

Invitation to market dialogue

Regarding the procurement framework
for the commercial co-ownership of the
Energy Island in the North Sea

Discussion Paper



March 2021

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1 Introduction

The Danish Energy Agency (DEA) invites potential tenderers and relevant market operators to participate in the virtual market dialogue on the coming tender regarding the co-ownership of the Energy Island in the North Sea.

The DEA is tendering out shared ownership of the Energy Island in the North Sea and plans to launch the tendering process in 2022 and announce a winner in 2023.

This market dialogue is the first market dialogue of two market dialogues. After the first market dialogue, the procurement framework will be defined based on relevant feedback from potential tenderers and relevant market operators. The final procurement framework will be subject to political approval. The second dialogue is expected in Q4 2021 specifying in more detail the overall nature and scope of the shared ownership, cf. also section 4.

The first market dialogue will be an opportunity for the market and potential tenderers to discuss the main elements of the tender with the DEA and to provide input and recommendations to the themes in this paper. For each section and theme, there is a set of questions. This paper is thus meant as a discussion paper that introduces the Energy Island Project in terms of the expected time frame, possible business models, construction and technical requirements as well as the possibilities for innovation and commercialisation.

The discussion paper is based on initial investigations and planning assumptions. Whilst the DEA is confident in describing the principal outline of the coming project and processes, it must be recognised that the project remains a work in progress and that changes may occur.

The complete tender conditions will be set out in the tender material, which the DEA expects to publish in Q1 2022 along with the publication of a contract notice in the Supplement to the Official Journal of the EU.

For more information on the DEA tender, please visit our website [Energy island in the North Sea | Energistyrelsen \(ens.dk\)](#), where you can also sign up for the newsletter.

We look forward to receiving your feedback.

Danish Energy Agency

2 About the Energy Island co-ownership tender

With the Climate Agreement for Energy and Industry of 22 June 2020¹, a broad majority of the Danish Parliament decided to initiate the realisation of an artificial island in the North Sea (in the following the “Energy Island”). The Energy Island will be the beginning of a new era for future development of Danish offshore wind.

Where the designation “Energy Island Project” is used, it refers to the project as a whole, including the artificial island, the power transmission network, the offshore wind farms and other potential activities.

The Energy Island located in the North Sea must have an area large enough to handle an initial capacity of 3 GW offshore wind power. As the construction of new international connections to neighbouring countries develop, the size of the island may be expanded in order to increase the scaled offshore wind power. In the future, the island should be able to receive and transmit up to 10 GW offshore wind power.

The parties behind the Climate Agreement have in February 2021² decided that the Energy Island should be an artificial island that will connect and distribute power from the surrounding offshore wind farms. Some of the activities on the Energy Island are expected to be categorised as critical infrastructure, cf. section 9 below, and it has therefore been decided that the Danish State is to have a majority ownership of the Energy Island. It has also been recognised that it is important to enable shared ownership between the Danish State and a commercial co-owner, cf. sections 5 and 6 below.

Site

The parties behind the Climate Agreement have designated an area for the location of the Energy Island and offshore wind farms in the North Sea, and they have agreed to begin the preliminary investigations for the Energy Island and offshore wind farms. The Energy Island will be located west of Thorsminde in the western part of Jutland, cf. section 7.

The Danish transmission system operator (TSO), Energinet³ has thus initiated the preliminary investigations of the area in the North Sea. The area is reserved for the establishment of the Energy Island and offshore wind farms. The preliminary investigations are the first steps towards the realisation of the Energy Island and include geophysical (e.g. sonar studies where the seabed is screened) and geotechnical studies (e.g. drillings into the seabed) as well as environmental studies (e.g. fish, birds and benthic animals).

¹ [https://en.kefm.dk/Media/C/B/faktaark-klimaaftale%20\(English%20august%2014\).pdf](https://en.kefm.dk/Media/C/B/faktaark-klimaaftale%20(English%20august%2014).pdf)

² [Aftaletekst - Energjøer - Ejerskab og konstruktion af energjøer mv.pdf \(kefm.dk\)](#) – only available in Danish

³ [About Energinet | Energinet](#)

3 Participation in the dialogue

The DEA will invite up to a maximum of 10 commercial operators to participate in virtual dialogue meetings via Skype. A group of several commercial operators (e.g. a consortium) that wish to participate jointly in the dialogue meeting will be considered one commercial operator in this context.

The selection of participants for the virtual dialogue meeting will be based on the aim to secure a broad composition of relevant market operators and potential tenderers, preferably consisting of potential commercial co-owners of the Energy Island, relevant financial investors and contractors and/or project developers.

The DEA reserves the right to invite less participants to the virtual dialogue if the DEA assesses that a broad composition of relevant market operators can be obtained with less than 10 participants.

In addition to the virtual dialogue meetings, the DEA encourages all relevant market operators and potential tenderers to submit written recommendations and answers to the questions raised by the DEA in this “Discussion Paper”. Please be precise and to the point in your written answers. A summary of your main recommendations should be included in your reply.

Requests for participation in a meeting and written recommendations should be submitted by e-mail to Signe Marie Enghave at sgme@ens.dk. In the request for participation in the market dialogue, please provide a brief introduction to your business(es) and state why you are interested in this project.

Indicative timetable for the market dialogue

15 March 2021	This “Discussion Paper” will be available on Energy island in the North Sea Energistyrelsen (ens.dk)
16 March 2021 at 12:00 noon	Deadline for requests for participation in a virtual dialogue meeting with the Danish Energy Agency
18 March 2021	The Danish Energy Agency will submit invitations to dialogue meetings to the selected operators
22-26 March 2021	Virtual dialogue meetings with invited participants.
6 April 2021	Deadline for submission of written answers and recommendations.

If potential tenderers request confidentiality of certain information for competition reasons, the DEA will be able to meet such requests, provided that they do not infringe the obligations of the Freedom of Information Act (Access to Public Administration Files Act), the Danish Public Administration Act and the Environmental Information Act and the Public Procurement rules, in particular the principles of equal treatment

and transparency. Information received will under no circumstances be used in any way to provide competitive advantages to a single market player.

