

2022
ENERGISTYRELSEN – DANISH ENERGY AGENCY

Foreign Experiences for Awarding Offshore Wind

NEW CONCEPTS FOR AWARDING OFFSHORE WIND LICENCES IN DENMARK – PART 1





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PROJEKTNR.	DOKUMENTNR.
A245570	A245570

VERSION	UDGIVELSESDATO	BESKRIVELSE	UDARBEJDET	KONTROLLERET	GODKENDT
3.0	31-10-2022	Rapport – Endelig version	ALL	MUAI	JBIS

Table of Contents

1	Summary in Danish	5
1.1	COWI's key take aways for each country in Danish	7
2	Summary and Consolidation of tender models	10
3	Tender processes for Offshore Wind abroad	17
4	Offshore Wind Tender Schemes in Germany.....	20
4.1	Introduction to tender models in Germany.....	20
4.2	Pros and Cons of tender model in Germany	27
4.3	Developer reflections on tender model in Germany	27
5	Offshore Wind Tender Schemes in Belgium	28
5.1	New development and new tender process in Belgium	29
5.2	Developer views of tender model in Belgium.....	33
5.3	COWI Reflections on tender model in Belgium	33
6	Offshore Wind Tender Schemes in The Netherlands.....	34
6.1	Introduction to the tender models in The Netherlands.....	34
6.2	Steps in the tender process.....	34
6.3	Offshore Wind Energy Law	39
6.4	Authorities' and developers' view of tender model in The Netherlands.....	43
6.5	COWI Reflections on the tender model in The Netherlands	45
7	Offshore Wind Tender Schemes in United Kingdom	47
7.1	Introduction to the tender model in United Kingdom.....	48
7.2	Other Award Criteria in Offshore Wind tender model.....	56
7.3	COWI Reflections on tender model in United Kingdom	57
8	Offshore Wind Tender Schemes in United States.....	59
8.1	Introduction to the tender models in the United States	59
8.2	Developers' reflections tender model in United States	64
8.3	COWI Reflections on tender model in the United States	65

1

Summary in Danish



1 Summary in Danish

Danmark skal accelerere den grønne omstilling ved bl.a. at udbygge vedvarende energi. Danmarks store havarealer med gode vind- og havbundsforhold giver ideelle betingelser for at understøtte denne udbygning gennem flere havvindmølleparker. Ambitionen er, at Danmarks produktion af havvind skal mere end femdobles inden udgangen af 2030 (udbygning med op til 9 GW)¹. Derfor er aftaleparterne i Danmarks regering enige om at sikre rammevilkår, der kan muliggøre en firedobling af den samlede elproduktion fra solenergi og landvind frem mod 2030. Partierne er også enige om at udbyde 4 gigawatt ekstra havvind til realisering senest i 2030, hvilket vil betyde, at Danmark kan femdoble produktionen af havvindmøllestrøm de næste 8 år.²

Energistyrelsen er den primære driver på fastlæggelsen af en opdateret udbudsramme. Energistyrelsen får i den forbindelse bistand til at indsamle og analysere praktiske erfaringer fra andre markeder, som skal være med til at danne rammerne for mulige koncepter for tildelingskriterier, støtte/-betalingsmodeller og processen for udbud i en dansk kontekst.

Relevante interessenter i form af udviklere og myndigheder fra Tyskland, Belgien, Holland, England, og USA er blevet inddraget i analysen. Gennem grundig gennemgang af disse markeders modeller, med særligt fokus på områderne systemintegration, bæredygtighed, natur og miljø, innovation og økonomi, fremlægges fordele og ulemper, set i forhold til dansk implementering.

Resultater

Fælles for Danmark, Tyskland, Holland og Belgien er Esbjerg deklARATIONEN³ som har til formål og i stigende grad erstatte fossile brændstoffer, herunder russisk olie, kul og gas, med europæisk vedvarende energi fra Nordsøen, herunder havvind og grøn brint, som vil bidrage til både EU's klimaneutralitet og energisikkerhed. England har også truffet en politisk beslutning om at accelerere, samt udbygge vedvarende energi og blive uafhængig af energi fra Rusland.

Både **Tyskland** og **Belgien** er i gang med at udvikle ny offshore vindlovgivning for at nå de nye ambitiøse mål, og dermed definere en ny udbudsmodel (der skal godkendes i 2023 gældende for begge lande), der også tager højde for multikriterievurdering såsom minimums- og tildelingskriterier.

Opfyldelsen af kriterierne vurderes ved hjælp af point (evalueringspoint). Afvejningen af kriterierne er forskellig i de to lande, men begge synes at have lignende kriterier i forhold til:

- > Pris
- > Bæredygtighed med fokus på dekarbonisering.
- > Mængde af produceret energi.
- > Natur og Miljø.
- > Lokalt indhold: Bidrag til at sikre faglærte/borgerdeltagelse og lokale fordele.

I **Holland** er der et omfattende offshore vindudbud og godkendelsesordning. Den hollandske regering har

¹ Ambitionen er fra Finanslovsaftale 2022, [Danmark kan mere II - Regeringen.dk](https://www.regeringen.dk)

² Aftale om et mere grønt og sikkert Danmark, <https://www.regeringen.dk/nyheder/2022/aftale-om-et-mere-groent-og-sikkert-danmark/>

³ Esbjerg deklARATIONEN, <https://www.regeringen.dk/aktuelt/publikationer-og-aftaletekster/the-esbjerg-declaration/>

defineret fire udbudsmodeller hver med sit fokuspunkt. Udvælgelsen af en bestemt udbudsmodel er baseret på de udbudte arealer og omfatter specifikke tildelingskriterier. Afhængigt af arealernes egenskaber kan bidrag til økologien (natur og miljø) eller energiforsyning (systemintegration) vægtes højere. Den sidste auktion for havvind i Holland anvendte man udbudsmodel 3 for henholdsvis område HKW VI og HKW VII. Processen er stadig igangværende og man har ikke valgt en vinder endnu.

I **Holland** bruger regeringen et ekspertpanel til at rådgive og evaluere buddene samt tildeling af point. Der er en opfattelse af, at brugen af multikriterier kan føre til retssager. Der er indtil videre ingen retssager vedrørende multikriterie-udbudsmodellerne. Risikoen mindskes også ved at have en klar og veldokumenteret proces. **Holland** giver mulighed for omfattende adgang til information. Dette resulterer ofte i, at tabende tilbudsgivere (udviklere) anmoder om alle oplysninger knyttet til den endelige beslutning. Det formodes, at udviklere beder om flere oplysninger for at styrke deres position til fremtidige udbud og ikke for at sætte spørgsmålstejn ved proceduren. Udviklere er blevet spurgt, om de ville foretrække en finansiel auktion for at mindske risiciene. Svaret var negativt.

I **Storbritannien** fokuserer regeringen på at give en fremadrettet synlighed af fremtidige Contract of Difference- runder med økonomisk støtte. Runde 1-4 er afsluttet og næste auktion er runde 5 projekter. Sektoraftalen fokuserer på at øge lokal produktion i **Storbritannien** til 60 % i 2030, samt forøgelsen og repræsentationen af kvinder som arbejdsstyrke til mindst en tredjedel i 2030.

Regeringen planlægger også at effektivisere planlægningen og tilladelsen af havvind betydeligt, og det forventes at reducere processen fra fire år i gennemsnit til et år med en ny offshore vindaccelerationstaskforce, der skal lede dette. Detaljerne om denne plan er endnu ikke offentliggjort.

Udbudsprocessen er udformet i tre faser og lægger vægt på prækvalificering af tilbudsgivere både på de tekniske og økonomiske kapaciteter og deres foreslåede projekter.

I **Storbritannien** kræver regeringen også, at udviklere med produktion på mere end 300 MW, der ansøger om CfD, skal indsende en plan for forsyningskæden, da regeringen anser dette projekt for stort nok til at påvirke forsyningskæderne. Ansøgerne skal også igennem planen for forsyningskæden undersøge hvordan de kan dekarbonisere forsyningskæden i samarbejde med industrien, som presser på for at etablere nye kulstoffattige industrier.

I **USA** er udbudsmodellen mere kompleks, da hver stat har sine egne, unikke udbud og mål for elindkøb. F.eks. har Massachusetts' udbud været fokuseret på at få den laveste pris, New Yorks udbud er fokuseret på lokale fordele såsom lokale arbejdspladser og produktion, og New Jersey fokuserer på at reducere transmissionsomkostningerne.

1.1 COWI's key take aways for each country in Danish

Lande	Hovedbudskaber
Tyskland	<ul style="list-style-type: none"> > Den tyske regering indfører en ny lov om vindenergi til søs 2023 (også kaldet: WESA2023), som det tyske parlament i juli 2022 vedtog. Den afventer nu EU-godkendelse, før den træder i kraft i 2023. > WESA2023 implementerer tildelingskriterier: Bud pris og kvalitet, hvor sidstnævnte fokuserer på dekarbonisering, mængden af produceret energi, støjemissioner under fundament installation og bidrag til at sikre lokal arbejdsstyrke og produktion. > For at accelerere offshore vind har den tyske regering identificeret to forskellige auktionsmodeller: centralt forhåndsvurderede områder der er screenet, og ikke centralt forhåndsvurderede områder der ikke er screenet, og minder om åben-dør-ordningen. > For centralt forhåndsvurderede arealer er der på opfordring fra BSH gennemført undersøgelser for området, inden udbudsmaterialet til auktionen udsendes, og sikre, at alle tilbudsgivere som udgangspunkt får samme information. For områder, der ikke er centralt forhåndsvurderet, udstedes sådanne oplysninger ikke.
Belgien	<ul style="list-style-type: none"> > I lighed med Danmark er de belgiske myndigheder i gang med at forbedre udbudsmodellen og processen ved at se på nabolande og undersøge muligheden for at implementere multi-kriterier i udbuddet. De Belgiske myndigheders mål er at offentliggøre det første udbud i fjerde kvartal af 2023. > Den Belgiske regering undersøger i øjeblikket forskellige udbudsmodeller. CREG (el- og gas regulerings kommissions regulator) blev bestilt af energiministeren til at udføre en sammenlignende undersøgelse af nogle EU-udbudsmodeller for havvind (Danmark, Storbritannien, Frankrig, Tyskland og Holland). <ul style="list-style-type: none"> > CREG-undersøgelsen anbefaler prækvalifikationskriterier > Det tildelingskriterium, som CREG foretrækker, er prisen > Afhængigt af zonen uden for eller inden for Natura 2000 foreslås der dog yderligere udvælgelseskræterier med fokus på energiproduktion (P50), borgerdeltagelse, lokale fordele, bæredygtighed og multianvendelse, naturpåvirkning, innovation og systemintegration.

Holland

- > Processen fra udbud til afgivelse af tilbud var 4-5 måneder for de seneste tilbud (HKW VI og VII).
- > Processen er veldefineret og gennemsigtig.
- > Evaluering af tildelings og multikriterier vil være i overensstemmelse med den oprindelige tildelingsplan på 3-6 måneder og medfører ingen ekstra forsinkelser i beslutningsperioden.
- > Processen er subjektiv, men gennemsigtig (dvs. subjektiv forstået som en sund, begrundet og gennemsigtig faglig overvejelse inden for den fastsatte evalueringsramme), og et panel af eksperter vil evaluere uafhængigt, og derefter rådgive regeringen med deres anbefalinger.
- > Systemintegration vejes med 20 %, men det er uklart, hvad merværdien for samfundet er. Hvis energistyrelsen skulle bruge samme metode, kunne scoren være på innovationsaspektet, såvel som på mængden af ekstra energi der kan produceres.
- > Miljø vægtes højt. Som minimum vil alle udviklere overholde EU 's-regulation for at beskytte naturområder. Hvad er de ekstra fordele, det hollandske samfund får? De udviklere, der er blevet tildelt havvindrettigheder på det seneste, er de kendte udviklere. Disse udviklere er mere erfarne i at arbejde med offshore vind-biodiversitet og kan være en god forsikring for, at de ved mere og kan bidrage til restaureringer mv.
- > Den regulatoriske proces til håndtering af havvindapplikationer giver plads til fleksibilitet. For hvert nyt udbud kan myndighederne indføre et ekstra sæt kriterier og lovgivning.

England

- > Omfattende prækvalifikationsproces med fokus på tilbudsgiveres økonomiske formåen, tekniske erfaring og juridisk overholdelse. Hvis Energistyrelsen skulle bruge samme metode til prækvalifikation, kan dette spare tid, og kun kvalificerede tilbudsgivere vil komme videre til næste fase. Dette kan også skubbe tilbudsgivere i retning af ikke-pris kriterier, der er vigtige for Danmark.
- > Crown Estate vil gennemgå foreslåede projekter og få adgang til den økonomiske og tekniske robusthed af projekter indsendt af de prækvalificerede tilbudsgivere.
- > Kræver en plan for forsyningskæden, der skal indsendes af udviklere med fokus på grøn vækst, innovation, infrastruktur og lokal kompetenceudvikling.

- > Den indsendte plan for forsyningskæden fra udviklerne vil blive markeret for omfanget af responsen, ambitionsniveauet og forventede resultater og gennemførlighed med sikkerhed for levering i hvert afsnit.
- > Afdelingen for Business, Energi og Industriel Strategi (BEIS) vil overvåge implementeringen af planen for forsyningskæden.
- > Hvis Energistyrelsen skulle bruge samme metode til planen for forsyningskæden, kan dette potentielt øge omkostningerne, forsinke processen og øge behovet for overvågning.

United States

- > Udbudsmodellen i USA er meget kompleks og afviger fra stat til stat. Den anvendte model er gavnlig til at kickstarte en industri og accelerere havvind. Dog ikke relevant i dansk kontekst.

2 Summary and Consolidation of tender models

The summary and consolidation of the tender models and on the findings in this study are condensed in the following tables.

Table 2-1 shows an overview of the five pillars identified as important areas by the Danish Energy Agency (system integration, sustainability, nature and environment, innovation and economics split into the five countries COWI has screened. For detailed information and further explanation reference is made to the individual country sections of this report. The five pillars are analysed in more depth in the Part 2 report.

Table 2-2 provides an overview of the following parameters:

- > Tender model, status, and applicability
- > Procedure
- > Subsidy system, Cap on concession payment, method to set cap
- > Award criteria (weighing)
- > Allowed number of offers
- > Time to decide for Permits
- > Pre-Qualification Criteria
- > Subsidy paid during negative hours
- > Indexation applicable
- > Grant calculated on the basis of
- > Guarantee
- > Grid Connection build by
- > Lease granting procedure

Table 2-1 Executive Summary (5 Pillars) for each country

Area	Germany	Netherlands	Belgium	United Kingdom	United States
Maximum points	100	200	100	Pre-qualification assessment for seabed lease 100 points for Supply Chain Plan to qualify for CfD	Not applicable.
Economic	Price (max 60 points) Of which quality (max 40 points) are described below. No caps.	Price (max 20 points) Capped at 50 mln EUR for the latest tenders HKW VI and VII <i>Criterion 1</i>	Price (max 70 points) Below is based on min strike price in 2-CfD outside Natura 2000 Unknown at this point in time if a cap will be included.	Seabed lease: multi-cycled sealed bidding based on the highest option fees. CfD: sealed bids based on the lowest strike price The cap is set on capacity, that is a capacity cap of 5000MW will apply to Pot 1. There is no capacity cap in Pots 2 or 3. If a bidder exceeds the cap they are excluded	Leases awarded through competitive auctions
System Integration	System integration or amount of energy produced will be given (max 10 points)	The contribution of the wind farm to the energy supply (max 40 points) <i>Criterion 3</i> The contribution to the integration of the wind farm into the Dutch energy system (max 100 points) <i>Criterion 4</i>	Innovation and system integration (max 10 points)	Not applicable.	Developers to propose projects to BOEM that must be submitted for environmental, socioeconomic, and technical review and approval.

