

Workshop on offshore wind development in Japan, Taiwan and Vietnam: Danish perspectives on the challenges of port development

Date : June 26, 2023 15:00-16:30 (JST)

Host : Institute for Future Initiatives (IFI), The University of Tokyo

Venue : Online

<Highlights of keynote presentation>

- Esbjerg is an expanding port, which evolved from fishing services to include oil and gas explorations, and offshore wind from the 2000s
- A quarter of all jobs in the municipality are energy-related
- A wide area with little standing infrastructure is used for offshore wind services
 - With the exception of preassembly/project installation cranes
- Market reach covers Northern Europe
- Role of ports can be classified into four types based on smaller/larger investment size and shorter/longer project duration.
 - Services that require larger investment such as installation or production ports are difficult to invest in
 - O&M, decommissioning, energy storage, and vessel services are examples of relatively low-investment services
 - There will be strategic differentiation between ports
- Ports face challenges for ongoing business development in offshore wind due to:
 - Immature industry and technologies; continued upscaling of turbines
 - Tender/project-based market; unstable project pipeline
 - Difficulty of mixing with other port activities; requires large open space
 - Green energy being a cost reduction-based industry; requires scalability
- Port operations require much data, knowhow, and cost
 - E.g. to secure the integrity of the quay side where jack-up operations are performed
- Vessel service, training and education are also important services, esp. due to immaturity of industry

<Highlights of discussion>

Q: What strategies can ports take against the immaturity and instability of the industry?

- Even in Europe, the immaturity and instability of the industry affects ports and their investment/operation decisions - studies say it takes 25 to 40 years for an industry to mature.
- Suggested strategies against immaturity and instability:

- Take risk: Realize that offshore wind investments are long-term industrial/societal development projects, which do not have short-term returns - and convince investors of this
- Collaborate with other ports: No single port can handle an entire project on its own, so the focus should be long-term and large-scale optimization rather than short-term competition (typically, 3-4 ports will be involved)
- Flexibility: The port should be built so it does not depend entirely on offshore wind projects

Q: How are Danish ports governed, and how did this flexible scheme evolve?

- Danish ports are owned by the municipality, but finances and related decision-making is independent (it is not funded or subsidized)
- Initial port investment decisions were undertaken by the port (the municipality's role is limited to final approval)
- This arrangement started 20 years ago.
 - Ports used to be state-owned, but increasing pressure from municipalities for a more hands-on approach, with less government intervention led to such an arrangement.
 - Port Esbjerg became one of the first few ports to be sold to the municipality.
 - We still have close dialogue with the state, but we have more flexibility.

Q: How should the large port investments be burdened?

- In Japan or Taiwan, these investments basically fall on the developer, and they are struggling with the burden.
- While it is a difficult issue with no single, clear answer, the Danish experience reveals that:
 - This burden is unavoidable, and it will have to be paid until we achieve a balanced, mature market (which may take 10-15 years even in Denmark).
 - One strategy is to try to de-risk the project, by assuming the long-term risks of cranes, pre-assembly areas, etc.
 - It is important to keep the ultimate goal in mind, namely to lower renewable prices. This is what everybody wants.
 - Try to optimize on a holistic level. Look for solutions that benefit the entire value chain, the entire industry. Engage in dialogue with related actors.
 - The first investments were very “philanthropic” (in 2001), when nobody knew it would grow into such a big business, gradually growing over the course of 20 years.
 - Esbjerg has a 40-year history of business in handling large and heavy onshore wind components - it did not go directly from fishing to offshore wind.

Q: What does a “holistic approach” to investments entail?

- It is important that as a port we view offshore wind “not just as a renewable development issue”. It is industry, jobs, education, and much more.
- Investing to create an ecosystem, to incubate innovation.

- Governments should have a broader perspective, not just focusing on developing renewable power sources.
 - This holistic view helps with the dialogue with society, e.g. studying new fishing methods with local fishermen.

<Supplementary Information>

- Interview of CCO Jesper Bank of Port Esbjerg @WindEurope
<https://windeurope.org/windflix/videos/world-of-wind-interview-with-jesper-bank-port-of-esbjerg/>
 - Official publications of Port Esbjerg
<https://portesbjerg.dk/en/publications>
 - Online brochure of Port Esbjerg
<https://www.sebrochure.dk/port-esbjerg/WebView/>
 - LinkedIn accounts
 - <https://www.linkedin.com/company/esbjerg-havn/>
 - <https://www.linkedin.com/in/jesperbank/>
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Post-WS Analysis (1): Important factors identified from the Danish experiences

Analysis of the discussion reveals that key challenges of port development as seen from the Danish port perspective include the immaturity of industry, unstable project pipeline, slow or rigid decision-making, and the burden of investment for long-term industrial development. Vis-a-vis such challenges, the following strategies/factors were raised:

Vs. immaturity of industry and unstable project pipeline

- Accepting and assuming the risk of long-term industrial development
- Collaborating with other ports
- Maintaining a flexible port area that can be used for other purposes

Vs. slow/rigid decision-making

- Flexibility of the governance scheme; hands-on approach to decision-making, a balanced relationship with (cooperation and dialogue but independency from) local/national government

Vs. heavy burden of port investment

- Keeping the ultimate goal in mind, namely lower renewable electricity prices
- Long-term, industry-wide optimization (rather than short-term wins)
- A "Holistic approach": Framing offshore wind port development as a whole-of-society issue, with a perspective broader than just renewable power development (including industry, society, education, local economy,...)

Post-WS Analysis (2): Questions for Asian ports

Based on the results of analysis (1), the following questions were identified for Asian ports:

- Q: What strategies should Asian ports take against the immaturity and instability of the industry?
 - ◆ Who is currently taking the risks or considering the decisions of port investment?
 - ◆ Is that entity well informed and well placed to make those decisions?
 - ◆ Who would be affected by those decisions (that does not have enough say in the decision making process)?
 - ◆ How can ports collaborate against the immaturity/instability of the offshore wind industry?
 - ◆ What other port services or related services can coexist with offshore wind services?
- Q: What characteristics should the governance scheme of port development in Japan/Taiwan/Vietnam have?
 - ◆ Would a Danish scheme work for Japanese/Taiwanese/Vietnamese ports?
 - ◆ What role should the government have?
 - ◆ What kind of "independency" from the national government is necessary, and how can it be achieved?
- Q: How should large port investments be burdened?
 - ◆ Presently, what is the goal of the key actors: local/national government, developers, port authorities, manufacturers?
 - ◆ Are they long-term, industry-wide goals? Are there missing perspectives?
 - ◆ How/who would offshore wind development affect?
 - ◆ What kind of dialogue, collaboration, or scheme is necessary among key actors?
- Q: What would be a "holistic approach" towards development for Kitakyushu/Taichung/Vung Tau? What societal implications would such an approach have?