4 Timetables for the Energy Island

The preliminary timetables for the Energy Island in the North Sea, including the tender procedure and the expected deadlines after the contract regarding co-ownership is awarded, are outlined in the following. Please note that all aspects of the timetables may be amended to accommodate possible changes arising from the market dialogue, the political process or unforeseen circumstances.

Timetable for the tender process for the shared ownership

Subject to political approval, a contract notice describing the terms and conditions for the call for tenders in respect of the contract regarding shared ownership is expected to be published in TED by the end of February 2022. Together with the contract notice, the tender material and the pre-qualification material will be published. This will officially launch the tender process. It is expected that the tender process will be a negotiated procedure in accordance with the Danish Public Procurement Act (in Danish: Udbudsloven)⁴. The tender material is expected to include the conditions for co-ownership (draft co-owner agreement and other pertinent documents) and the request for a project proposal for the construction of the Energy Island. However, this could be changed in the further process analysing and identifying the optimal procurement framework.

The application period for prequalification is expected to last about 30 days. Hence, the deadline for submission of prequalification applications is expected to be by the end of Q1 2022.

When publishing the contract notice and launching the prequalification period end February 2022, the DEA will provide information on all relevant data and reports available at the time. It is yet uncertain whether any geophysical data will be available end February 2022. Since most of the data and environmental assessments will be published after the prequalification is concluded, the DEA will also provide a list of expected conditions concerning all elements of site investigations and environmental assessments at the time of publishing the contract notice and launching the prequalification (e.g. results of completed geotechnical and geophysical surveys, as well as the supplementary environmental assessments). Before the tenderers are to prepare their final tenders, data from geophysical surveys and approximately 10 months of MetOcean data are expected to be available. It is yet uncertain whether geotechnical data will be available when the final tender material is published.

⁴ Act no. 1564 of 15 December 2015

The result of the prequalification process is expected to be announced by the end of May 2022. All prequalified tenderers will then have approximately 70 days to prepare a preliminary bid, which will form the basis for the following negotiation process in Q3 – Q4 2022.

Moreover, it is important to stress that the tender material may be modified to some degree as a result of the negotiation process. On the basis of the results of the negotiation process, the final tender material will be published in December 2022. The tenderers will be given no less than 45 days to prepare and submit final tenders. The expected deadline for final tenders is end of January 2023.

The timeline for the tender procedure for the co-ownership contract is illustrated below showing that the commercial co-owner winning the contract is expected to be announced by the end of March 2023, see **Appendix 1** in section 10 below.

Indicative timetable for the Energy Island Project, including the construction phase

The current timetable for the project after the identification of the commercial co-owner, including the construction of the Energy Island, is set out in **Appendix 2** in section 10 below:

Following the award of the contract regarding co-ownership, an environmental impact assessment (“EIA”) will have to be carried out of the project expected to be proposed by the winning commercial co-owner. This is expected to take place in the period Q2 2023 – Q2 2025.

In the timetable for the construction phase, it is envisaged that the contractors carrying out the construction of the island will be chosen during the EIA process in a tender procedure. This tender procedure is scheduled to take approximately 12 months, with the identification of the winning tender in Q3 2024.

The EIA may also include necessary modifications to the project proposal identified during the process. Initiation of the construction phase will therefore need to await the final EIA approval, expected to be granted in Q2 2025.

The construction phase for the Energy Island is estimated to have a total duration of three years from early 2026 to end 2028⁵.

⁵The three years are based on the construction of an artificial island using caissons. The construction of the Energy Island may also be constructed in another way.

During the construction phase, Energinet will carry out other necessary tender procedures in order to prepare for the construction of the transmission network and other critical infrastructure on the island. Works and installations on the island for which Energinet is responsible are expected to take place from early 2029 to end 2031 in order for tests to be carried out in Q1-Q2 2032.

Also, the tender procedure(s) for the 3 GW offshore wind farms will be initiated and carried out during the construction phase for the island, enabling connection of wind farms to the island, beginning in 2032.

Questions

4.1

The proposed timetable for the tender of the co-ownership provides 30 days for application for prequalification, approximately 70 days for submission of preliminary tenders, approximately two months for the negotiation process and approximately 45 days for submission of final tenders (including Christmas holidays). Are these time slots sufficient, also when taking into consideration that the commercial co-owner may be required to include a project proposal in its preliminary and in its final tender?

4.2

Is the timetable for the period after the identification of the commercial co-owner, including the construction of the Energy Island, a realistic timeframe?

What would the consequences be for this timetable if the identification of the commercial co-owner is delayed for a few months?

4.3

Does the timetable for the establishment of the transmission network and the 3 GW offshore wind farms give rise to any comments?

4.4

Do you see any possibilities for optimising the process, enabling an earlier establishment of the Energy Island and/or enabling an earlier commencement of activities on the island/transmission of first power to the grid, given the technical and legal framework for the project, including public procurement rules, and without jeopardising the economic feasibility of the Energy Island?

4.5

Would you initiate production of construction elements for the island (e.g. caissons) before the EIA has been completed? And are you willing to bear the risks of initiating production of construction elements for the island (e.g. caissons) before the EIA has been completed?

5 Business case

The political starting point for the *Danish Climate Agreement for Energy and Industry* of 22 June 2020 is that the Energy Island Project must be economically profitable. In addition, it is a political priority that the Energy Island must hold the capabilities and potential to be innovative in order to facilitate the creation of new business opportunities.

The outcome of this market dialogue will be included in ongoing analyses of the economic and regulative framework that will define the final business model of the Energy Island.