Sustainability	Contribution to decarbonization (max 10 points)	Thus far Dutch tenders have not Awarded developers for efforts to decarbonize own operations or their supply chain.	Sustainability and multi-use (max 5 points)	Contracts for Difference (CfD): Developer to demonstrate alignment towards UK's Green Growth strategy	Developers to propose projects to BOEM that must be submitted for environmental, socioeconomic, and technical review and approval.
Nature and Environment	Noise emission and covering of the seabed by the foundation noise emission and coverage of the seabed by the foundation structure (max 10 points)	Contribution to the ecology of the North Sea (max 100 points) <i>Criterion 4</i>	Nature impact (max 5 points)	Plan-Level Habits Regulations to assess possible impact of project.	Developers to propose projects to BOEM that must be submitted for environmental, socioeconomic, and technical review and approval.
Innovation	Not applicable.	Is included in the scoring of points under criterion 4 (between 20-50 points, see details in appendix B)	Is one of the qualitative criteria (that would be all of them weighted max 30% of the points), this criterion could get together within System integration 10 to 33 points outside Natura 2000 area	Contracts for Difference (CfD): Developer to demonstrate the investments to be made in R&D from both the developer and the Supply Chain Partners, demonstrate innovation and novel technologies along with innovative business processes and methods.	Developers to propose projects to BOEM that must be submitted for environmental, socioeconomic, and technical review and approval.
Other	Other contribution to secure jobs in Germany (10 points)	The certainty of realization of the wind farm (max 40 points) <i>Criterion 2</i>		CfD encourages local content and local job training.	Each state has its own, unique, power procurement tenders and goals

Table 2-2 Executive Summary

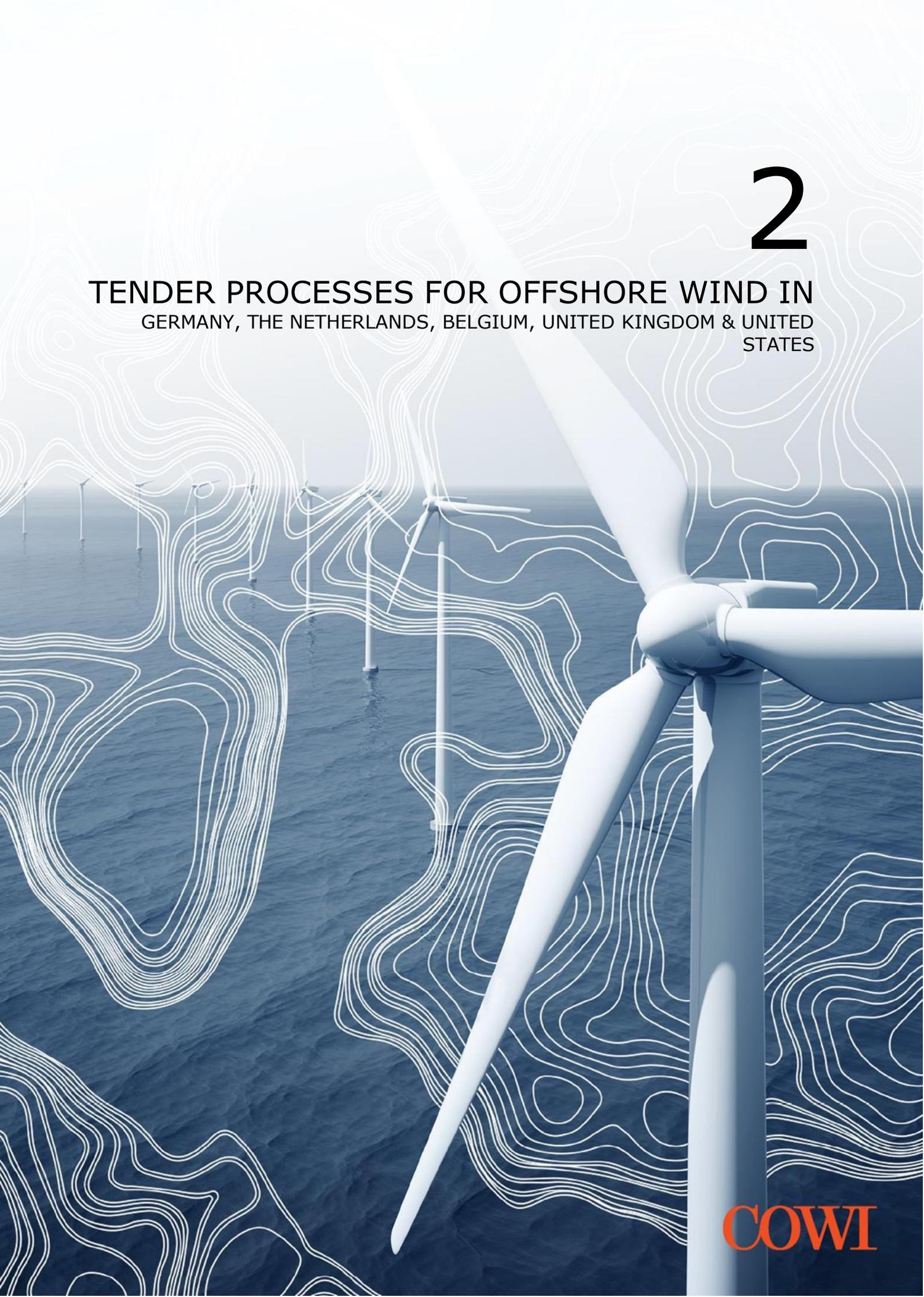
Area	Germany	Netherlands	Belgium	United Kingdom	United States
Tender Model	Wind Energy at Sea Act 2023	Wind Energy at Sea Act / HKW VI and VI	New tender model under development (law of 12 May 2019)	BEIS Offshore Wind Sector Deal / Offshore Wind Leasing Round 4	The Bureau of Ocean Energy Management (BOEM) regulates off-shore wind.
Status	Approved by German Parliament, July 2022 Awaiting EU approval (expected Q4 2022) Details of the act, e.g., ranking and weighting of award criteria, are still to be worked out (ongoing)	Active	Public consultation in Jan/Feb 2022, Analysis ongoing to decide on new tender model	Active, with 8GW of off-shore wind awarded at latest Leasing Round 4.	Active but different from state to state.
Applicable	Aimed to come into force: 1.1.2023	1 April 2022	Before end 2023	Jan 2020 – Autumn 2022	Not applicable.
Procedure	Competitive Tendering with pre-qualification	Competitive Tendering with pre-qualification	Competitive Tendering with pre-qualification	Competitive Tendering with pre-qualification	Competitive Tendering
Subsidy System	No CfD; 2 different auction models for a) pre-assessed areas and b) not pre-assessed areas	No subsidy active	2-sided CfD or Zero bid	2-sided CfD	
Cap on concession payment	Winning bidder has to pay 90% of the bidding price to the off-shore wind grid fund, 5% to an offshore nature reserve fund and 5% to a fishery fund. No cap.	Not applicable.	Not decided	Winning Bidder will be required to pay an Option Fee Deposit. After construction is commenced, the Developer is liable for an annual rental payment. The capacity is capped in the bidding process for Pot1 only	Not applicable.

Area	Germany	Netherlands	Belgium	United Kingdom	United States
Method to set cap	See above	Points	Not decided	See above	Not applicable.
Award Criteria (weighting)	Price (max 60 points) and Quality (max 35 points) <u>Quality</u> : contribution to decarbonization (max 5 points), amount of energy produced (max 10 points), noise emission and covering of the seabed by the foundation structure (max 10 points), contribution to secure jobs in Germany (max 10 points)	<ol style="list-style-type: none"> 1. Financial offer 2. Certainty of realization of the wind farm (expertise. Knowledge and financial guarantees) 3. Contribution of the wind farm to the energy supply (P50 value) 4. Contribution to the ecology of the North Sea / the contribution to the integration of the wind farm into the Dutch energy system 	Mainly lower strike price (70% weight if 2-CfD) + more qualitative criteria (Energy production (P50), Citizen participation, local benefits, sustainability and multi-use, nature impact, innovation and system integration)	<p>Seabed Lease: Multi-cycle sealed bid based on highest option fee, with pre-qualification before bidding stage</p> <p>CfD: sealed bid based on the lowest strike price.</p>	Not applicable.
Allowed number of offers	Bidders are allowed to bid on different areas. Not clear if different bids can be submitted for one area by the same bidder.	Bidders are allowed to make multiple bids for the same permit. The Dutch authorities can restrict this amount as they see fit.	Unknown	<p>For the offshore wind leasing round, on each Bidding Cycle, Eligible Bidders will be able to bid one Eligible Project with an Option Fee Bid.</p> <p>Bidders can bid in each subsequent Bidding Cycle any projects and sites that has satisfied the Pre-Qualification stage and not overlapped with site awarded in previous Bidding Cycles.</p>	When multiple areas are offered, bidders may bid on any area. In some auctions bidders have been limited to a single area, in other auctions they have been allowed to bid on multiple areas.

Area	Germany	Netherlands	Belgium	United Kingdom	United States
Details	If there several zero bids a dynamic auction will be started until only one bidder is left.	Mutual weighting based on points; higher number of points leads to higher ranking. In the event of equal ranking, each criterion is looked at based on priority order	N/A	Awarding domain concession and support are 2 separate processes	N/A
Lease granting procedure	25 years for construction and operation and can be extended by 10 years	35 years + 5 years for dismantling	30 years	60 years lease with a 25-year break clause, with construction estimated for 3 years.	33-year lease including 25 years of operations.

2

TENDER PROCESSES FOR OFFSHORE WIND IN GERMANY, THE NETHERLANDS, BELGIUM, UNITED KINGDOM & UNITED STATES



3 Tender processes for Offshore Wind abroad

The Danish Energy Agency have appointed COWI to review tender processes for offshore wind abroad and investigate the procurement processes that are or will be used in other countries, especially within Europe. This report describes support/payment models, award criteria, and the process for tenders in each of the countries selected by the Danish Energy Agency: Germany, Great Britain, Belgium, the Netherlands, and the United States.

COWI has appointed national subject matter experts to review the different tender models in the selected countries. All experts have reached out to developers and authorities and have received either minor or comprehensive feedback from relevant stakeholders. The different chapters for each country hold different authors and rely on input from market specific stakeholders and relevant public information.

Common for all selected countries is that a political decision has been made to accelerate and increase the contribution of Renewable Energy to the country's electricity mix and become independent of energy from Russia (excluding the United States).

Both **Germany** and **Belgium** are in the process of developing new offshore wind legislation to reach the new ambitious targets, thus defining a new tender model (to be approved in 2023) that also considers multicriteria assessment such as minimum- and award criteria.

The fulfilment of the criteria is evaluated using points (evaluation points). The weighing of the criteria is different in the two countries, but both seems to have similar criteria towards:

- > Bid/Strike Value Price.
- > Sustainability: Decarbonization.
- > Amount of Energy Produced.
- > Nature and Environment.
- > Local content: Contribution to secure skilled workers/citizen participation and local benefits.

In the **Netherlands** there is a comprehensive offshore wind tender and permitting scheme. The Dutch government has defined four tender models each with a certain focus point. The selection of a certain tender model is based on the lots (area) and includes specific Award criteria, depending on the nature of the lot.

For the Hollandse Kust (west) Wind Farm Zone HKW VI and VII Dutch tenders, the government has decided to focus on motivating integral market-solutions to two of the largest challenges that further build out of offshore wind energy will face. Careful integration within the ecosystem of the North Sea and integration within the energy system. There were five additional criteria stated for these two sites: Financial offer (economy), certainty of realization of the wind farm, energy supply (system integration), contribution to the ecology of the North Sea (nature and environment), and integration of the wind farm into the Dutch energy system (system integration).

In the **Netherlands** the government also use an expert panel to advice on the ranking. There is a conception that the use of multicriteria might lead to lawsuits. There are no lawsuits regarding the multi-criteria tender models so far. However, note that the recent auctions with tender model 3 have yet not been concluded. The government mitigate the risk by having a clear, well-documented process. The Netherlands allows for

extensive access to information. This often results in losing bid parties (developers) requesting all information linked to the final decision. The authorities suspect that developers are asking for more information to strengthen their position for future tenders and not to question the procedure.

In the **United Kingdom**, the so-called Sector Deal provides forward visibility of future Contract of Difference rounds with financial support. Round 1-4 have been concluded and next auction is round 5 projects. The Sector Deal focuses on increasing UK local content to 60% by 2030, increasing the representation of women in the Offshore Wind Workforce to at least a third by 2030. Setting an ambition of increasing exports fivefold to £2.6 billion by 2030. The sector will invest up to £250 million in building a stronger UK supply chain, establishing the Offshore Wind Growth Partnership (OWGP) to support productivity and increase competitiveness. With the largest installed offshore wind capacity in the world and the prices consumers pay for the energy the sector generates falling significantly (between the 2015 and 2017 Contracts for Difference auctions, support costs fell 50%), a trend that is expected to continue.

The government also plans to significantly streamline the planning and permitting of offshore wind, and it is expected to reduce the process from four years on average to one year, with a new Offshore Wind Acceleration Task Force to facilitate this. The details on this plan have not yet been announced.

The tender process is designed in three stages and puts emphasis on pre-qualification of bidders both on the technical and financial capabilities, and their proposed projects.

The **United Kingdom** government also requires that developers with generating assets more than 300MW and applying for CfD to submit a Supply Chain Plan. The government considers this project large enough to influence the supply chains and contribute to low carbon electricity generation market. Also, a Green Growth strategy where industry push to establish new low carbon industries and decarbonises supply chains whilst levelling up the economy by creating new centres of industrial excellence.

In the **United States** the tender model is more complex as each state has its own, unique, power procurement tenders and goals. For example, Massachusetts' tenders have been focused on getting the lowest price, New York's tenders are focused on local benefits such as local jobs and manufacturing and New Jersey is focusing on reducing the cost of transmission. State procurements have been very successful in achieving low prices as well as achieving other state goals.

The Bureau of Ocean Energy Management (BOEM) uses a multiple factor auction in which bidders can move between different areas offered during the auction. Non-monetary factors considered in recent multiple factor auctions include credit for workforce training or supply chain development commitments. BOEM also includes lease stipulations that have evolved over time and include items such as environmental, project labour, and vessel transit corridor requirements.

Also, the level of flexibility in the tender model ensures that developers may submit multiple proposals in response to the RFP with different project sizes, interconnection points, compensation schemes (indexed, fixed, and inflation-based) and local benefits.

New York uses multiple factors in selecting projects from its RFPs. The selection criteria are 70% price, 20% economic benefits to the state and 10% project viability. As developers are making multiple proposals from different lease areas, with different capacities, interconnection points, compensation schemes and benefits. Similar to **Netherlands**, New York hires consultants to analyse and compare the proposals. This work is then used by New York State officials to select the award winners.

Other differentiations are that developers may also sell power (all or a part of wind farm's output) to independent electricity consumers, e.g., Amazon. Offshore Wind development in the US is complicated by the fact that we have both federal and state governments and while they consult with each other, they work independently and have their own goals.

In the upcoming sections each countries tender model is investigated in more detail and highlight some of the differences or similarities they have.

4 Offshore Wind Tender Schemes in Germany

This section introduces the offshore wind tender scheme in Germany. After a brief general introduction, a brief overview of the German government change of offshore wind legislation will be presented. Afterwards, the two models for future auctions will be described in more detail since these have a specific approach (additional legal text and awarding criteria). Finally, before going into some reflections, the pros and cons of the German tender model will be described.

4.1 Introduction to tender models in Germany

Due to the Russian invasion in Ukraine in February 2022 and the subsequent embargoes against Russia as well as the resulting shortage of energy, e.g., gas, the German government decided to increase the contribution of Renewable Energy to the German electricity mix.

