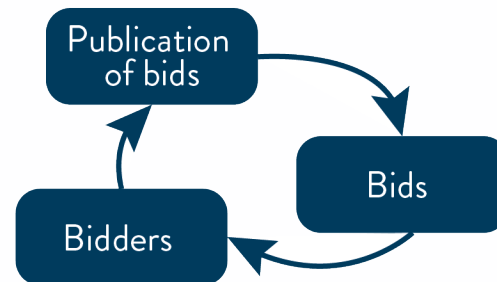
Sealed bid

No exchange of bidding price information



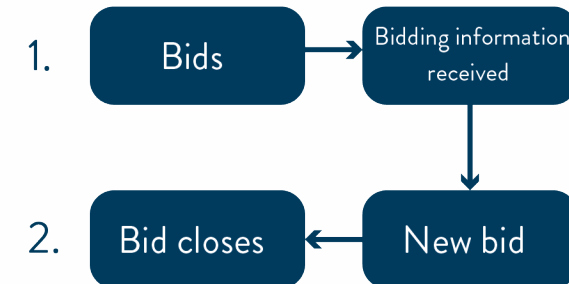
Iterative

Bidders can adapt to other bids



Hybrid

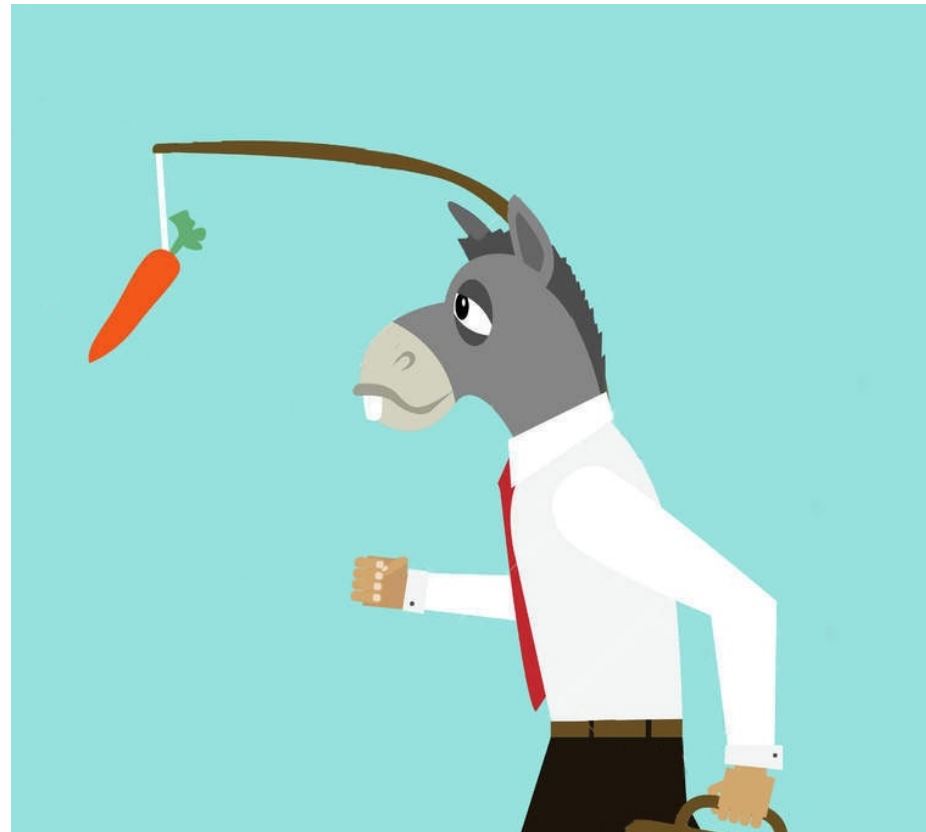
Two stages: open and sealed





Subsidy systems

- Feed-in tariff (SDE+ in NL)
- Contract for Difference





Who places the bid?