Basis for the business case

The supplementary agreement (February 2021) to the *Danish Climate Agreement for Energy and Industry of 22 June 2020* specifies that:

“The political parties agree that the establishment of Energy Island North Sea is a task of general public interest that is best solved by activating relevant expertise across the Danish State and the market through shared ownership between the Danish State and one or more commercial operators. The Danish State must at any time have majority ownership, whereas the commercial co-owner(s) must own 49.9 per cent of the island, unless the market dialogue shows that a lower commercial co-ownership interest is more expedient.”

Within the framework set out by the political agreement, it is agreed to structure the project in a way that includes private participation. The participation must accommodate flexibility and support innovation, promotion of export opportunities and commercialisation in relation to operations and further development of the project.

Inputs from the market dialogue are important in defining the structure of the co-ownership, including how the private participation sees the business case, and how risks and returns can be shared in an efficient way that benefits both parties.

Revenues and costs

Revenues

The artificial island will constitute one part of the Energy Island Project where the different activities (i.e. island, offshore wind farms and transmission systems) and corresponding cash flows will to a large extent be interdependent.

Revenues to the Energy Island Project will primarily⁶ originate from the offshore wind parks' sale of electricity⁷ and the transmission system operators' associated income⁸.

On this basis, the artificial island can generate revenues by offering areas on the island to the offshore wind parks and the Danish transmission system operator, Energinet which will use the sites for electrical equipment and systems.

Depending on the final configurations of the island and rationale in the business model, the island may also potentially offer other service facilities in the form of e.g. protected port and/or areas for staff accommodation.

In later stages of the project, the island may generate additional revenues from other activities on the island, e.g. power-to-X, energy storage etc. These additional activities may require modular expansions of the island, depending on the initial build-out capacity size.

An overview of the revenue streams can be seen from Figure 1 below, including revenues to the Energy Island Project:

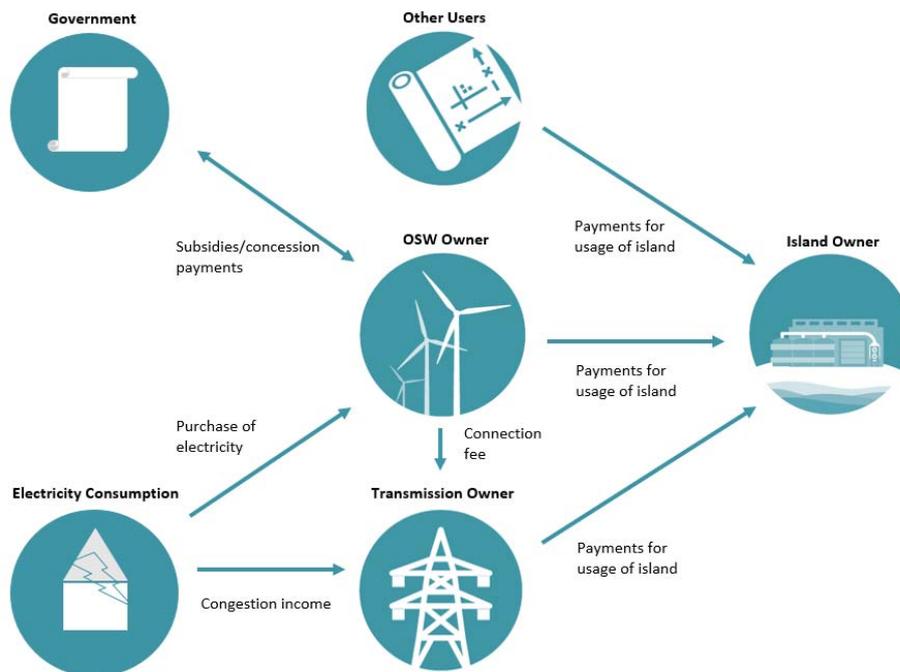


Figure 1: Overview of project stakeholders and potential cash flow

⁶ This is in the initial build-out phase. In later phases, other revenue streams may be possible.

⁷ The electricity may be sold at the price of the given price zone that the energy hub belongs to. The electricity will be transmitted to the interconnected countries and consumed in Denmark and abroad and potentially on the island.

⁸ Cross-zonal capacity allocation may generate congestion income to the transmission system operators (TSO's) that own the transmission lines.

Description:

- *The owners of the offshore wind farms ('OSW owner') produce the electricity. The electricity may be sold at the price of the given price zone that the energy island belongs to. The electricity will be transmitted to the interconnected countries and consumed ('Electricity consumption') in Denmark and abroad and potentially on the island.*
- *The owner of the transmission network (the 'Transmission owner') provides the capacity that enables electricity consumers to consume offshore wind power. If there are electricity price differences between the energy island and the electricity markets of the connected countries, the Transmission owner may obtain congestion income.*
- *The Transmission owner can potentially also generate revenue through payments of a connection fee/tariff, which the OSW owners must pay to connect their facilities to the transmission network.*
- *The island itself does not generate direct income from the electricity production. However, the Island owner will provide land to the OSW owners, Transmission owners and other potential users. For this service, the island owner can charge a fee e.g. in the form of rent payments. This fee can potentially also cover services such as use of port facilities, buildings, etc.*
- *In later phases, the Island owner may potentially be able to generate additional income from other sources in the form of renting out areas for Power-to-X, energy storage, etc.*

The revenue structure for the island is not fully decided and the following key points are currently being explored:

- Whether all users of the island should pay a pre-defined fixed rent or whether e.g. the wind farms should be subject to a usage fee depending on the throughput of electricity, and;
- Whether the level of payments should be subject to regulation and to what degree, as the artificial island is considered a monopoly.

Construction costs and OPEX

The construction of the island is expected to consist of land reclamation and infilling with sand. For more details, please refer to the cost-benefit analysis conducted by COWI and published in January 2021⁹.

The construction concept will allow modular expansion, which gives flexibility in terms of expansion and further development of the island. This allows the project to be flexible and adapt to changes in the technical equipment used which is located on the island and to new offshore wind energy related activities and technologies.

Depending on the final configurations, the outer construction elements and dried landsite of the artificial island are expected to have a technical lifespan of at least 50 years for the outer construction and reclaimed land.