To reduce Germany’s dependence on Russian fossil fuel imports several measures are underway. These include a national repowering strategy, initiatives to ensure sufficient sites for wind energy, improvements to permitting, and a new strategy to harmonize the expansion of wind energy with biodiversity and protection of nature. Earlier this year, the German government announced plans for a new approach to nature and species protection to ensure an environmentally friendly expansion of wind energy.

In 2021, renewable energy sources produced more than 40% (approx. 238 billion kWh) of German electricity demand. Wind energy (2021: onshore: 15.8%, offshore: 4.3%) has been the most important energy source in the German electricity mix. The aim is to reduce dependence on fossil fuels and have at least 80% of gross electricity to come from renewable sources by 2030.

The German government is changing offshore wind legislation to reach the new targets of 30 GW of operational offshore wind by 2030, 40 GW by 2035, and at least 70 GW by 2045. As of today, Germany has approx. 8 GW offshore wind installed.

The actions of the German government are part of the recently approved “[Easter Package](#)” (EP). These are the most profound changes to German energy policy since the introduction of competitive auctions in 2017 ([Wind Energy at Sea Act 2017](#)).

As part of the Easter Package (EP) the Renewable Energy Source Act⁴ as well as the Wind Energy at Sea Act⁵ was updated. The Wind Energy at Sea Act 2023 (going forward also named as: WESA2023) passed the German Parliament in July 2022. It now awaits EU approval before it comes into force in 2023.

A specific commissioning year for the wind turbines or the whole wind farm is not stated in the act, but the goal for 2030 to have 30GW offshore wind in operation is set as well as the goals for 2035 and 2045 (see text above).

According to WESA2023 the German government has planned the following auctions:

Year	For auction/ year
2023 and 2024	8-9 GW
2025 and 2026	3-5 GW
2027 and onwards	4 GW

⁴ EEG: Erneuerbare-Energie-Gesetz

⁵ WindSeeG: Windenergie-auf-See-Gesetz

The German government is also looking into options of auctioning wind energy in combination with renewable hydrogen production.

Different working groups of the German government are working on detailing WESA2023 in terms of criteria weighting and ranking as well as preparing an application guideline.

In this report, COWI has considered the recently launched changes as part of the WESA2023 as well as the changes that are underway, and available information on offshore wind in Germany.

With the launch of the WESA2023, the German government has pledged to prioritise offshore wind in maritime spatial planning, shorten permitting procedures and hire additional staff in the permitting authorities. On top of that no Contract for Differences (CfD) will apply. Rather two different auction models are used: *centrally pre-assessed areas* and *not centrally pre-assessed areas*.

The main differences between *centrally pre-assessed areas*⁶ and *not centrally pre-assessed areas*⁷ is that for centrally pre-assessed areas a site assessment was executed on the request of BSH⁸ before the tender material for the auction is issued and ensure that all tenderers get the same site information as a starting point. For not centrally pre-assessed areas such information is not issued.

This means that according to the WESA2023, the expansion of offshore wind in Germany would be based on auctions of sites that have already been pre-assessed by state authorities, i.e., BSH, on one hand, and auctions of sites that have not yet been pre-assessed on the other hand.

Additionally, for *centrally pre-assessed areas* the bidder with the highest score, based on award criteria: bidding price and quality, is awarded. See section [Centrally pre-assessed areas](#).

For *not centrally pre-assessed areas* a dynamic bidding process is conducted. See section [Not centrally pre-assessed areas](#).

50% of the auction areas are centrally pre-assessed areas and the other 50% of the areas are not; both areas will go to the auction process.

This split will contribute to the achievement of the increased capacity goals (mentioned on previous page) in the given timeframe. To do a pre-assessment of all areas prior to the auction will be too time consuming, hence the 50-50 split. On the other hand, there seems to be a bigger risk for the developers to bid on the not pre-assessed but based on feedback from some developers they think they have gained enough experience from other German offshore wind farms to manage this higher risk for the not pre-assessed areas. Reference is also made to section 4.3 **Error! Reference source not found.**

Note: It needs to be highlighted that this is a new tender process for offshore wind in Germany and based on the new WESA2023 that will apply for auctions starting in 2023 and onwards, hence no practical experience exists. In addition, different working groups of the German government are still detailing the act in terms of criteria weighting and ranking as well as preparing an application guideline.

To highlight the change in the German tender model: Until now the bidder with the lowest subsidy requirement for an offshore wind farm has been awarded the contract. No other award criteria/ pre-qualification apart from financial standing.

⁶ German: zentral voruntersuchte Flächen

⁷ German: nicht zentral voruntersuchte Flächen

⁸ BSH: Bundesamt für Seeschifffahrt und Hydrographie = Federal Maritime and Hydrographic Agency

4.1.1 Applicable tender models in Germany

Centrally pre-assessed areas

For the centrally pre-assessed areas the bidder with the highest score will be awarded for the upcoming auctions in 2023.

The process is controlled by the Bundesamt für Seeschifffahrt und Hydrographie (BSH), engl. Federal Maritime and Hydrographic Agency of Germany).

The following information is provided by BSH for *centrally pre-assessed areas*:

- > Studies on the marine environment are conducted and documented – according to BSH standard “*Investigation of the impacts of offshore wind turbines on the marine environment*”.⁹ These are needed for an environmental impact study in the planning approval process for the construction of offshore wind turbines and are required and independent of the later design of the project.
- > Pre-assessment of soil conditions
 - > according to BSH standard “Ground investigations for offshore wind energy –
 - > Minimum requirements for geotechnical surveys and investigations into offshore wind energy structures, offshore stations, and power cables”.¹⁰
- > Reports about wind and sea conditions.
- > Information about marine traffic.

The WESA2023 implements award criteria: Bidding price and quality.

The following table shows criteria as well as maximum number of points that can be achieved. This is given by the WESA2023:

No.	Criteria	Max. points
1.	Bid value [€]	60
2.	Quality:	40
2a.	Contribution to decarbonization for offshore wind energy	10
2b.	Amount of energy produced	10
2c.	Noise emission during foundation installation and seabed area that is covered by the foundation structure	10
2d.	Contribution to secure skilled workers	10

The fulfilment of the criteria is evaluated using points (evaluation points). A margin of appreciation is granted when evaluating the bids. The BSH can ask questions about the bids to which the bidder has two

⁹ [BSH - Publications](#)

¹⁰ [BSH - Publications](#)

weeks to answer. The BSH may extend this deadline if the questions and/or answers are deemed too complex to cover within the given timeframe. If questions are not answered in due time or are insufficiently answered, the BSH is eligible to subtract points from the bidder.

In the below section the evaluation criteria are described in more detail. This is taken directly from the WESA2023. This is available in German only. However, it is **expected that the BSH will issue additional explanation and interpretation guidance prior to the first auctions starting in 2023 and onwards.**

- > **1. Bid value:** The bid with the highest bid value (uncapped) receives the maximum score of 60 points.
- > **2a. Contribution to decarbonization:** The contribution to decarbonizing the energy sector by expanding offshore wind energy is based on the ratio between the use of unsubsidized electricity from renewables to the total electricity requirement.
 - > The use of green hydrogen for the total energy requirement of the manufacturing process (for offshore wind turbines) that is not covered by electricity. The maximum score of 5 points for unsubsidized electricity from renewable energy sources is awarded to the bidder with the highest proportion of unsubsidized electricity from renewables in the manufacturing process.
 - > The maximum score of 5 points for green hydrogen is awarded to the bidder with the highest proportion of green hydrogen in the manufacturing process.
- > **2b. Amount of energy produced:** The maximum score of 10 points is awarded to the bidder whose energy supply contract (with the grid owner) covers the highest proportion of the energy to be supplied in relation to the total electricity generation.¹¹ I.e. the bidder who is able to sign an energy supply contract (for the offshore wind farm in question) with the grid operator and at the same time covering (in the contracts) the highest amount of energy to be sold compared to the theoretical energy that can be produced by the offshore wind farm in question, gets a score of 10 points.
- > **2c. Noise emission during foundation installation and seabed area that is covered by the foundation structure:** The assessment is based on the introduced noise pollution associated with foundation technologies and the sealing/covering of the seabed. The maximum score of 10 points is awarded to the bidder with the highest proportion of installed foundations not affected using either impulse driving or gravity-based foundations. The number of points for all other bids is calculated from the quotients of their respective share of the installations that do not use either impulse driving or gravity-based foundations compared to the winning bid within this criterion.
- > **2d. Contribution to secure skilled workers:** The contribution to securing skilled workers (German: Fachkräfte) is based on the ratio of apprentices rated as employees subject to social security contributions at the time the bid was submitted in a comparable legally secure manner. The maximum score of 10 points is awarded to the bidder with the highest quote of trainees. The points of the other bids are calculated from the quotient of their respective trainee quota and the trainee quota of the bidder with the highest trainee quota multiplied by the maximum points. The bidder provides the

¹¹ The scale of the delivery of energy generated on the advertised area is based on the proportion of the total amount of energy that is expected to be supplied and assessed against the total power generation. The calculation of total power generation is done by multiplying the power that is expected to be installed by offshore wind turbines on the respective area with average full-load hours of 3,500 hours per year over a service life of 25 years. The calculation of the total expected to be delivered amount of energy is obtained by multiplying the annual amount of electricity to be supplied by the respective contract period in years. To evaluate the proportion of the amount of energy to be delivered to the total electricity generation is, the quotient of the total amount of energy expected to be supplied and the total electricity generation formed as a percentage.

number of trainees and the number of employees subject to social security contributions by a self-declaration. Upon request, trainees will be informed about the submission of an anonymous training contract or in a comparable legally secure manner. The purpose of this, is to force companies to hire trainees so they can become skilled workers in the future. The bid needs to contain the following information:

- > Complete name, legal entity, and registration of the bidder.
- > Statement that the authorities can use the submitted information to evaluate the bid.
- > Bid value in Euro (without decimal places, not allowed to be negative).
- > Name of the area for which the bid is valid.
- > *Project description* describing the fulfilment of the award criteria.

The *project description* must cover at least:

- > The ratio between unsubsidized electricity from renewable energy sources and the total electricity requirement.
- > Total energy required for producing green hydrogen.
- > Proof of future energy supply volume generated on the tendered area, which is provided by one or several mutually signed declarations with another company.
- > The number of foundations (in relation to the total number of foundations) that are neither installed by using impulse pile driving nor being gravity-based foundations.
- > The ratio of trainees to employees subject to social security contributions at the time of the bidding.

In the event of a tie (same number of total points) between several bidders, the bid with the highest bid value wins the contract. If bid values are equal, BSH gives the bidders the opportunity to increase their bid value. If several identical bid values are offered again, the process of asking bidders to increase their bid is repeated. This continues until only one bidder is willing to increase their bid, or until one bid value exceeds the others'.

The BSH must announce the winning bidder within 4 months from the bidding date.

A guarantee paid by developer is determined by the bid volume multiplied by 200 euros per kilowatt of power to be installed. All bidders must deposit a guarantee of 25 per cent of the total amount up to the respective bid date with the Federal Network Agency. The winning bidder also has three months after award of the contract to deposit the remaining 75 per cent with the Federal Network Agency.

The winning bidder must pay 90% of the bid value to the responsible Transmission System Operator, TSO (to reduce the costs of energy), 5% to offshore nature reserve fund and 5% to fishery fund. Both are part of federal budget and to be paid within twelve months.

The overall time schedule for the project (covering development to commissioning) is stated in the tender documents.

Not centrally pre-assessed areas

For the not centrally pre-assessed areas the bidder with the lowest price is awarded. The process is controlled by the German Federal Network Agency¹².

The maximum remuneration for offshore wind energy is regulated in the WESA2023: Reports about wind and sea conditions.

- > Auctions taken place in 2021: 7.3 €ct/kWh.
- > Auctions taken place in 2022: 6.4 €ct/kWh.
- > Auctions taken place in 2023 and onwards: 6.2 €ct/kWh.

The Federal Network Agency can, at the time of publication, set a new maximum value based on the existing economic conditions for the construction and operation of offshore wind turbines and of the expected technological progress. The new maximum value may not be more than 10% higher than the original maximum value.

A monetary guarantee is determined by the bid volume multiplied by 100 euros per kilowatt of power to be installed. All bidders must deposit a guarantee of 25 per cent of the total amount up to the respective bid date with the Federal Network Agency. The successful bidder also has three months after award of the contract to deposit a guarantee with the remaining 75 per cent with the Federal Network Agency.

The bid needs to contain the following information:

- > Complete name, legal entity, and registration of the bidder.
- > Statement that the authorities can use the submitted information to evaluate the bid.
- > Bid value in Euro Cent/kWh.
- > Name of the area for which the bid is valid.
- > Proof that for a period of at least 5 years a minimum of 20 per cent of the announced tender volume¹³ is marketed through electricity supply contracts to one or more companies; the proof is provided by one or more mutually signed declarations with another company, and future supply contract to be complete.

If several bidders have bids for an area with a bid value of 0 Euro Cents/kWh submitted, the Federal Network Agency does not award the contract, but runs a dynamic auction/bidding process as described in the section “Dynamic bidding process” on the next page.

The Federal Network Agency determines the detailed rules of a dynamic bidding process before it announces the auctions.

¹² Bundesnetzagentur

¹³ According to the tender documents which are issued by Bundesnetzagentur.

Dynamic bidding process

- > All bidders who place a bid with a bid value of 0 Euro Cents/kWh can attend.
- > The dynamic bidding process regularly consists of several bidding rounds with increasing bid levels. Bidders here pay a second submit bid component. The second bid component is in Euros per megawatt of the tender volume in the advertised area. Before each bidding round, the Federal Network Agency determines a bid level (how and why will be explained by the Federal Network Agency beforehand) and informs the bidders who are eligible to participate in the upcoming bidding round of the bid level and the number of eligible bidders.
- > To advance to the next bidding round, bidders must submit their bids within the bid deadline and agree to the bid level by placing a bid to pay a second bid component equal to the submit bid level. The bids are not disclosed, and all bids are binding. If several bidders agree to the bid level, a new bidding round begins in which only these bidders participate. The Federal Network Agency continues the dynamic bidding process until there is only one bidder left that agrees to the bid level within the bidding deadline.
- > If a bidder is not ready to agree to the bid level, the bidder has the opportunity within the bid submission deadline to submit a bid whose second bid component is lower than the bid level. However, this must be higher than the bid levels of the previous bidding rounds (inter-round bid). If in one bid round none of the bidders agree to the bid level, the bidder with the intermediate round bid with the highest second bid component wins the contract. If multiple bidders give intermediate round bids with the same high second bid components or none of the bidders in a bidding round are within the bid submission deadline, the lot decides which bid will be awarded the contract. In case none of the bidders submits a bid within the bidding deadline, the Federal Network Agency draws between the latest bids submitted.

The winning bidder makes the payment to the second bid component according to the following paragraphs:

- > 90% of the *total amount* of the second bid component to the responsible TSO (to reduce the costs of energy).
- > 5% of the *total amount* of the second bid component to offshore nature reserve fund as part of the federal budget.
- > 5% of the *total amount* of the second bid component to fishery fund as part of the federal budget.

The *total amount* is obtained by multiplying the second bid component [€/MW] of the awarded bid with the auction volume of the advertised area.

The overall time schedule for the project from development to commissioning is set in the tender documents.

4.2 Pros and Cons of tender model in Germany

Tender models according to WESA2023 are yet to be implemented in Germany. The first auctions will be run in 2023, hence we are unable to share any experiences on pros and cons related to it at this point in time.

There are some good intentions in terms of meeting the set goals of installed offshore wind capacity, but it is difficult to say how efficient the new tender model is. It is also difficult to understand in detail how the auction processes will be executed in practice and which obstacles could occur during the tender process.

Therefore, different working groups of the German government are still working on detailing the act in terms of criteria weighting and ranking as well as preparing an application guideline. Hence, changes or adaptations of the WESA2023 should be expected before it comes into force.

However, we have discussed the new German tender model with stakeholders and these reflections are given in the next section.