- Very high CAPEX needed
- Wide range of expertise needed: from engineering to finance



Development cost Gemini wind farm: €2.8 billion



Consortia!



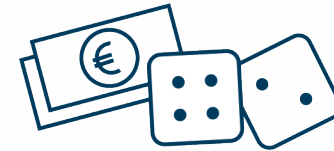
Sharing knowledge,
skills and experience



Sharing equipment and
geographic location



Distribution
development
costs



Risk can be spread



Disadvantages consortia



Effort required to
establish collaboration



More management
needed



More legal issues
involved



Risk of other
partner failing



Important players

- Investors (often in cooperations)
- Energy companies
- Manufacturing companies
- Installation contractors



Eneco Groep



Diamond Generating Corporation



Partners Group

REALIZING POTENTIAL IN PRIVATE MARKETS

Current shareholders Borselle III & IV



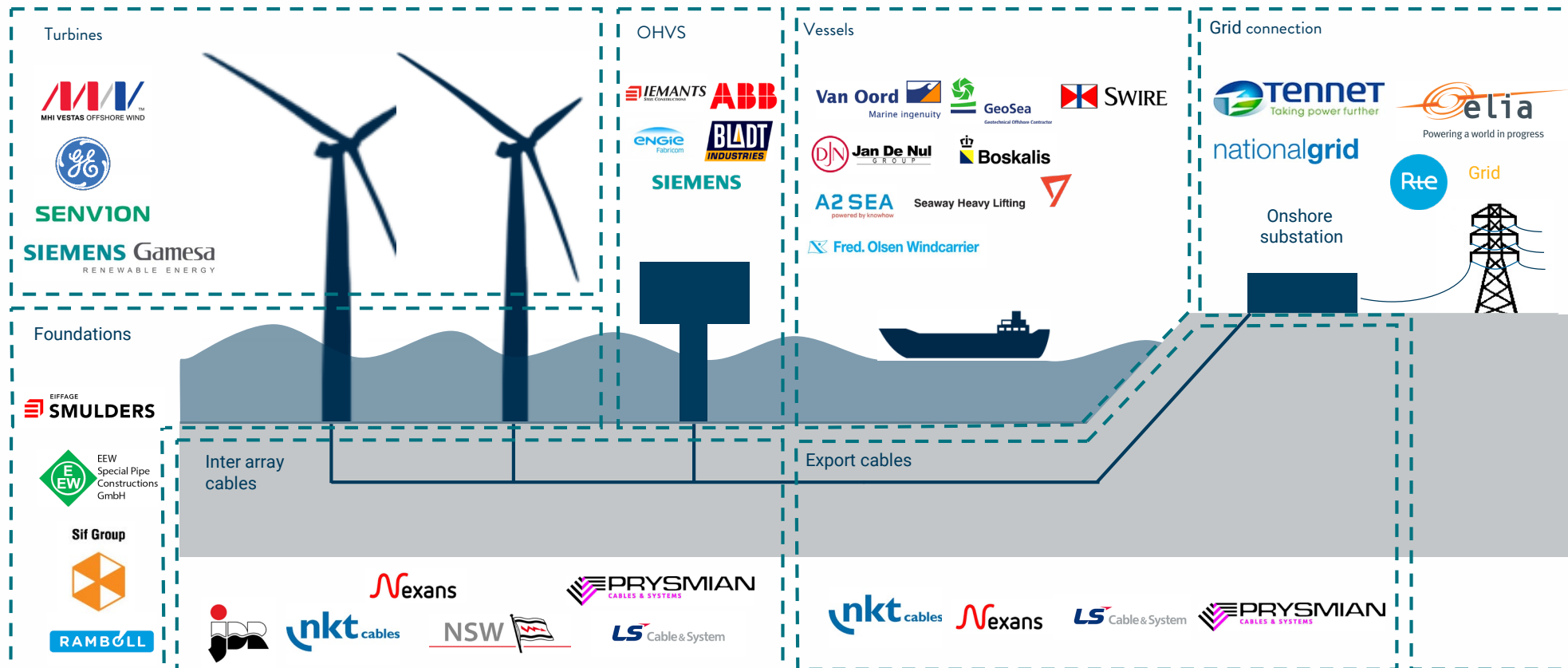
Finding partners

- Type of partners
 - Project developers
 - Utilities (electricity companies)
 - Fossil energy companies (oil companies)
 - Power off-takers ((industrial) players with large electricity consumption and sustainability goals)
 - EPC contractors (marine contractors)
 - Wind turbine manufacturers
 - Financial investors
 - Pension funds
 - Infrastructure funds
 - Banks
 - Private equity
 - Vendor finance
- More...



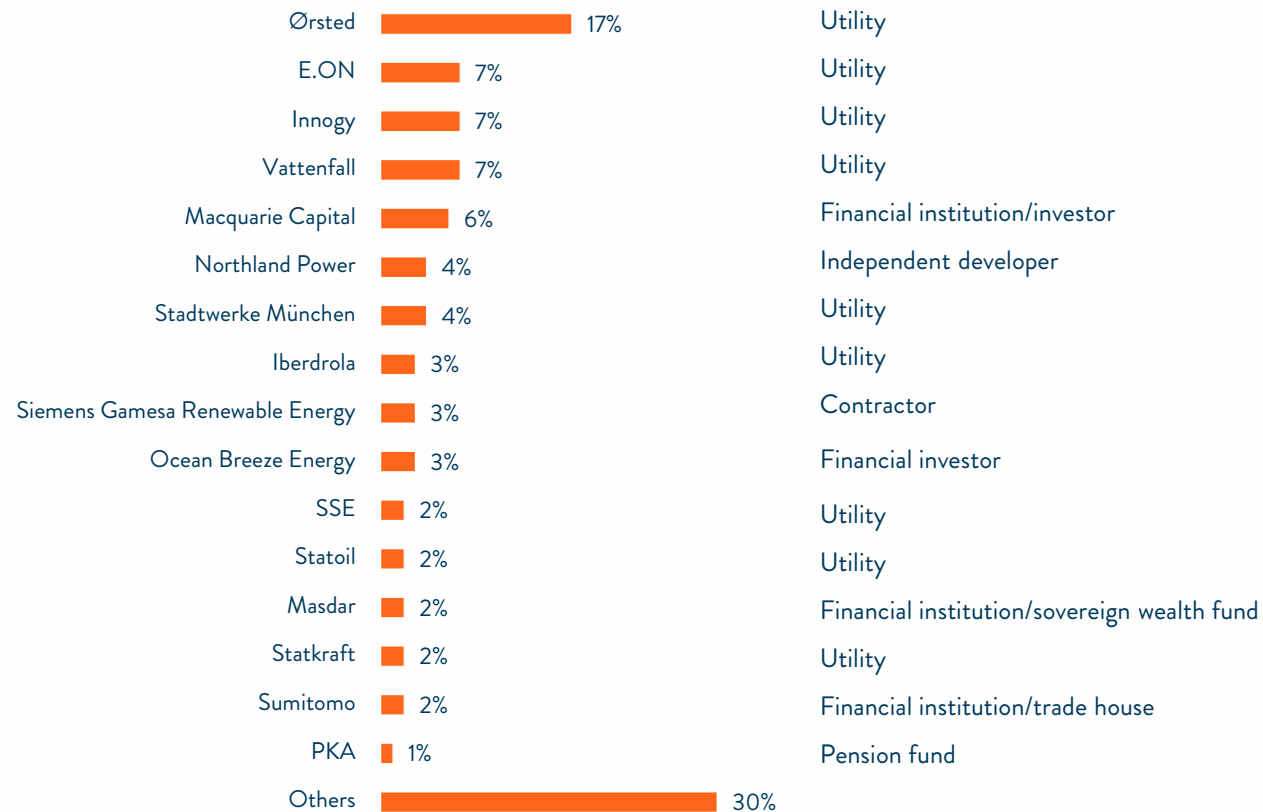


Typical stakeholders per package





Owners' share of installed capacity



Ownership of installed capacity is dominated by utilities, though ownership is more diversified in earlier phases of project development (with more room for independent developers)