The estimated construction costs and OPEX are outlined below:

⁹ https://ens.dk/sites/ens.dk/files/Vindenergi/a209704-001_cost_benefit_analyse_endelig_version.pdf

Table 1: Estimated construction cost

Million DKK	'Basis'	'Incl. service'	Full scale
Capacity	3 GW	3 GW	10GW
Hectares	12	18	46
CAPEX (construction costs)	5,600	6,900	10,900
OPEX p.a.	56	69	109

Notes: 'Basis' represents an island with capacity for the electrical equipment and systems only. 'Incl. Service' also includes a protected port and service facilities for the offshore wind farms. "Full scale" represents an island with a protected port and service facilities for the offshore wind farms. Estimates show that a size of approx. 49ha, with corresponding CAPEX of approx. 11.3 billion DKK, is necessary for the island to accommodate a PtX plant with 1GW capacity.

Source: COWI, 'Cost benefit analyse og klimaaftryk af energier i Nordsøen og Østersøen', January 2021

In addition to CAPEX and OPEX, the total project costs will include costs related to financing, planning and administration, remuneration, etc. Furthermore, building out capacity in two stages will require additional start-up costs estimated at 1.1 billion DKK.

Construction configuration

At this point, it is being considered whether it is most desirable to:

- Construct a smaller island with 3 GW capacity at a first stage followed by an expansion of the island to accommodate 10 GW at a later stage, or
- Construct the full island prepared for 10 GW from the start.

These considerations imply a trade-off examination between expected additional start-up costs from modular expansions of the island versus facing expected idle costs as a result of having unused areas of the island for a period of time.

In addition to this, the functionalities of the island are being considered. This includes whether the island should be constructed with or without a port and service facilities, and if/to what extent additional functionality is desirable.

Input from the market dialogue will be included in the analyses of these factors.

Risk allocation

The Energy Island has an inherent number of project related risks. At an overall basis, these include risks related to design, planning, construction, financing, regulation, revenues, technological uncertainty and the interdependency between operators in the project.

The participants in the market dialogue are invited to share their views on the project related risks and potential frameworks for risk allocation, risk mitigation and how this affects returns.

At this point, the risk allocation is limited to cover allocation of the generic risks. Below is a preliminary list of generic risks that will be relevant for the project:

- Design and construction risks
 - Approvals
 - Design
 - Construction
 - Delays due to procurement
- Operation and maintenance risks
 - Daily operation of island
 - Interface to users of the island
 - Change in demand over time
 - Operational costs
- Market risks
 - Price changes in financing
 - Revenue (fees e.g. rent payments)
 - Lack of interest in procurement
 - Other services
- Legal and political risks
 - Legal changes
 - Delays in approval processes
 - Delays due to public complaints
 - Political changes

Funding and capital structure

The Danish State must always be the majority owner of the Energy Island (and majority owner of the activities that may be defined as critical infrastructure. For the power transmission system constructed, owned and operated solely by the Danish State through Energinet, the criteria will be fulfilled by the Danish State's ownership of Energinet).

Within this framework, the DEA is open to get the participants' input on financing and capital structure, including how financing and capital structure can ensure balancing the demand for innovation.

Questions

Revenues and costs

5.1

What is your perspective on a potential revenue framework of the Energy Island?

5.2

Are any of the revenue streams more important than others?

5.3

What potential for alternative income streams could benefit the business case? Would it be beneficial to the business case to keep non-core/other service revenue streams out of the primary ownership structure, and if so why?

5.4

What are your main concerns/uncertainties, and what type of revenue structure would constitute a sound business model and lower return requirements/funding costs?

5.5

If any, what kind of potential guarantees do you foresee are needed in order to secure your business case?

5.6

What is your perspective on phases and expansion, including both the planning, design, construction and commissioning phase?

5.7

In your view, under which conditions do you find it commercially viable to construct an island with 10GW capacity, if only 3GW of offshore wind is connected in a first phase? Please substantiate your answer.

5.8

In case the island is built with 10GW capacity in a first phase and the full capacity is never fully utilised, how should potential idle costs be re-covered?

5.9

To what extent will the interim period from construction until revenue streams begin impact the business case? And how can the consequences be alleviated?

5.10

What is your initial perspective on the proposed estimated CAPEX and OPEX, and do you see potential for lowering CAPEX and OPEX?

5.11

What is your perspective on how various elements that may also be part of the Energy Island will influence the business case, including port, service facilities and other services, and will this be dependent on whether the island is built to full capacity from day one or as a modular build-up?

Risk allocation

5.12

On an overall level, how do you see the most efficient risk sharing model between the Danish State and the commercial co-owner and why? What responsibilities, obligations and managerial flexibility are key to the commercial attractiveness of co-ownership? E.g. do you perceive it to be a precondition that the state commit itself to a tender for 3GW offshore wind?

5.13

What are the most critical risk factors and how could these be mitigated in the most optimal manner?

5.14

We would like to get your view on how high-level risks can be shared and distributed between the government and a given commercial co-owner, including:

- Technical risks (design, construction cost overruns and delays due to construction)
- Operation/maintenance (operation, maintenance and re-investment costs, change in demand, higher/lower operational costs than anticipated)
- Market/commercial risks (Financing, higher/lower rental payment, competition, recycling/re-selling shares/exit)
- Legal and political (approvals, sector regulation)

Please substantiate your suggestions to how these risks should be shared.

5.15

Do you see advantages/disadvantages of having different risk sharing models in construction and operation (e.g., private construction risk, but shared operation and revenue risk?) and why?

5.16

There are multiple ways to handle the financial implications of risk allocations. What are your views on a potential payment mechanism, based on a penalty structure, to ensure aligned incentives based on the risk allocation between the Danish State and the commercial co-owner, and why?

Funding and capital structure

5.17

The Danish State must own at least 50.1%. What ownership share (within the remaining 49.9%) do you find most attractive? What would be the most important conditions for making this particular ownership share attractive?