4.3 Developer reflections on tender model in Germany

For Germany, identified stakeholders were approached for direct consultation. This was done through COWI's established personal and industrial networks, and through the established reference group. Agreeing on short video conferences our team of experts collected views from the following stakeholders:

- **Developers:** Ørsted, Vattenfall and RWE.
- **Authorities:** reached out too but with no specific input other than what is stated as public information.

Developers' reflections are shared below:

- > It is appreciated that the approval process will also be streamlined as part of WESA2023 to reduce the approval time by the authorities. Further details on what the streamlined processes are, are still to be decided and implemented by the authorities.
- > Multi award criteria for centrally pre-assessed areas are seen as positive, as not only the price is considered. However, it is deemed critical that the evaluation process of the quality criteria is currently untransparent.
- > To bid on centrally pre-assessed areas or not centrally pre-assessed areas is not seen as an advantage/disadvantage from a technical point of view; the consulted stakeholders, claim to have sufficient experience to prepare competitive bids for both options. However, it is perceived (for the developers) as riskier and more complex to plan for bids on not centrally pre-assessed areas.
- > The interviewed utility companies would have preferred that they could also tender for grid connection, which is currently not included in the tender for offshore wind farms.
- > WESA2023 refers to other acts and regulations. It would be appreciated to have one document that describes the whole tender process in detail.
- > It is claimed that the active Q&A process is not integrated in the bidding process for the centrally pre-assessed areas.

5 Offshore Wind Tender Schemes in Belgium

The situation until today is that under the Belgian federal system, each of the three regions (Flanders, Wallonia, and Brussels) has jurisdiction on its territory in various fields, including energy policy, except for nuclear plants and transmission network regulation (> 70 kV). For Belgium, Elia is the responsible TSO, and created the Modular Offshore Grid (MOG), Elia's offshore power hub. This is located 40 km off the Belgian coast, the switching platform bundles the export cables from four offshore wind farms together and transports the generated energy to the mainland via a shared transmission system.

Please note that COWI cannot provide detailed reflections on the tender model for Belgium since it has not been published yet. COWI have highlighted the areas the government of Belgium is focusing on and might integrate into a future tender model.

While the jurisdiction of the regions is territorial, the Federal State remains in charge of offshore activities. This explains why the legal framework for the development of offshore wind parks in Belgium is settled under Articles 6 and 7 of the Federal Act of 12 April 1999 organizing the Electricity Market (the Electricity Act).

Despite a relatively limited marine territory, Belgium has over the last decade been one of the most active European countries in the field of offshore wind projects. Approximately 238 km², (7 % of the Belgian North Sea area) were devoted to the production of renewable energy under the Marine Spatial Plan of March 2014. Consequently, by 2021 a total of 9 offshore wind parks were operational with up to 399 turbines installed and in operation with a total capacity up to 2,280 MW. This approximates to 10% of the Belgian installed generation capacity.

So far, **no tender process** has been used for offshore wind in Belgium. For the first offshore zone (developed between 2006-2020), consisting of 8 wind parks, concessions could be requested and were granted without a tendering process, according to Royal Decree of 20/12/2000.

The decree stipulates the conditions for concessions of offshore power production:¹⁴

- > Selection Criteria to be demonstrated by candidates (Article 2 of the decree).
- > Demonstrate its sound financial and technical capacity, should be registered in the EU, should not be within administrative exclusion, respond to technical criteria, demonstrate previous references, demonstrate technical means, provide CV and staff to carry on the works.
- > Award criteria (Article 3 of the decree): Technical and environmental conformity, quality of the project and implementation and maintenance plan, provisions for end-of-life dismantling (financial provision constitution).

The decree also describes the various processes for a candidate to introduce its request for concession, the documents, and formats to be provided, the examination process by the authorities, the rights and obligation of the awarded candidates.

Concession applications are submitted to the CREG (Electricity and Gas Regulation Commission- the Regulator), which passes its recommendation to the Minister for Energy. A domain concession can be granted before the environmental permit but will remain invalid until the environmental permit is formally

¹⁴ [Royal decree of 20/12/2000 \(openjustice.be\)](https://openjustice.be/royal-decrees/2012/2000)

issued. Finally, there is a cable laying procedure to be followed. Applications are submitted to the FPS for Economic Affairs, which passes its recommendations to the Minister for Energy. As described in article 7,9 and 10 of the Royal Decree, several firms can request concession for the same area, the authorities will inform the winner within 120 working days, based on the award criteria.

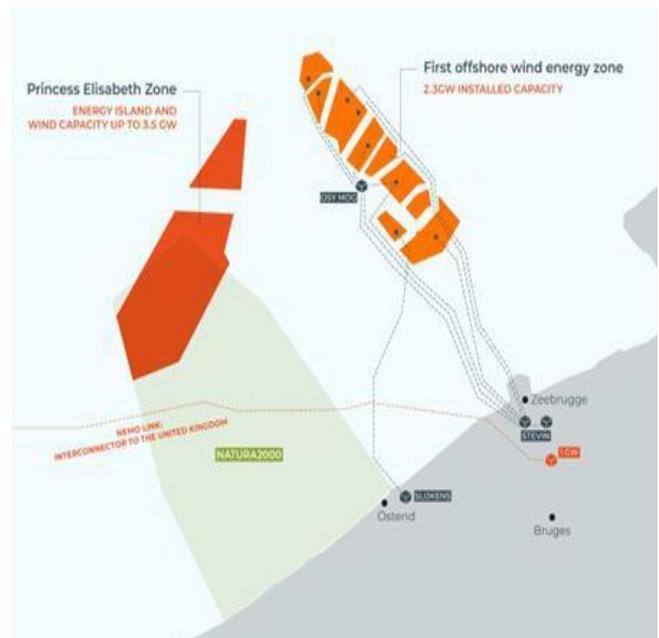
The concession should come together with all the relevant permits. Accordingly, each offshore project will need to go through a process to obtain an environmental permit. The applicant for a concession prepares and submits an environmental impact report (EIR) for their project proposal to the Management Unit of the North Sea Mathematical Models and the Scheldt estuary (MUMM). MUMM then carries out an Environmental Impact Assessment (EIA). The matter is also put to the public: A round of public consultations is held over a 45-day period in Belgium. Here, the potential also exists for cross-border effects consultations with the country in question.

Having considered this EIA and the results of the public consultation process, MUMM advises the federal minister for the Marine Environment. These recommendations relate to the project's acceptability for the marine environment and to any conditions that might be applied to make the project acceptable. The minister then decides whether to issue an environmental permit. The process takes about 6 to 8 months, from application to final ministerial decision, depending on the complexity of the case.

5.1 New development and new tender process in Belgium

A new law was put in place on 12 May 2019. It aims at accelerating the development of the new capacity and reducing the support cost by 1) organising competitive tender procedures¹⁵ 2) awarding bigger parcels 3) organising all preliminary studies (to be finalised by early 2023) to be shared with potential bidders.

Also in October 2021, the federal government decided to expand the capacity of offshore wind turbines in the Princess Elisabeth Zone (PEZ) with between 3.15 and 3.5 GW. This will triple Belgium's installed offshore wind capacity to 5.8 GW by 2030. Around 25% of the country's electricity production will come from the North Sea. There is an additional area of 285 km² (near the French border) dedicated to offshore wind production and renewable energy storage. The new area will be divided in 3 zones.



Provisionally, a tender for the first phase¹⁶, with a nine-month bidding window, is expected to be launched by the end of 2023 and winners announced early 2025. This bidding window is relatively long since it will be a new process for Belgium, which will take more time. It is expected that this bidding window will decrease at a later stage. For the first phase, the final commissioning date should not exceed 42 months after the announcement of the winning bid. Therefore, the envisaged installations will need to be delivered

¹⁵ selection and awarding criteria to be published early 2023, first tenders by fall 2023

¹⁶ Indicatively for a 0,7 GW capacity

mainly in 2027. (Note author: This period is relatively fast, it could be caused by the Belgian government want to show that they can act rapidly to meet the climate targets. Also note that the current Energy Minister is from the green party and pushes the green agenda very much).

The second and third tenders are currently planned to be launched in Q2 2025, with the aim of selecting winners by mid-2026 at the latest and commissioning in 2028 and 2029. The winner will automatically be granted all necessary permits based on its project proposal and will be awarded a 30-year domain concession (including construction, operation, and decommissioning).

Possible criteria for the new tender model in Belgium

For the development of the second zone, the Belgian government is currently looking into different tender mechanisms. The CREG was commissioned by the Minister of Energy to conduct a comparative study¹⁷ of some EU tender models for offshore wind (Denmark, UK, France, Germany, and the Netherlands).

Currently the 'support' possibilities of zero bid, 2-sided CfD and 2-sided CfD with a carve-out are being discussed. A public consultation has been held earlier this year, for which the results are yet to be published: Public consultation on the offshore wind tender for the Princess Elisabeth Zone.

2- Sided Call for Demand Mechanism

The variable price premium is calculated as follows: Price premium = strike/exercise price – market reference price where:

- > The exercise price is a fixed price as proposed by the applicant and is not indexed.
- > The market reference price is calculated for a 12-month period as an average of the electricity spot prices of the previous calendar year, which goes from 1st January to December 31.
- > The price premium is granted based on the energy injected.
- > The amount of the subsidy is zero if the imbalance rate applicable to a positive imbalance is equal to or less than -€20/MWh. To limit the risk, a ceiling, for example 72 hours, can be introduced at the level of the number of hours during which this measure applies. After the first 72 hours with negative imbalance prices for a positive imbalance equal to or less than - €20/MWh, the producer will be compensated if he has not injected during these hours.

This support mechanism could be prolonged from 15 years (in current Electricity Act) to 20 years to provide longer-term stability and payback time to the developers.

¹⁷ Published in June 2021, <https://www.creg.be/nl/publicaties/studie-f2247>

Zero subsidy/bid mechanism

- > The project income is dependent on market price.
- > Easier to manage than CfD model but riskier for developers with possibility of less bidders.
- > Projects could in principle participate in the current remuneration mechanism (see Green certificates below).

Possible Prequalification Criteria

The CREG study recommends the following prequalification criteria for the future Belgian tender model to encourage serious offers and to test technical and financial capacity:

- > Provide proof of technical experience: The candidate promoter (one or more members in the case of a consortium) has already produced at least 300 MW of offshore wind energy.
- > Demonstrate their financial strength by providing a note explaining their financing experience, have the necessary creditworthiness and provide a security deposit of 70 million euros.
- > Other criteria under consideration: Citizen participation (min 1% of the total investment cost), legal criteria related to tax and social situation (not in recovery, no outstanding tax, and social security debt).

Possible award criteria

The award criterion favoured by the CREG is the price: The candidate offering the lowest strike price wins the call for tenders and thus obtains the domain concession.

However, depending on the zone to be adjudicated (2-Cfd/Zero bid outside or inside of Natura 2000), additional selection criteria are proposed (70% weights to the strike price and 30% for the rest in case of 2-sided CfD) such as: Energy production (P50), citizen participation, local benefits, sustainability and multi-use, nature impact, innovation, and system integration. Currently, no more details are known.

For these a preliminary scoring system is suggested:

	2-sided CFD outside of Nature 2000	Zero Bid outside of Nature 2000	2-sided CFD inside of Nature 2000	Zero Bid inside of Nature 2000
Strike Price	70 points	0 points	70 points	0 points
Energy Production	0 points	0 points	5 points	17points
Citizen Participation	10 points	33 points	10 points	33 points
Local Benefits	5 points	17 points	5 points	17 points
Sustainability and multi-use	5 points	17 points	5 points	17 points
Nature impact	0 points	0 points	5 points	17 points
Innovation and system integration	10 points	33 points	0 points	0 points

5.1.1 Support Schemes to current concessionaires in Belgium

So far, the concessionaires of offshore wind in Belgium were selling their production to the grid and benefited from a specific support scheme for offshore wind projects, based on two instruments (as defined in the Electricity Act):

- > A Green Certificates scheme with a purchase obligation for the TSO for a period of 20 years (19 years for projects with financial close after 1 May 2016) at a minimum fixed price.
- > A levy on transmission tariffs to be charged by the TSO to the distribution system operators (DSO's) and holders of Access Contracts (non-technical take-off and injection agreement), ensuring the pass-through of the costs of the Green Certificates scheme to the end consumer.

In relation to minimum fixed GC price a distinction is made between offshore wind farms that reached financial close before 1 May 2014 and offshore wind farms that reached financial close thereafter. Offshore wind farms with financial close prior to 1 May 2014 can sell their Green Certificates to the TSO at a fixed minimum price of EUR 107 per MWh for the electricity that is generated from the first 216 MW of the installed capacity, and EUR 90 MWh for the electricity generated from any additional installed capacity. Offshore wind farms that reached financial close after 1 May 2014 can however sell their Green Certificates to the TSO at a fixed minimum price based on a Levelized Cost of Energy (LCOE), that aims to reflect the total annual costs, calculated over a period of 20 years, based on the generally applicable technological reference framework required to generate 1 MWh (CAPEX, OPEX, 12 % ROI). The LCOE is fixed by the Minister of Energy, based on a proposition by the Federal Regulator (CREG) following discussion with the holder of the domain concession. It shall consider the need to avoid over-subsidisation and the interest of the end consumer (e.g., for offshore wind farms RENTEL and NORTHER, respectively EUR 129.80 per MWh and EUR 124 per MWh). The minimum GC-price payable by the TSO to such offshore wind farms is the difference between the LCOE and:

- (i.) The reference electricity market price (with application of a correction factor), which is determined annually by the Federal Regulator based on the nominations of the ICE Index Power Baseload Futures.
- (ii.) The value of generated Guarantees of Origin.
- (iii.) A (monthly settled) correction factor for grid losses.

In 2005, additional supporting measures were added for new projects:

- > The financing by the TSO of up to one-third of the costs of the transmission cable to the onshore grid (purchase, delivery, installation, connection), with a maximum of EUR 25 million for projects of 216 MW and more (this amount is reduced proportionally for smaller projects).
- > Preferential balancing tariffs (plus or minus 10% of the reference market price) for variations of production up to 30% of the nominated production (positive or negative).
- > An investment guarantee in case of withdrawal of one of the authorisations, permits or permissions, or cessation of the project (in the absence of any fault, breach, negligence, etc. of the project developer).

To finance the burden of the GC scheme, an offshore surcharge, which applies to all end consumers, was introduced in 2012, with the parallel constitution of budgetary funds (Art. 7, § 1ter of the Electricity Act).

This was annually fed by two-thirds through the nuclear levy, to reduce the impact of the offshore supporting measures on end consumers.

In addition, the financial support for the transmission cable was amended in 2012, 2013, 2014 and 2016, considering the plans to develop a Belgian offshore grid that will reduce transmission costs for future projects.

Once competitive call for tender will be in place for the development of the second offshore wind zone, the GC scheme will be dismantled.

5.2 Developer views of tender model in Belgium

For Belgium, identified stakeholders were approached for direct consultation. This was done through COWI's established personal and industrial networks, and through the established reference group. Agreeing on short video conferences our team of experts collected views from the following stakeholders: Developers: **DEME, Windpark**. Authorities: **The Belgian association for offshore platform and the Energy Regulator (the CREG)**. The input received from the stakeholders was quite limited.

The Belgium authorities have decided to develop the next offshore zone (Princess Elizabeth) using a competitive tender model instead of the concession applications used to develop the first zone. The competitive tender model process should accelerate the development and implementation of the second zone. As explained above the details and criteria of the tender model to be selected and used is still to be decided and announced. As there is not yet a decision on the tender model to be adopted officially in Belgium, neither developers contacted¹⁸ or authorities¹⁹ were able/willing to share experience or comment on the expected new model or on the previously in place old concession application process.