Source:
WindEurope,
February 2018



Supply chain





Supply chain: companies



	Turbine	Blades	Foundation	Cables	Substation	Services
Knowledge infrastructure						
Site investigation and consent						
Development & financing						
Design & manufacturing						
Transport & Installation						
Operations & maintenance						
Decommissioning						
Infrastructure						



Supply chain: consortia



NSW/OWEZ

Nuon, Shell



utility, developer

Prins. Amalia-windpark

Eneco, Econcern



utility, developer

Gemini

Van Oord, HVC,
Siemens Financial
Services



developer, marine
contractor, utility,
WTG supplier, energy
company

Blauwwind

Eneco, Shell, Van
Oord, MHI Vestas,
Diamond Generating
Europe, (+backing of
EIB)



Diamond Generating Corporation

utility, oil company,
marine contractor,
WTG supplier,
investor

Norther (BE)

Eneco, Diamond
Generating Europe,
Elicio NV, (+backing of
EIB and Danish EKF)



Diamond Generating Corporation



utility, investor

Beatrice Offshore Windfarm Ltd

SSE, Copenhagen
Infrastructure Partners,
Red Rock Power
Limited (Chinese state
development and
investment company),
(+backing of EIB and
Danish EKF)



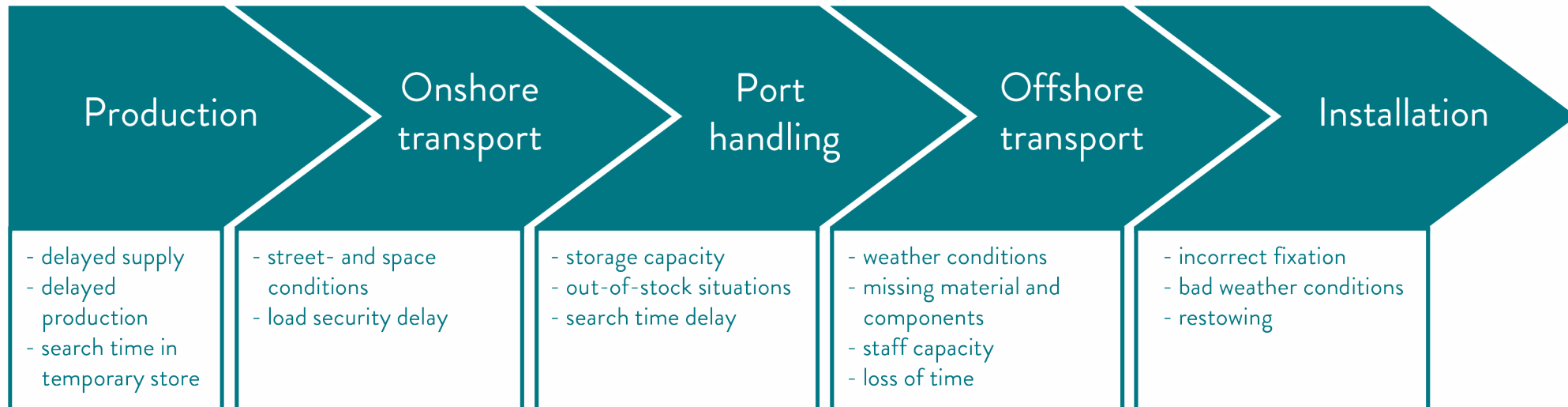
COPENHAGEN INFRASTRUCTURE PARTNERS



utility, investor



Supply chain delays





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