How do you see the roles of the private co-owner and the Danish state in the management of the joint company?

5.18

What are your perspectives on the financing and potential capital structure of the project company during the construction and the operation phase, respectively? Please specify your answer.

5.19

Is it of importance to your business case whether the Energy Island is classified as real estate, implying that it may be possible to register the title and the transfer of rights to the island, including mortgages, as security for loans?

5.20

How can a given capital structure with the optimal risk to return profile contribute to balancing the demand for innovation and efficiency? Please specify your answer.

5.21

Can you indicate your cost of capital on this type of project and what models and measures can be used to reduce the cost of capital of the project?

5.22

If external debt is planned to be part of the capital structure, please elaborate on assumed terms and conditions, during construction and during operations.

Profit distribution and exit terms

5.23

From your perspective, do you see profit distribution as an effective tool to compensate parties for allocated risk? Please elaborate and be as specific as possible when giving examples for inspiration.

5.24

The selection of the commercial co-owner for the co-ownership of the island is expected to be of great importance to the Danish State. Consequently, the Danish State will most likely be interested in a long-term co-ownership. The commercial ownership

is expected to include limitation on the transfer of shares, cf. section 9 regarding foreign investment screening.

What is your perspective on this kind of limitation, and how will it affect your view on exit terms, including timing of exit, valuation method and other relevant parameters?

6 Shared ownership and corporate structure

The political agreement of February 2021 acknowledges that it is essential to include expertise from one or more commercial operators in order to fulfil the potentials of the Energy Island. It is therefore the aim of the Danish State that the ownership of the Energy Island should be shared between a commercial co-owner and the Danish State. The Danish State must however always be the majority owner of the Energy Island (and majority owner of the activities that may be defined as critical infrastructure. For the power transmission system constructed, owned and operated solely by the Danish State through Energinet, the criteria will be fulfilled by the Danish State's ownership of Energinet).

Accordingly, the corporate structure must ensure the right incentives for the commercial co-owner, and at the same time ensure that the Danish State remains the majority owner of the Energy Island and the critical infrastructure on the Energy Island.

Requirements on foreign investment screening is expected to influence, how shared ownership of the Energy Island can be structured and may require approval of the commercial co-owner of the Energy Island, cf. also section 9 below.

In the following, the DEA will illustrate different examples of structures of the shared ownership. It should be noted that no political decisions concerning the corporate structure of the shared ownership have been made at this point. Furthermore, the economic and financial conditions of the varying structures in the two scenarios below are not clarified at this point.

Scenario 1) The Energy Island is divided into two parts

In this scenario, the Danish State will own 50.1 % of the territory of the Energy Island, and the commercial co-owner will own the other part of the territory.

In this scenario, the commercial co-owner will operate and maintain also the territory owned by the Danish State pursuant to an agreement.

Scenario 2) A corporate structure with shared ownership of a limited liability company that owns the entire Energy Island

In this scenario, a company will own the Energy Island. The ownership of the company will be divided between the commercial co-owner and the Danish State with a

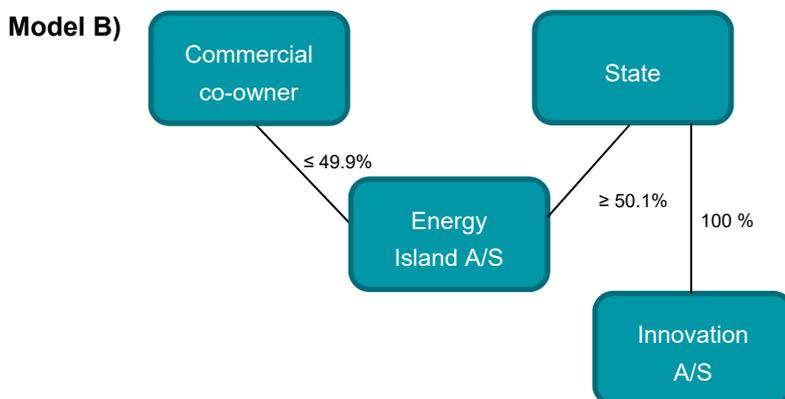
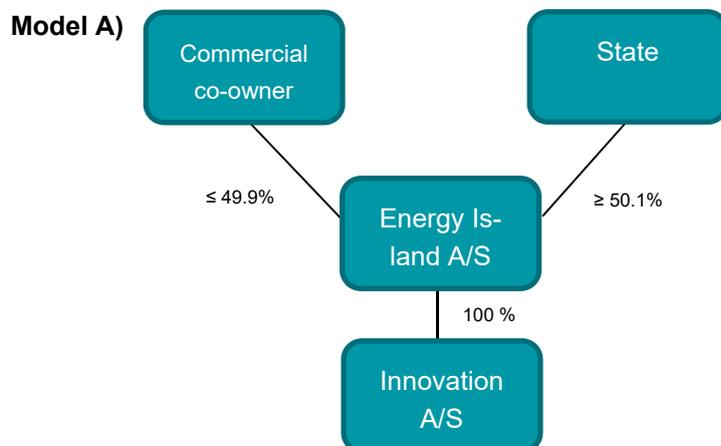
maximum of 49.9 % of the shares owned by the commercial co-owner and a minimum of 50.1 % of the shares owned by the Danish State.

In this scenario, the commercial co-owner could be responsible for the daily operation of the joint company regulated in a shareholders' agreement between the parties. Another set-up could be that the board of directors, appointed by the commercial co-owner and the Danish state, appoint the management of the company. The management will then be responsible for the daily operation of the joint company.