5.3 COWI Reflections on tender model in Belgium

Following the comparative study performed by the Regulator in 2021 and inspired by its neighbouring countries, Belgium is committed to develop and apply a competitive tendering model to build the next phase of Belgian offshore wind development zone. As stated above, the aim of the Belgian authorities is to publish the first call for tenders for the fourth quarter of 2023, so that the first new offshore wind installations in the "Princess Elisabeth zone" could be commissioned in 2026-2027, with the first wind turbines running in 2028. The timeframe is perhaps a bit optimistic, but at this point in time it is still too early to judge if this is feasible or not since it is not clear what actions the Belgian authorities will set out.

The new tender model is based on parameters the Belgian authorities deem important for Belgian citizens:

- > It will be based not only on price, but also on additional criteria as sustainability, nature, and innovation.

To date the result of the public consultation on the new tender model have not been published. However, it serves to clarify and choose which pre-qualification and selection criteria should be met by future developers. It also should indicate which support model is deemed the most adequate.

¹⁸ Parkwind, DEME, Belgium Offshore platform

¹⁹ The CREG

6 Offshore Wind Tender Schemes in The Netherlands

This section introduces the offshore wind tender scheme in The Netherlands. After a brief general introduction, a brief overview of the offshore wind tender models and regulation will be presented. Afterwards, the most recent tenders will be described in more detail since these have a specific approach (additional legal text and awarding criteria). Finally, before going into some reflections, the pros and cons of the Dutch tender model will be described.

6.1 Introduction to the tender models in The Netherlands

The Dutch government plays a central role in the planning and zoning of offshore wind parks: The Netherlands Enterprise Agency (RVO) is responsible for the site selection, the tender for the permit to develop and exploit the offshore windfarm, and the communication. The Ministry of Economic Affairs and Climate Policy is responsible for the policy rules, the Ministerial Order for the permit tender, and dealing with the Transmission System Operator (TSO). Rijkswaterstaat (implementing organisation of the Ministry of Infrastructure and Water Management) is responsible for the permit conditions.

The National Water Plan (NWP2) provides the legal basis for the appointment of designated areas for offshore wind. The development of offshore wind farms (OWFs) will be restricted to these locations in a site decision (in Dutch: kavelbesluit); wind permits will not be awarded for areas outside these designated areas. This is captured in an Offshore Wind Energy Roadmap.

The site decision has some terms and conditions in relation to the rights and interests of third parties regarding the relevant site. It also has some conditions regarding the costs incurred for the preparation of the site decision, including the conduct of relevant surveys and the required security for decommissioning, but it does not implicitly accommodate cross-border collaboration via hybrid assets.

More recently, in a letter from 21 June 2022 to the Chair of the House of Representatives, the minister of Climate and Energy Policy R.A.A. Jetten indicated that The Netherlands has major climate ambitions and wants to be self-sufficient in energy for geopolitical reasons. In the Climate Act (Klimaatwet), the Government therefore stipulates that by 2030 The Netherlands will reduce its carbon emissions by 55 per cent, compared to 1990 levels, and be climate neutral by 2050, alongside focusing on more energy generation from wind and solar. The Government is doubling its target for offshore wind energy, increasing it to an installed capacity of approximately 21 GW by 2030, provided this is compatible with the ecological capacity of the North Sea and can be integrated into the energy system²⁰. This doubling is in line with the European Commission's call on Member States to accelerate development of energy from renewable sources.

6.2 Steps in the tender process

This section gives a brief overview of the steps in the tender process²¹: From designating the wind farm zones, up to the tender itself. Pre-tender steps are as follows:

- > **Designation of the wind farm zones** - The designation of new wind farm zones is defined in the National Water Programme. The North Sea Programme, which forms part of this, can be viewed as the integrated vision for the Dutch section of the North Sea. This programme provides an initial picture of the locations of the offshore wind farms. A specific challenge related to wind farm zones is to find

²⁰ RVO indicated that these are two topics that are deemed most relevant at this time. For future tenders, the focus might shift to other topics.

²¹ Text and information taken from <https://www.noordzeeloket.nl/functies-gebruik/windenergie/voorbereiding-wind-parken/>

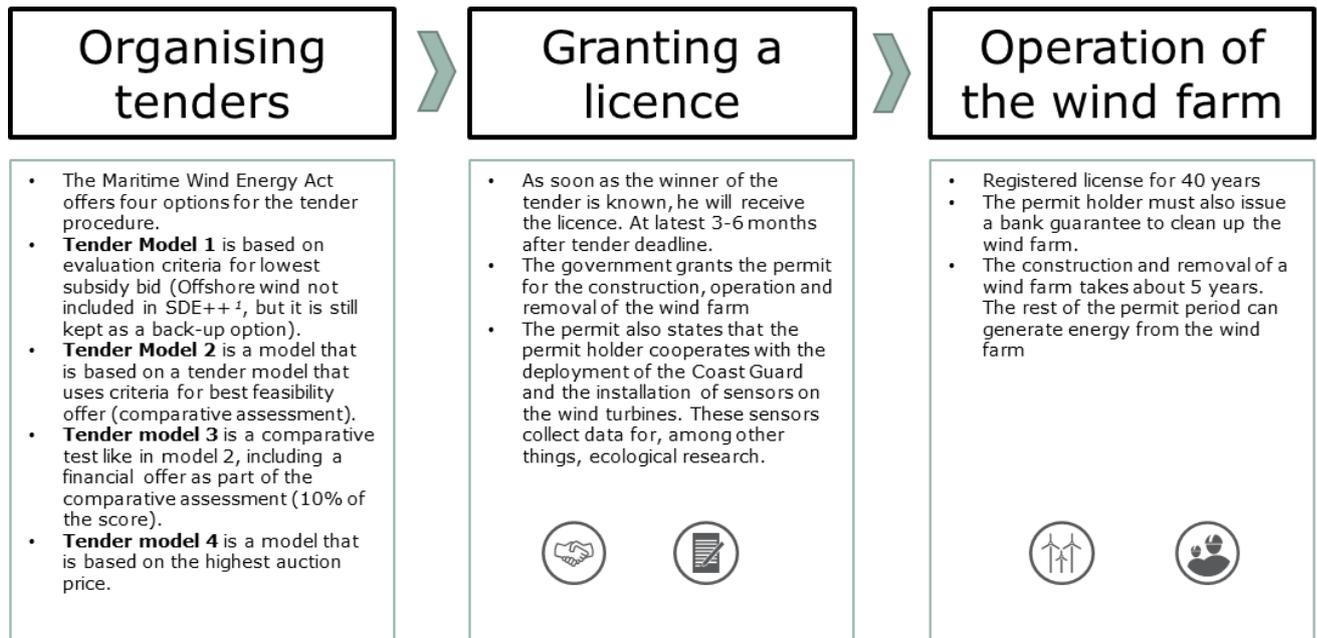
locations within the framework of the spatial assessment in which, for instance, the wind speeds and seabed situation are favourable and, at the same time, ensure that they do not impinge on other activities in the North Sea.

- > **Drafting the Road Map** - The Ministry of Economic Affairs and Climate Policy drafts an 'Offshore Wind Energy Roadmap'. This highlights when a wind farm (or a specific part of a wind farm) will be under construction. Spatial developments in terms of other uses of the North Sea are also assessed, such as oil and gas production. Figure 5-2 illustrates the visual part the roadmap with the status as of June 2022. Figure 5-3 presents the sequence for development of offshore wind energy until 2030.
- > **Preliminary allocation of sites** - It is often the case that the designated wind farm zones are not exclusively used for wind energy. It is necessary to consider the existing use and infrastructure. Therefore, the first step is to make preliminary sketches showing one or more sites within each designated wind farm zone. The final allocation of the site can still change up to the site decision, depending on the outcome of ongoing research and new insights.
- > **Research** - Extensive research on the features and existing use of a wind farm zone is used to map out any preliminary site. The research results are published and contains important information to the developers on for example wind speed, water depth, wave height, condition of the seabed, archaeology, and the presence of shipwrecks and unexploded ordnance (UXO). These location studies are carried out by market parties on behalf of the RVO.
- > **Preparatory work for connection to the electricity network (offshore grid)** - To bring the wind energy produced at sea onto the land, electricity cables must be laid from an offshore wind farm to a high voltage station on land. The first step in this process is to draft a so-called Exploration of Cable Landing Points for Offshore Wind Energy (Dutch acronym: VAWOZ). This exploration allows the Ministry of Economic Affairs and Climate Policy to decide which connections from a wind farm zone to the coastline require initiation of a planning procedure. The preparatory work and the subsequent cabling may take between eight and ten years, depending on the technology used and the distance from the wind farm to the high-voltage station on land. For the Netherlands, this is the responsibility of the TSO, TenneT.
- > **Site decision (including Consultation/participation)** - A site decision determines the conditions under which a wind farm may be constructed and operated within a site as designed. A site decision also covers the considerations in the context of the Nature Conservation Act. This relates to the assessment and review of the impact of the envisaged wind farm on protected species and habitats of Natura 2000 areas. An Environmental Impact Assessment (EIA) is drafted to facilitate the decision-making process.²² The legal framework for a site decision is the Offshore Wind Energy Act. A site decision is open to appeal.
- > After the site decision has been made, **the tender** can be organised. The relevant steps are highlighted in Figure 5-1. The permit/license to build and exploit the offshore windfarm must be granted 3-6 months after closing of the submission deadline.
- > To get the permit, the developer must provide a deposit or a **bank guarantee** as security for the construction of an offshore wind farm. If the developer has not performed the activities specified in

²² The EIA is the responsibility of the government, they commission a third party to execute this.

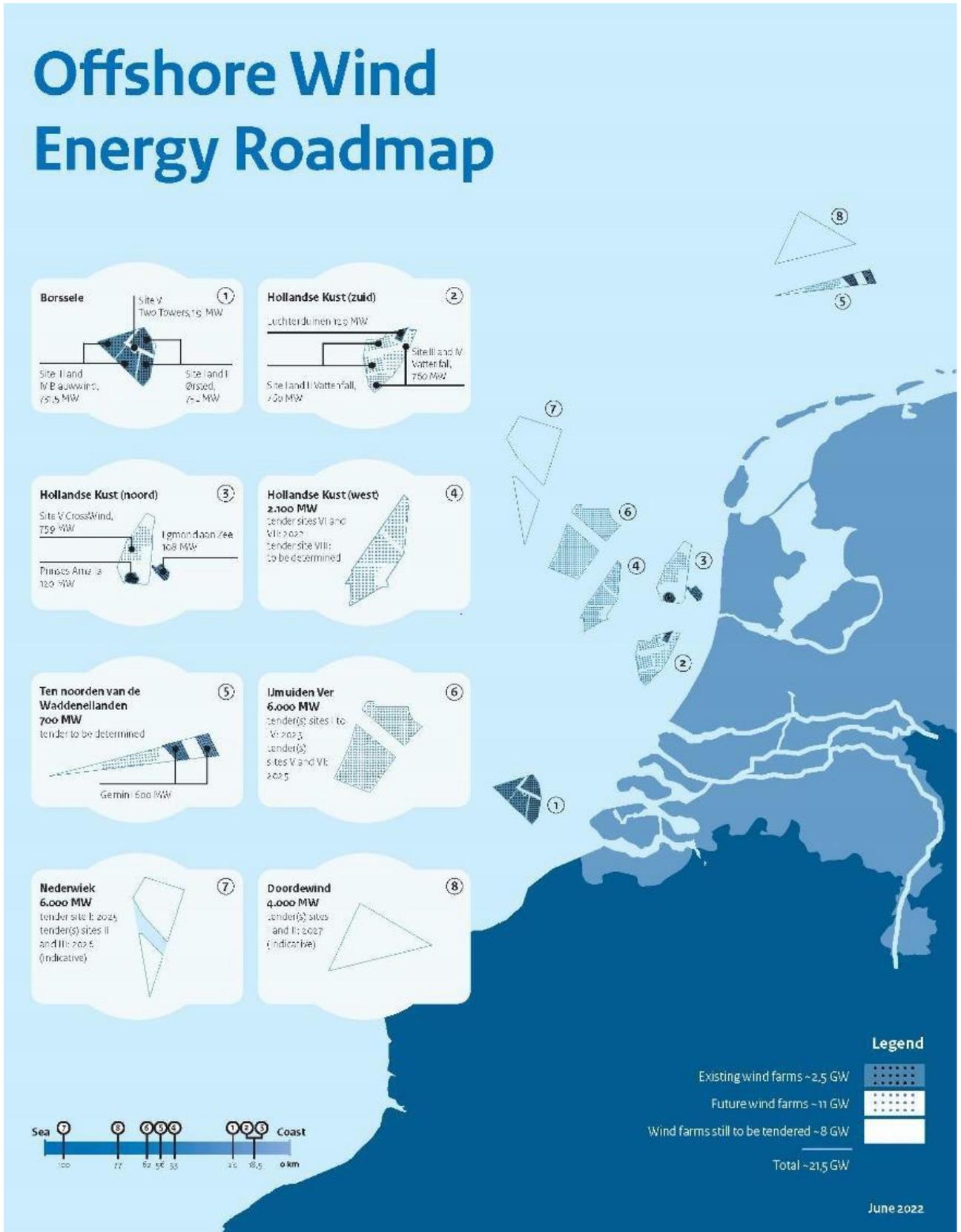
the permit (such as the conditions on which the permit was issued) within the specified period²³, part of the bank guarantee may be forfeited (which will increase per month thereafter). In addition, the license may be amended or revoked if the information provided with the application appears to be so incorrect or incomplete that a different decision would have been made (during the tender assessments) if this information had been known at the time of the assessment.

Figure 5-1 Tender steps in the Dutch offshore Wind Scheme



²³ This is not a defined period and depends on the criteria. For example, in the tender for Hollandse Kust West VI, it is stated that the implementation of the investment or innovation on the ecological aspect of the permit must be finalized within 60 months after the permit has been given.

Figure 5-2 Offshore Wind Energy Roadmap, with an indication of the existing and future wind farms.



Source: <https://english.rvo.nl/sites/default/files/2022/06/WOZ-Routekaart-June-2022.pdf>

Figure 5-3 Sequence for development of offshore wind energy²⁴

Capacity (GW)	Wind Farm Zone, Site(s)	Tender for sites	(Expected) commissioning date of wind farm	Status
0.75	Borssele, Sites I and II	Implemented in 2016	2020	
0.75	Borssele, Sites III, IV and V	Implemented in 2016	2020	
0.76	Hollandse Kust (zuid), Sites I and II	Implemented in 2017	(2022-2023)	
0.76	Hollandse Kust (zuid), Sites III and IV	Implemented in 2019	(2022-2023)	
0.76	Hollandse Kust (noord), Site V	Implemented in 2020	(2023)	
approx. 0.7	Hollandse Kust (west), Site VI	Implemented in 2022	(2025-2026)	
approx. 0.7	Hollandse Kust (west), Site VII		(2025-2026)	
approx. 1.0	Ijmuiden Ver, Site III	Fourth quarter of 2023	(2028)	
approx. 1.0	Ijmuiden Ver, Site IV		(2028)	
approx. 1.0	Ijmuiden Ver, Site I		(2029)	
approx. 1.0	Ijmuiden Ver, Site II		(2029)	
approx. 1.0	Ijmuiden Ver (noord), Site V	Second quarter of 2025	(2029)	
approx. 1.0	Ijmuiden Ver (noord), Site VI		(2029)	
approx. 2.0	Nederwiek (zuid), Site I		(2030)	
approx. 2.0	Nederwiek (noord), Site II	2026*	(2030)	
approx. 2.0	Nederwiek (noord), Site III		(2031)	
approx. 0.7	Hollandse Kust (west), Site VIII	2026/2027**	TBD**	
approx. 0.7	Ten noorden van de Waddeneilanden, Site I	2026/2027*	(2031)	
approx. 2.0	Doordewind, Site I	2027*	(2031)	
approx. 2.0	Doordewind, Site II	2027*	(2031)	
Realised:  Under construction:  Scheduled: 				

Source: <https://english.rvo.nl/sites/default/files/2022/07/Development-Framework-Offshore-Wind-Energy-June-2022.pdf>

²⁴ The third column "Tender for sites" refer to when tenders are either expected to be published, or when indicated as implemented: when developers have delivered their tender.