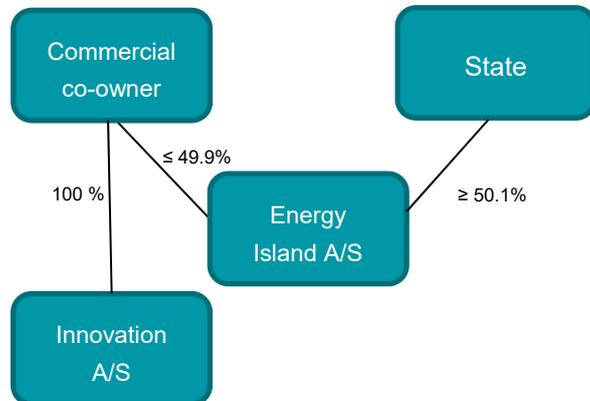
Models for placement of other activities

The joint company (Energy Island A/S) from scenario 2 could, e.g., have the option of establishing a subsidiary company, cf. model A, in which other future activities on the Energy Island could be placed – e.g. commercial activities, innovation projects and/or Power to X, cf. also section 5.

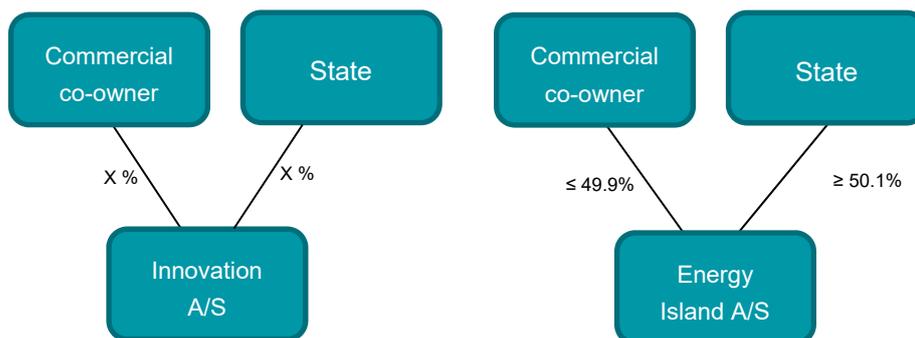
In the following, the DEA presents examples of four models regarding the placement of other activities (named “Innovation A/S”):



Model C)



Model D)



Questions

6.1

What do you consider to be the preferred share of commercial ownership of a joint subsidiary “Energy Island A/S” (within the limit of 49.9 %)? Would you prefer a lower share and if so, why? What would be the most important conditions for making this particular ownership share attractive? cf. also section 5.

6.2

What are your comments to the listed scenarios 1 and 2?

Under which circumstances do you consider the above scenarios and models suitable for achieving the full technical, economic, business and innovation potentials of the Energy Island? Please list and specify these circumstances.

Which risks do you find attached to the models given the identified circumstances? Please specify the reasoning behind your answer.

What do you consider the pros and cons of model a)-d) described above? Do you prefer other models than a) – d)?

6.3

Do you have any preference as to the choice of corporate form?

Do you have any other comments or suggestions concerning the corporate structure of a shared ownership of the Energy Island? Please be very specific in your reply about the reason for suggesting other structures (including pros and cons).

6.4

What are your expectations to the terms and conditions of a cooperation/co-ownership with the Danish State? Which rights would be essential for you in order to accept a minority co-ownership? Please specify the reasoning behind your suggestions.

Regarding transfer of shares, the Danish State envisions that a right of first refusal, right of allocation etc. is included in the shareholders' agreement. Does this give rise to any concerns?

6.5

What would be the preferred duration for the period of your co-ownership?

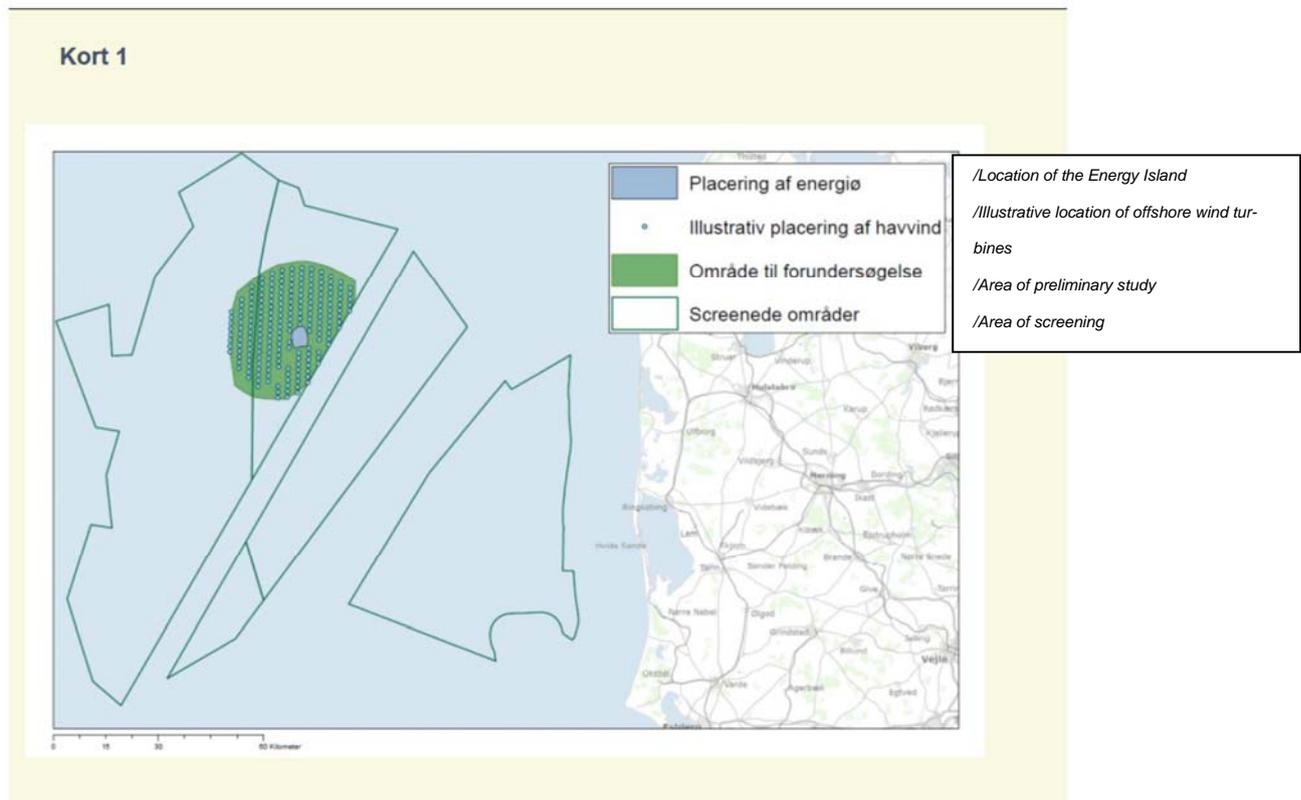
7 Construction and technical requirements

The political agreement states that the Energy Island must be an artificial island (i.e. not a platform construction).