6.3 Offshore Wind Energy Law

The Offshore Wind Energy Act provides a comprehensive framework for realizing wind energy projects in the North Sea. The Act provides for the allocation of sites where wind farms may be built. For each of these sites, an exclusive permit is granted to a potential wind farm operator. Most recently, applications for a permit for Hollandse Kust West (HKW) wind farm zone site VI or site VII were submitted to the Minister of Economic Affairs and Climate Policy in June 2022. There are specific additional regulations and criteria defined in tender specific site decisions. These regulations are specified in the "Regulation granting permit wind energy area HKW VI and VII".²⁵ The relevant details are further elaborated in this section.

Summarizing the Dutch Offshore Wind tender models

Figure 5-4 presents a simplified schematic overview of the Dutch Offshore wind structure as presented in the previous sections. The following section goes into more detail on the criteria and ranking.

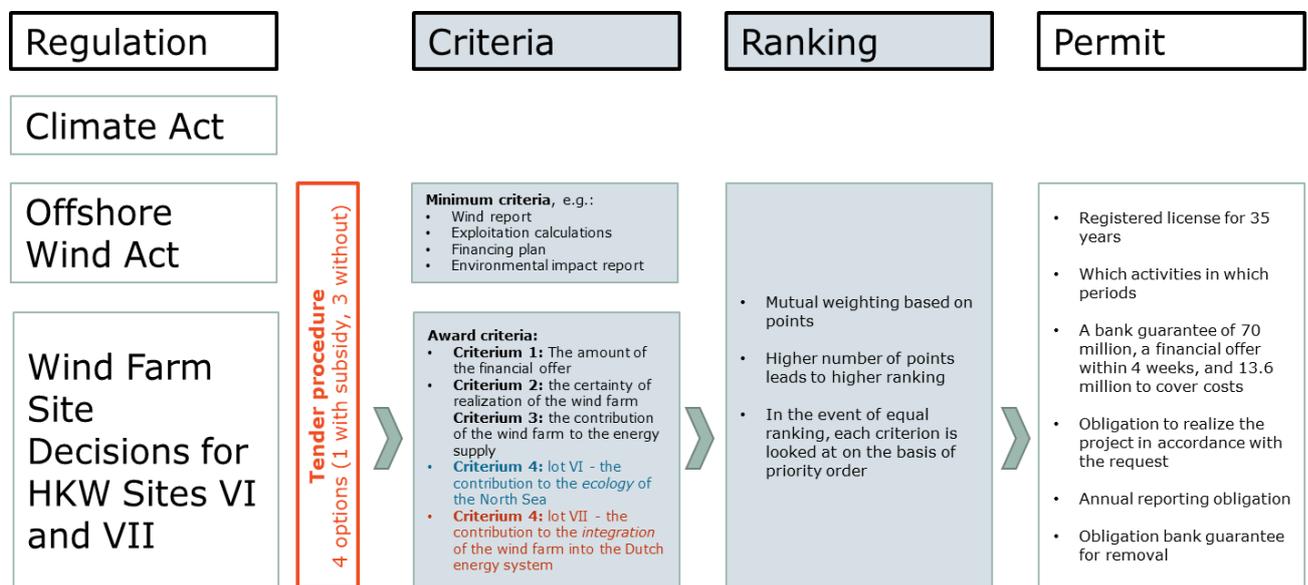


Figure 5-4 Overview Offshore Wind in The Netherlands

Source: COWI, based on document review.

²⁵ Regulation granting permit wind energy area HKW VI and VII - [wetten.nl - Regeling - Regeling vergunningverlening windenergiegebied Hollandse Kust \(west\) kavel VI - BWBR0046407 \(overheid.nl\)](https://wetten.nl/Regeling-Regeling-vergunningverlening-windenergiegebied-Hollandse-Kust-west-kavel-VI-BWBR0046407-overheid.nl) & [wetten.nl - Regeling - Regeling vergunningverlening windenergiegebied Hollandse Kust \(west\) kavel VII - BWBR0046405 \(overheid.nl\)](https://wetten.nl/Regeling-Regeling-vergunningverlening-windenergiegebied-Hollandse-Kust-west-kavel-VII-BWBR0046405-overheid.nl)

6.3.1 Minimum and Award Criteria in Offshore Wind tender model

To be able to be selected as a tenderer for the offshore wind permit, the developer or joint venture must at least meet the **minimum criteria**. These are defined in article 14 of the Offshore Wind Act:

- > *A permit can only be granted if it is sufficiently plausible based on the application that the construction and operation of the wind farm:*
 - > *Can be executed.*
 - > *Is technically feasible.*
 - > *Is financially feasible.*
 - > *Can be started within four years of the date on which the permit has become irrevocable.*
 - > *Is economically feasible within the period specified in the permit.*
 - > *Complies with the site decision.*
- > *By ministerial regulation, rules may be laid down regarding the assessment criteria referred to in the first paragraph.²⁶*

Documents required can be dependent on the lot that is being tendered, but always include:²⁷

- > Summary description of the realisation, operation and dismantling of the wind farm.
- > Wind report.
- > Exploitation calculations (standard excel file provided and publicly available).
- > Financing plan.
- > Table with wind turbine data and locations of site.
- > Overview of the knowledge and experience of the parties involved.
- > Parent Company Guarantee.
- > Environmental impact report for foundation (only needed when the foundation is other than a monopile, tripod, jacket, gravity based, or suction bucket).

Besides the minimum criteria for potential tenderers, the Dutch system also includes specific **award criteria**, depending on the site. These are indicated in the earlier mentioned Wind Farm Site Decisions, which can be more detailed for a specific site.

The Dutch tender scheme and granting of the offshore wind permitting scheme in the Netherlands is flexible in the sense that it has 4 different tender models that are all available. Each of these can be used, depending on the actual needs, as is mentioned in the Offshore Wind Act.²⁸ The authorities can decide which model to use case by case. This section briefly describes the four models.

Tender **Model 1** is based on evaluation criteria for lowest subsidy bid.

Tender **Model 2** is a new model based on a tender model that uses criteria for best feasibility offer (a comparative assessment where more qualitative and quantitative criteria are used). In this tender model, the bidders are evaluated based on a differentiated feasibility assessment.

Tender **Model 3** is a comparative test like in model 2, but with a financial offer. Bidding parties therefore offer a sum of money for the right to exploit the lot in question. This is capped at 50 million EUR in the

²⁶ Offshore Wind Act - [wetten.nl - Regeling - Wet windenergie op zee - BWBR0036752 \(overheid.nl\)](https://wetten.nl/Regeling-Wet-windenergie-op-zee-BWBR0036752)

²⁷ Relevant documents for applying for a permit for offshore wind: [VerGUNningsaanvraag indienen kavels VI en VII \(HKW\) \(rvo.nl\)](https://www.rvo.nl/VerGUNningsaanvraag-indienen-kavels-VI-en-VII-(HKW))

²⁸ [wetten.nl - Regeling - Wet windenergie op zee - BWBR0036752 \(overheid.nl\)](https://wetten.nl/Regeling-Wet-windenergie-op-zee-BWBR0036752)

latest tender²⁹. The offshore wind act allows for the formulation of additional rules to the legally required criteria, additional criteria, and additional rules to the mutual weighing of criteria.

Tender **Model 4** is a model that is based on the highest auction price. In this model, the winning bidder is the bid with the highest 'negative subsidy' bid. In other words: how much are developers willing to pay to develop the offshore wind farm.

In the two most recent tenders in 2022 (HKW VI and HKW VII), model 3 was used and included specific criteria on ecological capacity for one tender, and on integration into the Dutch energy system in the other. This tender model will be used as the basis of our literature review. In addition, we have liaised with stakeholders in our network to qualify the introduced changes in terms of support and financial compensation models, award criteria, and tender process.

Support Schemes in Netherlands

Model 1 of the available tender schemes describes a model with subsidy. The SDE+ scheme from 2020 (a subsidy scheme for stimulation of sustainable energy production and climate transition) focuses on the large-scale rollout of technologies for renewable energy production and other technologies that reduce carbon dioxide (CO₂) emissions including offshore and onshore wind. Please note however that from 2022 onwards, this has been replaced with SDE++³⁰ and does *not support* offshore wind energy. The main reason for this is that in previous tenders with a subsidy, they received only proposal without a subsidy. This indicates that the current market conditions for developing offshore allows for a tender without subsidy. In an interview with the Dutch authorities, it was indicated that this model is kept as a back-up option if needed in the future.

Regarding the tender: It is good to note that in general, bidders for the tender can provide more than one bid, but this can be restricted by the authorities to prevent receiving too many bids from one developer or joint ventures.

6.3.2 Recent tenders

The recent tenders HKW VI and HKW VII from 2022 were based on model 3. The decision to use this model is based on an assumption that the business case of offshore wind is not positive enough to warrant an auction (model 4) based on financial bid only. The regulation granting permit wind energy area HKW VI and VII explains this choice further:

*"... the market conditions were examined prior to the choice of a procedure and consultations were held with the Minister of Finance. Despite the fact that auctioning is currently a step too far for the business case of offshore wind energy (Afray, 2020) in view of the uncertainty about the future demand for renewable electricity and the cannibalization effect, this plot represents a significant market value. In order to provide insight into the relationship between costs and revenues and considerations and to permit the plots at a fair(er) price, the addition of a carefully designed financial offer is desirable."*²⁵

In this section, the award criteria as detailed in the Wind Farm Site Decisions for HKW Sites VI and VII are presented. Developers already submitted their proposals on the 12th of May 2022 and the winner of the tender will be announced later this year. In total, following the legal framework, it will take up to 3-6 months to announce the winner. For the HKW VI and VII tenders, the government decided to focus the

²⁹ RVO indicated that the amount of the financial bid is determined per tender, based on the prognosed market value. This amount could therefore be higher (but also lower) in future tenders.

³⁰ Subsidy Scheme: [Stimulation of sustainable energy production and climate transition \(SDE++\) | RVO.nl](#)

tender on motivating integral market-solutions to two of the largest challenges that further rollout of offshore wind energy currently face: Careful integration within the ecosystem of the North Sea and integration within the energy system. The tender on HKW VI has a specific focus on the ecology, whereas the tender on HKW VII has a focus on system integration. There were four additional award criteria stated for these two sites:

- > Criterion 1: The amount of the financial offer (20 points awarded for maximum amount of 50 million EUR).
- > Criterion 2: The certainty of realization of the wind farm (40 points, multiple criteria on expertise, knowledge, and financial guarantees).
- > Criterion 3: the contribution of the wind farm to the energy supply (40 points, based on the P50 value).³¹
- > Criterion 4: Site VI - the contribution to the ecology of the North Sea (100 points).
- > Criterion 4: Site VII - the contribution to the integration of the wind farm into the Dutch energy system (100 points).

The earlier mentioned "Regulation granting permit wind energy area HKW VI and VII"²⁵ contain detailed tables on these criteria. These can be found in Appendix A. These tables give more insight in how the four criteria are measured and how these elements are scored.

Regarding **critterion 1** (The amount set for the **financial offer**), the regulations for the permit for the sites Hollandse Kust West VI and VII state the reasoning behind the inclusion of a financial offer. Taking this into account, for each tender, it is determined through which tender model the site is granted a permit: subsidy award, comparative test, comparative test with financial bid, or auction. The amount of the financial bid (if a comparative test with a financial bid is chosen) will also be determined per tender. This amount could therefore be higher (but also lower) in the future. In June 2022 there was an additional letter on the development framework for offshore wind energy³² where the roadmap until 2030 was introduced. This comes along with a financial package of 1.69 bn EUR of structural and incidental costs. A more detailed update on this will be published in October 2022.

Regarding **critterion 4**, this is more subjective (i.e. subjective understood in terms of a sound, justified and transparent professional deliberation within the evaluation framework set), and therefor harder to score than the first three criteria. In general, there is a fear with authorities that more subjective criteria might lead to lawsuits. In The Netherlands, there are no lawsuits regarding the multiple criteria so far. The risk can also be mitigated by having a clear, well-documented process. In that sense, when somebody decides to go to court, there is proof that the authorities followed the procedures to the letter.

Even though there are no lawsuits, developers that were not selected, did ask to receive all information leading to the final decision on who won the bid.³³ The authorities suspect that the reason developers are asking for more information is not to question the procedure itself, but to strengthen their position for future tenders. Developers were asked by the Dutch authorities if they would prefer a financial auction to diminish the risks, which was responded to with negative answers.

³¹ The P50 figure is the average level of generation, where the output is forecasted to be exceeded 50% over the project's life. The P90 figure is the level of generation that is predicted to be exceeded 90% of the project's life.

³² [WOZ-210622022062-Letter-Additional-Offshore-Wind_Energy-Roadmap-2030.pdf \(rvo.nl\)](https://www.rvo.nl/en/energy/roadmap-2030)

³³ The Netherlands has the Freedom of Information Act, which allows developers to ask for all information linked to the final decision regarding the permit.

To mitigate potential risks and to be transparent, The Dutch authorities use a **panel of independent experts** to advise the government on the ranking for this criterion. The steps for recruitment and ranking by the panel of experts is as follows:

- > Selection of experts for the panel appointed by the Netherlands Enterprise Agency (RVO) (It is not documented, but the process of selecting this panel starts before the tenders are submitted).
- > Experts receive an overview of all tender applicants. If there is no conflict of interest, the experts are asked to sign a Non-Disclosure Agreement (NDA).
- > The panel of experts decides how proposals will be evaluated, based on the criterion as published by the Official Gazette of the Kingdom of the Netherlands. The tables in **Appendix B** present the scoring and point system for each criterion in detail.
- > Only after this approach is decided on, the panel will get access to the proposals of all developers.
- > Their assessment is not the final outcome, but will be an official advice to the authorities, who will make the final decision. Their advice usually has to be made within the first 3 months after the tenders are submitted. If the final decision on the winner of the tender is extended with 3 months, this deadline might be extended as well.

On the **ranking** of the tender applications, the Dutch model has specific notions on how to rank the applications, and how to deal with cases where applicants have a similar score. In general, as these rules are not specified in the Offshore Wind Act, they can change from one tender to the next. The general approach is that the applicant with the highest number of points in Awarding criteria for tender wins. In case two or more applicants have the same score, the score of the individual Awarding criteria (in a specific order) will be the deciding factor. This order is specified in the "Regulation granting permit wind energy area HKW VI and VII"²⁵. As an example, for the site HKW VI, the contribution of an applicant's project to the ecology of the North Sea from the wind farm on lot VI (criterion 4) is considered most important. If applicants have the same score here as well, the score of other criteria will be looked at, which is specified in the specific regulation for the tender in question.

The authorities have previously received multiple bids from one developer, but this was manageable to handle.

6.4 Authorities' and developers' view of tender model in The Netherlands

For the Netherlands, identified stakeholders were approached for direct consultation. This was done through COWI's established personal and industrial networks, and through the established reference group. Agreeing on short video conferences our team of experts collected views from the following stakeholders: Developers: **Ørsted, Vattenfall and RWE**. Authorities: **Netherlands Enterprise Agency (RVO) and Ministry of Economic Affairs**. This chapter highlights the most important pros and cons from either the **Dutch Authorities** or the developers on the Dutch tender model. The focus of the comments is on model 3 (comparative test), unless indicated otherwise.