The artificial island must initially have a minimum area of approx. 120,000 square meters, which is expected to provide sufficient area to accommodate equipment needed for collecting a capacity of 3 GW of connected offshore wind farms and the power transmission systems necessary to distribute the power from the island to Denmark and a neighbouring country. The power transmission systems for the 3 GW offshore wind capacity will be constructed, owned and operated by Energinet.

It is envisaged that the capacity of wind farms connected to the Energy Island will be increased to a minimum of 10 GW long-term. The technical construction method for the artificial island should therefore allow for modular area expansions over time to accommodate the necessary equipment for the increased capacity.

The Energy Island is expected to be placed west of Jutland:



Reference: [Aftaletekst - Energioer - Ejerskab og konstruktion af energioer mv.pdf \(kefm.dk\)](#)

Questions

7.1

What are your considerations regarding the modular area expansions of the Energy Island? Such modular expansion should not affect the transmission of existing off-shore wind power.

Could the artificial island be constructed faster than in three years, cf. the timetable in Appendix 2?

7.2

Would it be possible for you in your tender for the co-ownership of the Energy Island to include a project proposal and a maximum budget for the initial construction of the Energy Island?

Such project proposal and budget should provide a basis for the subsequent procurement of the construction project.

7.3

What time duration is needed to prepare your tender regarding the co-ownership if it is to include a project proposal and a maximum budget for the construction of the island?

See also the draft timetable in section 4.

7.4

Would you be willing to carry the risk for budget overruns?

What would be the optimal solution for the construction and transfer of the island to “Energy Island A/S”?

- Should the commercial co-owner complete the construction of the island before transferring it to “Energy Island A/S”? or,
- Should “Energy Island A/S” be the contracting authority when the construction is put out for tender?

Please specify the reasoning behind your answer.

7.5

Would you prefer a joint procurement process for the shared ownership and the construction of the Energy Island? If so, the offer should include a civil works contractor and fixed prices for the construction.

What would be the consequences for the timetable? Would the artificial island be completed earlier than stated in Appendix 2?

8 Innovation and commercialisation

The main purpose of the Energy Island is to serve as a hub for the transmission of power from the envisaged offshore wind farms to Denmark and to neighbouring countries.

However, it is also of importance to the Danish State that the Energy Island provides optimal conditions for innovation and commercialisation of new and innovative solutions, such as energy storage and Power-to-X (PtX), which may support both the transition to green energy and the business case of the Energy Island as a whole.

The term PtX covers various methods of converting electrical energy into liquid or gaseous chemical energy sources through electrolysis and further synthesis processes.

Other commercial activities that could be of relevance to the operation of the Energy Island are, *inter alia*, a harbour and heliport serving the wind farm owners as well as storage and crew facilities.

The participants in the market dialogue are encouraged to share their views on the optimal utilisation of the Energy Island in terms of innovative and commercial activities in addition to the main purpose of the island.

Questions

8.1

Do you consider energy storage and PtX facilities on the Energy Island to be beneficial to the business case for the Energy Island as a whole (in short term or in long term)? cf. also section 5.

- Do you consider state subsidies necessary for energy storage and PtX facilities to be profitable?
- What are the benefits of establishing energy storage and PtX facilities on the Energy Island compared to establishing such facilities on the shore of Jutland or connected neighbouring countries?

8.2

Which other innovative activities could benefit the business case for the Energy Island Project? cf. also section 5.

- How do you envision organising these activities, and what would be the most central conditions for making the activities attractive? Specifically, what would the optimal role of the Danish State be in such projects?
- How should it be ensured that future innovative activities on the Energy Island are always operated by the most suitable parties? By tendering procedures?
- Should it be possible to expand the area of the artificial island for future innovative activities? And under which conditions?

Please specify the reasoning behind your answer.

8.3

Which commercial activities do you consider to be of most relevance to the operation of the Energy Island?

- How do you envision organising such activities, and what would be the most central conditions for making the activities attractive? Specifically, what would the optimal role of the Danish State be in such projects?

9 Certain preconditions and interdependencies

The business case of the Energy Island and the fulfilment of its potential depend on a number of influencing factors. Some influencing factors might affect the entire project by delays or by significant adjustments. Some of the most crucial influencing factors currently identified are outlined below.

Cable routes to other countries

The scale of the project depends on agreements with national authorities in one or more neighbouring countries on cable routes from the Energy Island to transmit power received from the wind farms. The political agreement states that if no binding agreement on cable routes to other countries have been made at the beginning of 2022 it will be up to political decision whether and how the project can proceed.

Foreign Investment Screening

Requirements on foreign investment screening is expected to influence how shared ownership of the Energy Island can be structured and may require approval of the commercial co-owner of the Energy Island. On 10 March 2021, a Danish Act on Foreign Investment Screening was proposed ("*Lov om screening af visse udenlandske direkte investeringer m.v. i Danmark (Investeringscreeningsloven)*")¹⁰.