Pros – as indicated by the Dutch Authorities

- > The winning bids have added value when using model 3 because they stimulate the market to deliver solutions on matters that the government include in the criteria. Clarity about the desired outcome with clear criteria and mutual weighing, and sufficient time to prepare for these, provides the right market incentives.
- > In the current system, the developers are also learning as they must come up with other solutions than just lowest cost. The Netherlands Wind Energy Association (NWEA) asked the government to

continue with this model. In line with EU rules on state aid, offshore wind permits are scarce assets that cannot be given for free. Nor can the preparations done by the state that provide certainty on the conditions.

- > In the current model, once a developer wins the tender and is awarded a permit, they have certainty on the conditions for the development of the offshore wind farm since these conditions are clearly reflected in the criteria of the permitting procedure.
- > The Dutch government scores developers on communication and action/strategy plans. The idea is to develop innovation that can be re-used and scaled up by other (open-source knowledge). This would be crucial for the market.
- > Price and non-price criteria can be combined if done carefully.
- > To get the permit, the developer must provide a deposit or a bank guarantee as security for the construction of an offshore wind farm. If the developer has not performed the activities specified in the permit (such as the conditions on which the permit was issued) within the specified period, part of the bank guarantee may be forfeited (which will increase per month thereafter). In addition, the license may be amended or revoked if the information provided with the application appears to be so incorrect or incomplete that a different decision would have been made (during the tender assessments) if this information had been known at the time of the assessment.

Pros – as indicated by the Developers

- > While the scoring criteria places a risk on developers it also allows for a more diverse set of solutions proposed by the market. On top of that developers can align their bid contents to their relative strengths and include specific elements that are already developed inhouse or in collaboration with partners.
- > Multiple award criteria allow developers to distinguish themselves in their bid.
- > Roadmap with planned tenders help creating certainty for developers.

Cons – as indicated by the Dutch Authorities

- > It is a large amount of work for developers – a developer must invest between 20-30 man-years into a bid. which they have to implement in a 2-3-month period.
- > The preparation of a tender is also time consuming for the authorities; up to 1 year for a tender option including criteria (model 2 or 3).
- > Non-price criteria are only as effective as how they are chosen, formulated and shaped. This depends on the weighing and how these will be judged and enforced. Rijkswaterstaat (implementing organisation of the Ministry of Infrastructure and Water Management) is responsible for enforcement, it is however not documented how this is done. If effectively done, they can deliver better results than another permitting procedure. However, the margin for errors is also larger: This is to say that if one is unclear about what the deciding factor will be, the market will decide for itself. This might not necessarily reflect the Government's desired outcomes of this instrument. To illustrate, the financial bid is awarded 50% of the points, and measures on ecology is awarded 50% of the points. At this point, the market is left to decide where they spend the most money. If the Government is truly ambivalent about this

then it does not matter. But if the Government values the negative bid more than ecological measures, leaving this decision up to the bidders might result in unwanted outcomes (i.e. the market putting most of the effort and money into the negative bid, achieving below-expectations on the ecology measures). Clarity about the desired outcome with clear criteria and mutual weighing, and sufficient time to prepare for these, provides the right market incentives.

- > There is a risk of mismatch with a zero-bid action that the highest scored application is not necessarily the application that cost the most money for the OWF because it is judged on its quality. There is a hypothetical scenario possible that the highest quality did not cost the most money. With a zero-bid auction, the highest scoring bid will definitely cost the most money.
- > If price, and non-price criteria are combined, if not made clear in the rules what is the deciding factor, this can lead to an unwanted outcome. Transparency and clarity mitigate this con and turns it into a pro.
- > Subsidy scheme was found to give a higher certainty of realisation, but this comes with a higher preparation cost: In case of a subsidy in the Netherlands, the authorities themselves need to deliver more additional documents in order to explain why the subsidy is needed.

Cons – as indicated by the Developers

- > The scoring criteria for the recent Dutch tender were somewhat subjective and allow for different interpretations. This brings a certain degree of uncertainty in bid development as the interpretation of the jury might differ from the interpretation of the developers.
- > Up till now, Dutch tenders have not awarded developers for efforts to decarbonize own operations or their supply chain

6.5 COWI Reflections on the tender model in The Netherlands

This final section presents the reflections from COWI on the Dutch tender model. Key takeaways are summarized in the introductory chapters 1.1. The focus of the comments is on model 3 (comparative test), unless indicated otherwise.

Tender

- > Tender model 3 could be further improved by exploring whether broader qualitative minimum requirements could be included instead of tender specific requirements. It would be interesting to explore the balance between adaptability, acceleration, and predictability of permitting procedures in the longer term.
- > Based on an interview with the Dutch authorities, and when looking at the planned sites in figure 5.3 (section 5.2), it seems that sites with a size between 1-2 GW allow for economies of scale, whilst still ensuring competition and minimising counterparty risk for the state in the case the multiple developers end up winning different sites.
- > Timeline of the tender process needs to be clear from the start and should not change along the way. Delays in e.g., final publication of tender criteria shall not happen. Q&A for more clarification on the tender rules needs to be public and timed in such a way that all questions can be answered in time before the tender deadline.

- > Looking at the most recent tenders, the developers who have been awarded with projects in the Netherlands are namely known to have more knowledge on the environment. The fact that the award criteria might pre-select developers with these qualities, might be an add on for society: Developers bring something to the table that the authorities may not be able to achieve themselves. A similar argument can be made for developers that are strong in local content, or system integration. However, there is a potential risk that this would decrease competition and thus likely the value added for society.
- > A potential problem with this tender model stems from uncertainty about the value of the site to developers. The Dutch authorities have chosen this tender model and set a 'cap' on the financial bid based on the belief that the economic value of the site is low. If the site turns out to have high value, the bidders will propose large investments in the qualitative criterium in order to win. This may be an overinvestment in this criterium relative to the value to society. The opposite could be true as well, where the points given to the financial bid versus the point given to the bid on the qualitative criterium may lead to underinvestment in the qualitative criterium. It may therefore be a consideration to not use a financial bid and have this (indirect) valuation as part of the non-price criteria.

Criteria

- > Applying rationale in scoring criteria (for example on the beauty contest elements) is emphasised as very important since it provides a clear direction, and a possibility for developers to distinguish themselves. In general, the introduction of multiple criteria is positive: It pays off to give developers the opportunity to distinguish themselves and demonstrate their specific strengths.
- > The Award criteria must leave no room for arbitrary interpretation or uncertainty. As such, the set of criteria needs to be selected and considered very carefully.
- > Reflections on weighing of the criteria: In one of the most recent tenders, HKW VI, the award criteria "contribution to the ecology of the North Sea" counts for 50%. It would be good to see how these are determined, and what the expected output is. For example, all the developers must adhere to EU rules and regulations, like for example Natura 2000. What is the added value of this part of the tender? Perhaps 50% is reasonable, but it could also be too high, depending on the expected added value for the ecology.

Ranking / panel

- > Any evaluation of qualitative award criteria must be based on sound, proportional, transparent, rational, and justified expert judgement/deliberation subject to review. As such, the government (RVO) is working on eliminating the margin for any unsound subjectivity when drawing a scoring board. The Netherlands works with a panel of individual experts who are scoring independently from each other. Scores are aggregated afterwards. The outcome of these results is in general very transparent. This may facilitate a legitimate process and enhances accountability.
- > Regarding the panel itself, a potential issue is that their exact scoring method is unknown to the developers, which might lead to some developers scoring low. This could be since their approach is not matching the scoring method, rather than them not being able to implement this. The use of an expert panel is fine, but perhaps the way the panel is used, and how transparent their scoring method is, would benefit from further scrutiny.

7 Offshore Wind Tender Schemes in United Kingdom

The UK's electricity market is characterised by liberalised generation and supply markets, supported by regulated transmission networks. Energy Policy is set by the Department for Business, Energy and Industrial Strategy (BEIS) overseeing the operation of markets and regulating networks. The generation mix is changing rapidly with the phase out of coal by 2025 and accelerated build-out of low-carbon power. In 2018, the UK had around 108GW of installed generation capacity, with a peak demand of just under 60GW. Wind power made up the largest proportion of renewables with 21GW installed, of which 8.5GW was from offshore. By 2030, this is expected to reach at least 30GW under industry plan set out in the Offshore Wind Sector Deal. The current UK Offshore Wind Tender Scheme is set out under the Offshore Wind Sector Deal as overseen by BEIS. The Offshore Wind Sector Deal builds on the UK's global leadership in Offshore Wind, maximising the advantages for UK industry from the global shift to clean growth.

This Sector Deal focuses on providing forward visibility of future Contract of Difference rounds with support of up to £557m, increasing UK content to 60% by 2030, increasing the representation of women in the Offshore Wind Workforce to at least a third by 2030, setting an ambition of increasing exports fivefold to £2.6bn by 2030, and investing up to £250m in building a stronger UK supply chain.

In 2022, under the wake of Russian invasion of Ukraine and the desire to be more energy independent, the government has increased the target to reach 50GW, of which 5GW would be floating wind by 2030. The government plans to significantly streamline the planning and permitting of offshore wind, and it is expected to reduce the process from 4 years on average to one year, with a new Offshore Wind Acceleration Task Force to facilitate this. However, the details on this plan have not yet been announced.

The Crown Estate is owned by the Monarch in right of the Crown, and it is responsible for identifying and leasing suitable seabed sites for Offshore Wind developments. 100% of the profits returns to HM Treasury for the benefit of the public finances.

The Crown Estate commits to deliver a robust pipeline for low-cost offshore wind deployment, offer an attractive and accessible proposition to developers, balance the range of interests in the marine environment, making efficient use of the seabed, and unlock the commercial value of the seabed in line with the Crown Estate's statutory obligations for the benefit of the public finances.

The latest Leasing Round 4 has opened the opportunity for at least 7GW of new seabed rights supporting the continued growth of the UK offshore wind sector and helping the nation's need for new, clean, affordable energy. A 3-stage tender process has been designed, which evaluates both the technical and financial capability of the bidders, and assesses their proposed projects, before using option fees to determine final project award. This approach helps ensure capable bidders and strong projects come forward for new leasing, within a process that is objective, fair, and transparent.

The UK Government also provided a clear framework for incentivising low-carbon energy technologies including offshore wind, via the Contracts for Difference (CfD) regime. CfDs are government-backed contracts, entered into with private developers for an agreed electricity offtake strike price over a 15-year term. The CfD contracts are allocated through competitive auctions managed by BEIS.

The government requires developers with generating stations more 300MW applying for CfD to submit a Supply Chain Plan as government considers this project large enough to influence the supply chains and contribute to low carbon electricity generation market.

In the latest round of CfD Allocation Round 4 with results announced in July 2022, the UK government awarded contracts to renewable energy projects totalling almost 11GW in capacity, offshore wind sector has secured almost 7GW capacity cleared at a record-low strike price of £37.75/MWh (fixed bottom), a 75% decline from the first CfD auction in 2016.

The income from Round 4 option fee will not be realised on its balance sheet until after the Agreement for Lease have been signed. Once the Agreement for Lease is signed there would be resultant additional £73 million per month of income being recorded in the revenue account income statement [<https://www.thecrownestate.co.uk/annual-report-2022/>]. The value of the Crown Estate Marine portfolio has increased by 22% to £5.0 billion, driven largely by offshore wind, in particular leasing Round 4. The revenue is generated by HMT as part of a leasing agreement from the Crown Estate.

Note: on 9 August the government published the Supply Chain Plan Guidance and Questionnaire for the next CfD Allocation Round 5. Other details on the CfD have not been announced yet, however the key changes to Supply Chain Plans for AR5 include:

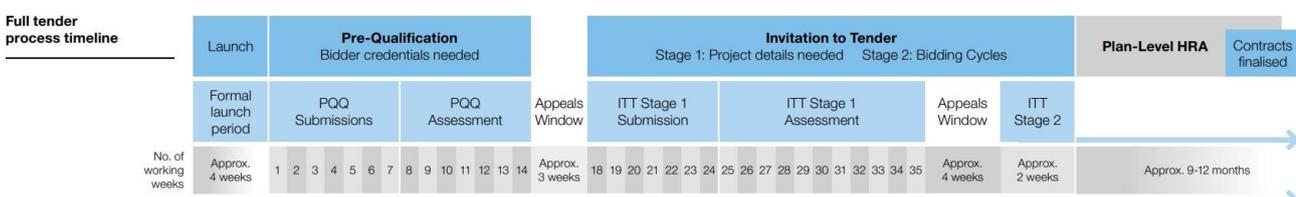
- > *Floating Offshore Wind projects smaller than 300MW will be included in the Supply Chain Plan (SCP) process.*
- > *Raising the SCP pass mark from 50% to 60% (except for Floating Offshore Wind projects smaller than 300MW for whom the pass mark will be 50%).*
- > *Introduction of feedback sessions into the Supply Chain Plan process to give applicants the opportunity to make amendments to a plan during the assessment process.*
- > *Introduction of a new template for the Supply Chain Plan Questionnaire to provide more clarity.*

7.1 Introduction to the tender model in United Kingdom

The latest tender, The Crown Estate Round 4, which was launched in 2019, has employed a 5-stage leasing process. Any developer or investor, whether already established or new to the UK market, had an opportunity to bid for projects through Leasing Round 4, provided they or their partners have the necessary financial strength and technical competence to deliver. The detailed process is explained here: [tce-r4-information-memorandum.pdf](#)

To provide flexibility for bidders during the tender process, bidders would be able to propose sites in up to five distinct locations across the open Bidding Areas. A project group is made of a Primary Project in each location group, in addition each Primary Project may be accompanied by up to four Variant Projects. The Project Area covered by each Primary Project and the related Variant Projects are known as the Aggregated Bid Area. The final decision on project allocation was based on the option fee value proposed by the bidder.

In total, the Round 4 tender process was expected to take approximately 12 months, followed by a Plan-Level Habitats Regulations Assessment (HRA).



The 5-stage leasing process includes the following:

1) Pre-qualification questionnaire (PQQ) – 14 weeks

The Crown Estate would access potential bidders’ financial capability, technical experience, and legal compliance, with successful bidders pre-qualifying for the ITT Stage 1 process (becoming a pre-qualified bidder).

Pre-qualification questionnaire (PQQ) Award criteria:

	PQQ Award Criteria	Assessment criterion
1	Legal Criteria	Bidders are assessed against anti-bribery, anti-fraud, and tax compliance criteria.
2	Financial Criteria	Ensure a bidder is financially credible.
3	Technical Criteria	Project Management.
		Health, Safety and Environmental (HSE) policies and regulatory actions.
		Grid connections.
		Consents.
		Management of Environmental Impact Assessment (EIA).

2) Invitation to Tender Stage 1 (ITT Stage 1) – 18 weeks

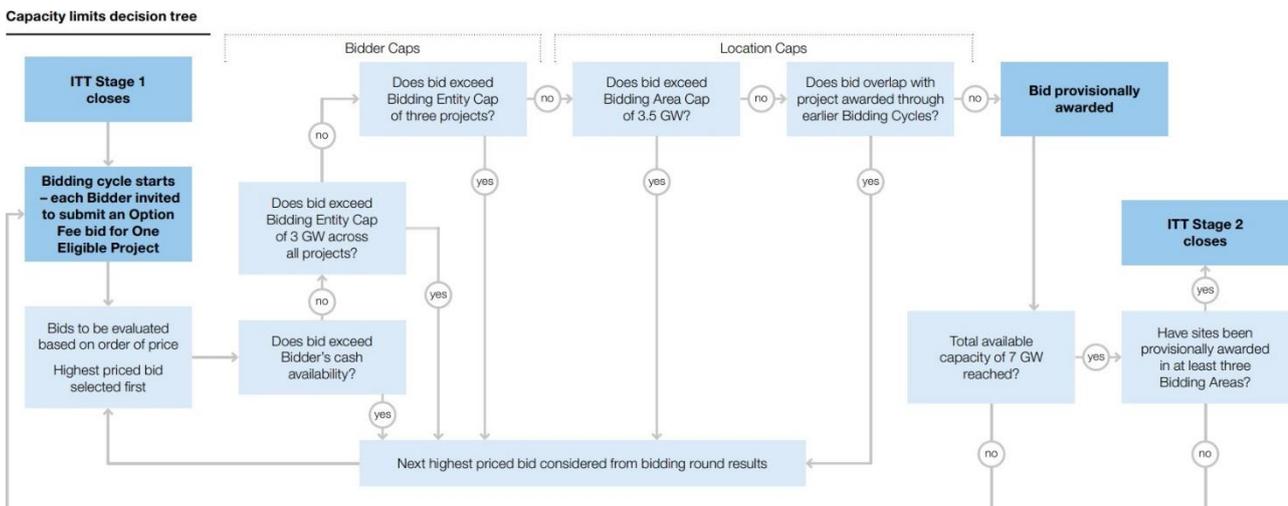
The Crown Estate would access the financial and technical robustness of projects submitted by pre-qualified bidders. Projects that pass will then be eligible to take part in the ITT Stage 2 process (becoming Eligible bidders with Eligible Projects).