¹⁰ [20201_l191_som_fremsat.pdf \(ft.dk\)](#) – the proposed act is only available in Danish

Wind farms producing at least 3 GW

The first wind farms can only be connected to the Energy Island approx. three years after the Energy Island is completed due to the installation of the transmission system on the Energy Island. Therefore, the tender procedure for the wind farms with a capacity of 3 GW is expected to be carried out in parallel with the construction of the Energy Island. The co-ownership tender procedure will accordingly be based on an assumption that wind farms with 3 GW capacity will be constructed and ready to transmit power by the end of 2033, cf. the timetable in section 4 and the business case in section 55.

Wind farms producing up to 10 GW

with the long-term vision of the energy island project is that the island will be able to collect and distribute the power of minimum 10 GW offshore wind capacity. However, it will only at a later stage be decided to what extent and over which timeframe further wind farms (minimum 10 GW) will be constructed to be connected to the Energy Island.

Environmental impact assessment (EIA) process

The construction of the Energy Island will depend on the environmental impact assessment (EIA) process. The EIA process can only be initiated after a tender process is completed, because the design of the Energy Island is not expected to be sufficiently detailed in the tender material. Thus, when the winning bid has been announced, the EIA process will be initiated as soon as possible by the project developer based upon the project of the winner. The EIA process and not least related complaints may delay the entire project.

Construction of the power transmission system

Energinet will construct and own the power transmission system (incl. cable routes to other countries) on the Energy Island. The construction process of the transmission system may delay the installation of wind turbines, cf. section 5.

Required legislative amendments

The project depends on a number of legislative amendments. This includes a new Act on the Planning of the Energy Island, amendments to existing energy regulation and potentially other regulation. The need for legislative amendments is expected to be uncovered prior to the publication of the contract notice. However, some amendments might not be finally adopted until after the deadline for application for prequalification.

State aid considerations and procedures

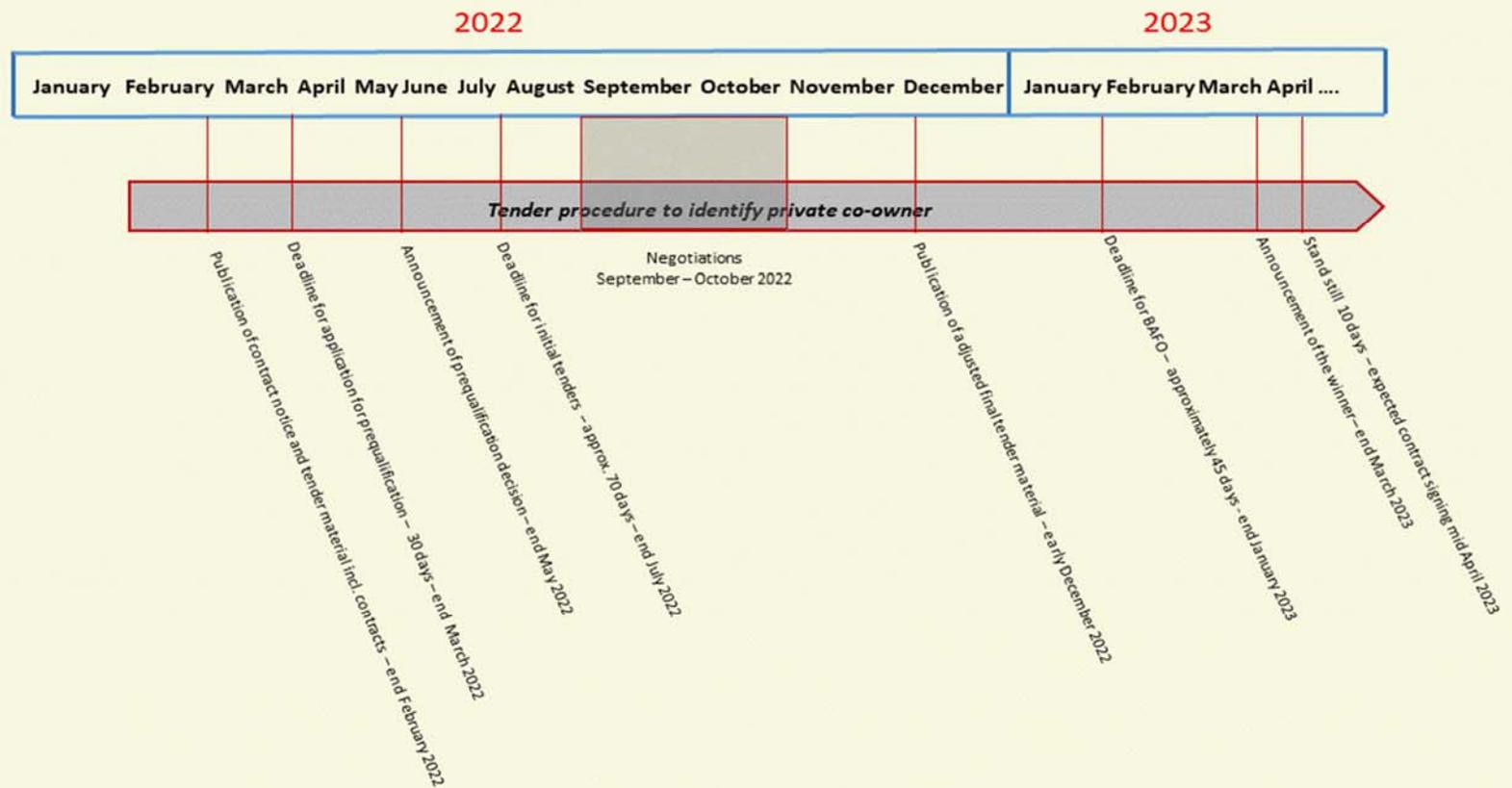
The project will entail State aid considerations. The complexity of these considerations and the potential need for State aid approval by the European Commission may

delay the expected time line. The State aid analysis will be performed when the details of the business case, the financing of the project, the shared ownership and corporate structure, and the tendering procedure are further settled.

10 Appendices

Appendix 1

Preliminary timeline for the tender procedure identifying the commercial co-owner of the Energy Island



PRELIMINARY TIMETABLE FOR THE ENERGY ISLAND PROJECT