	Criteria	Assessment criterion
1	Financial Criteria	<p>Bidders are required to provide evidence for:</p> <ul style="list-style-type: none"> i) Development cost plan. ii) Maximum level of cash (bidders will be required to provide evidence of their financial capability to cover the cash requirement for the first 3 years of the development of the proposed project, including the option fee instalments). iii) Capital availability.

	Technical Criteria:	<ul style="list-style-type: none"> iv) Site compliance. v) Constraints identification. vi) Schedule. vii) Health, Safety and Environmental (HSE) Management.
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3) Invitation to Tender Stage 2 (ITT Stage 2) – 1 to 4 weeks

A multi-cycle bidding process, using option fees bid by eligible bidders to determine award. One project would be awarded per daily bidding cycle, where bids per cycle would be sealed and considered at the close of each bidding cycles. Bidding cycles would continue until the 7 GW had been awarded or exceeded (up to 8.5 GW). On winning a daily bidding cycle, a bidder would need to enter into a Preferred Bidder Letter and pay an Option Fee Deposit. Round 4 of the leasing process has achieved an initial investment of £879 million in option fee deposit.



The winning bidder would be required to pay an Option Fee Deposit (equalling the Option Fee Bid in (£/MW per annum) multiplied by the proposed Project Capacity of the successful site) and to submit a signed copy of the Preferred Bidder Letter by 5 pm (UK time) on the day of the Bidding Cycle they had won. If the successful bidder is a Consortium, this would require the signature of all Consortium Members. Upon execution of the Preferred Bidder Letter and payment of the Option Fee Deposit the bidder should be designated a Preferred Bidder with a Preferred Project. It should be noted that bidders pay option fees, while at the same time they can receive CfD support.

Where payment notification has been received on or before 5 pm (UK time), The Crown Estate would issue a Preferred Bidder Letter, and the project is taken through to the Plan-Level HRA stage.

The overview of the daily schedule is as below:

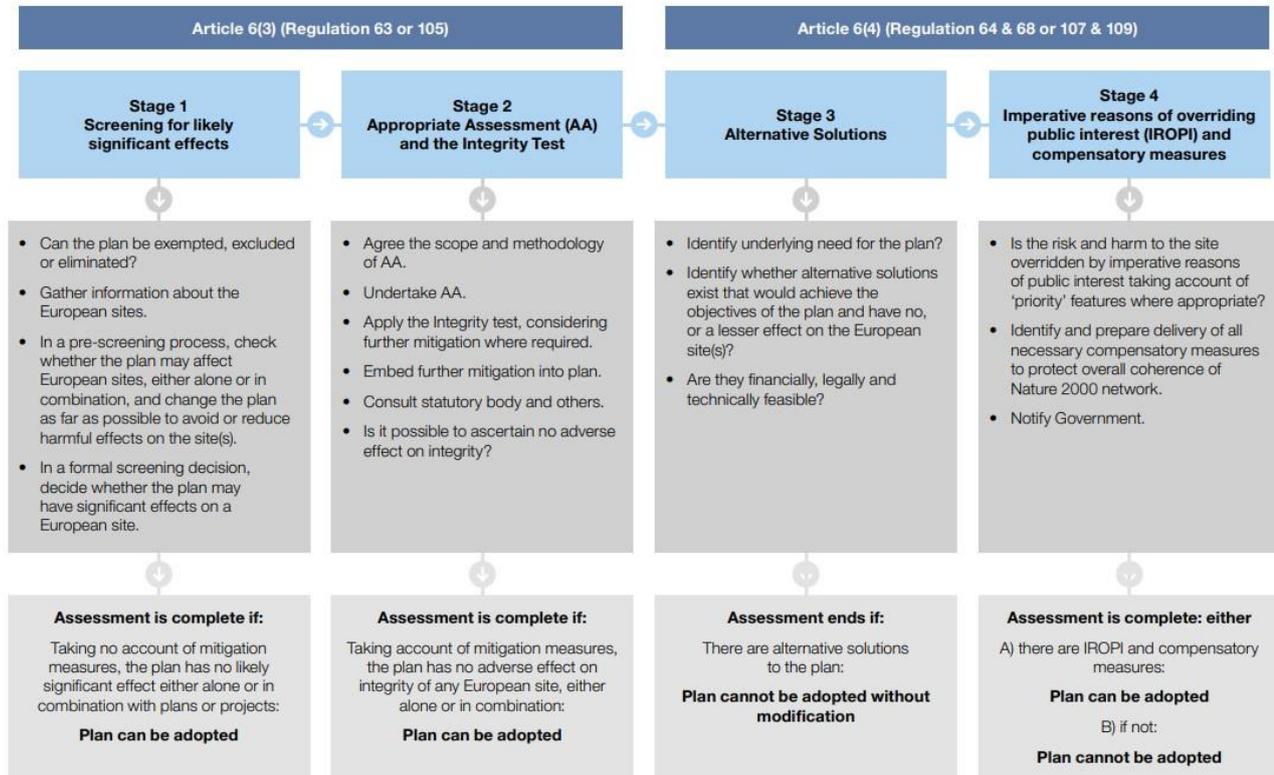
ITT Stage 2 process	Day 1	Day 2	Day 3	Day 4
8 am		Portal to submit bids for Cycle A closes	Portal to submit bids for Cycle B closes	Portal to submit bids for Cycle C closes
8 am – 12 pm		Bid evaluation by The Crown Estate	Bid evaluation by The Crown Estate	Bid evaluation by The Crown Estate
12 pm	Portal opens to submit bids for Cycle A	Successful bid confirmed	Portal opens to submit bids for Cycle B	Successful bid confirmed
12 – 6 pm	Portal to submit bids for Cycle A is open until 8 am on Day 2	Deposit to be paid by Preferred Bidder and Preferred Bidder Letter executed	Portal to submit bids for Cycle B is open until 8 am on Day 3	Deposit to be paid by Preferred Bidder and Preferred Bidder Letter executed
				Portal opens to submit bids for Cycle C
				Daily cycles continue until at least 7 GW of Preferred Project Capacity has been identified across at least three Bidding Areas

4) Plan-Level Habitats Regulations Assessment (HRA) – Autumn 2020 – Summer 2021

A Plan-Level Habitats Regulations Assessment (HRA) would be carried out by the Crown Estate to assess the possible impact of the awarded projects on relevant nature conservation sites of European Importance. The timing of this has been defined in principle from the latest information memorandum and it should be noted that an HRA is different from a full Environmental Impact Statement. A good description of the difference between the two can be found, for example, at <https://www.carcinus.co.uk/environmental-services/environmental-consultancy/eia-hra-wfd/>

The EU Habitats Directive provides for the establishment and protection of certain habitats known collectively as European sites. Under the Habitats Regulations, where a plan or project is not directly connected with or necessary for the management of European sites, and where the possibility of a 'Likely Significant Effect' (LSE) on these sites cannot be excluded, either alone or in combination with other plans or projects, an Appropriate Assessment should be undertaken. In general, where an Appropriate Assessment is required, the plan or project should not proceed unless it is determined that it would not adversely affect the integrity of a European site. The process of screening for LSE and then, where required, producing an Appropriate Assessment, is collectively referred to as a Habitats Regulations Assessment (HRA).

Plan-Level Habitats Regulations Assessment (HRA)



5) Agreement for Lease

The Crown Estate would enter into a Wind Farm Agreement for Lease (AfL) with successful bidders.

The developer would not be permitted to commence construction of its development unless and until all statutory consents had been obtained and a Wind Farm Lease had been granted. The developer would hold both the Wind Farm AfL and the Transmission AfL, assuming the transmission link would be developer-built (otherwise a licensed OFTO could hold the Transmission AfL). It would be expected that the option for the Transmission Lease would be exercised at the same time as the Wind Farm Lease, after the project had obtained all Necessary Consents.

Milestones would be set to ensure that delivery of the Project progressing as expected and give early visibility where this would not be the case. Milestones must be achieved by the deadlines set out but extensions to the milestone due dates might be granted for payment of a fee. Failure to meet a milestone by the deadline (as extended) would give The Crown Estate the right to terminate the AfL. The milestones, deadlines and maximum extensions will be as set out below.

Milestone	Evidence	Deadline (post AfL signing)	Maximum extension
1) Evidence of Initial Site Development provided by EITHER: 1a) Geophysical surveys commenced; OR 1b) Ornithological surveys commenced; OR 1c) Scoping Report submitted.	1a) and 1b) Evidence of signed contract and contractor-provided activity log/report(s) demonstrating operator on site collecting site data, or undertaking pre-measurement-campaign validation tests 1c) Confirmation of receipt from relevant authority provided by email or in letter format.	18 months	Six months
2) Consent application for offshore wind farm and export cable route submitted to PINS/Welsh Government.	2) Confirmation of receipt from relevant authority provided by email or in letter format.	Five years	12 months

7.1.1 Support Schemes in United Kingdom

The Contracts for Difference (CfD) scheme is the government’s main mechanism for supporting the deployment of low-carbon electricity generation. The 2-sided CfD, entered by the Developer and the Low Carbon Contracts Company (LCCC), owned by BEIS, protects developers from volatile wholesale electricity prices, while protecting consumers from paying increased support cost when electricity prices are high.

The detailed framework for the allocation framework for the latest allocation round can be seen on [cfd-allocation-round-4-allocation-framework.pdf](#). The overall process for the CfD scheme is as below:

- > LCCC publishes a Draft Allocation Framework, which sets out the rules for the allocation round.
- > Developers with generation capacity of 300MW or more submit Supply Chain Plan for assessment.
- > Developers and LCCC discuss any deviation, exceptions, or any modification of the standard terms with the governing body.
- > LCCC review CfD applications against the relevant CfD Qualification criteria.
- > LCCC confirms auction and invite sealed bids. The winner will be the developer submitted bid with the lowest strike price.
- > LCCC confirms winner and enters private law contract with winning developers.

To qualify for a CfD Allocation Round, CfD applicants for a generating station with generation capacity of 300MW or more would be required to provide National Grid ESO (as Delivery Body) with a statement by BEIS approving the Supply Chain Plan submitted in respect of that station. The government considers projects with such scale would be large enough to influence the supply chains and contribute to low carbon electricity generation market.

Responses by the Applicant to the scored sections of the Supply Chain Plan questionnaire would be assessed by BEIS to determine award of this Supply Chain Plan statement of approval, and hence eligibility to participate in the CfD scheme.

The Supply Chain Plan aligns with the objectives of the government strategy “Build Back Better: our Plan for Growth”. The full government strategy can be found here: [PfG_Final_Web_Accessible_Version.pdf](#). The four main objectives are as follow:

- > Green Growth: Net Zero and levelling up – ensure the push to Net Zero creates new economic opportunities for a range of actors, helps establish new low carbon industries, and decarbonises supply chains whilst levelling up our economy by creating new centres of industrial excellence.
- > Innovation: Nurturing and commercialising innovative technologies to create more efficient equipment, improved installation methods and new types of procurement and contracting strategies. This will then reduce the costs of projects and overcome the technical challenges of renewable electricity generation and contribute to reaching our Net Zero objectives.
- > Infrastructure: Removing barriers and increasing investment to help reach Net Zero and to provide the tools necessary to level up our economy, by encouraging sustainable investment in infrastructure.
- > Skills: Developing a diverse, skilled workforce and increasing employment opportunities by supporting the training and transitioning of the workforce to attain the skills needed for low carbon electricity generation, while ensuring the renewable energy industry reflects society as a whole and operates ethically and safely.

The aims of the Supply Chain Plan process are to:

- > Encourage competitive, productive and efficient supply chains for low carbon electricity generation projects, and to accelerate investments in a broad range of established and less established low carbon technologies to help ensure delivery of our ambitious Net Zero objectives
- > Enabling the delivery of effective, open and competitive supply chains will assist in bearing down on the costs of low carbon electricity generation in the UK, ensuring that unnecessary costs are not passed on to consumers, while encouraging investment in low carbon electricity generation to meet our net zero targets by 2050.
- > Ensure Low carbon electricity generation projects should not only contribute to decarbonising the UK economy once operational, but throughout their lifetimes, including during project development, construction, operations and eventually decommissioning, and;
- > Have competitive and adaptable supply chains that give opportunities to new entrants and smaller businesses to contribute to the market and disrupt existing practices

The Supply Chain Plan Questionnaire consist of six main tables to complete. During the application stage, the applicant would be marked for the comprehensiveness of the response, scale of ambition and anticipated outcomes and feasibility, with assuredness of delivery in each section. Applicants scoring less than 50% in one or more sections of their Supply Chain Plan are unlikely to pass and therefore unlikely to be approved. The full Supply Chain Plan Guidance can be found here: [Supply Chain Plan Guidance updated July 2022, where in Annex D provides a full scoring criteria in which how the marks are scored.](#) It should be noted that the Supply Chain Plan is embedded in the full process from the pre-auction through auction delivery. In the pre-auction stage, the government department BEIS will assess the submitted Supply Chain Plan through the expert panel and can request the developer to update this to meet the required standard. Once the auction is complete BEIS will monitor the performance of the developer against achieving the outputs required in the Supply Chain Plan.

Annex D: Scoring guidance at application and assessment stage

Scoring Criteria at application stage		Scoring Criteria at implementation assessment stage	
For scored sections of the questionnaire only		For scored sections of the questionnaire only	
Marks will be awarded for the comprehensiveness of response, scale of ambition in activities and anticipated outcomes, feasibility, whether you identify quantifiable outcomes with measurable metrics, and how delivery will be assured (e.g. through contractual commitments, details of your company's internal measurement/monitoring processes and obligations, including reporting). A high weighting is placed on the scale of ambition.		Marks will be awarded for the comprehensiveness of response, scale of ambition of agreed commitments and delivered outcomes, whether you have identified quantifiable outcomes with measurable metrics, and/or how you are assuring delivery (e.g. through contractual commitments, details of your company's internal measurement/monitoring processes and obligations, including reporting). A high weighting is placed on the scale of your initial ambition.	
Fully comprehensive responses to all parts of question with activities and/or processes delivering in aggregate a high material contribution to international and UK supply chains to support the low carbon electricity sector, supported by detailed evidence of feasibility, assurance of delivery, and measurable outcomes	4	Fully comprehensive reporting against the agreed commitment, with activities and/or processes delivering in aggregate a high material contribution to international and UK supply chains to support the low carbon electricity sector, supported by detailed evidence of delivery or ongoing efforts to deliver, and measurable outcomes.	4
Responses to all parts of question with activities and/or processes delivering in aggregate a high material contribution to international and UK supply chains to support the low carbon electricity sector, supported by evidence of feasibility, assurance of delivery, and measurable outcomes	3	Good or fully comprehensive reporting against the agreed commitment with activities and/or processes delivering in aggregate a moderate or high material contribution to international and UK supply chains to support the low carbon electricity sector, supported by evidence of delivery or ongoing efforts to deliver, and measurable outcomes	3
Partial responses to the question with activities and/or processes delivering in aggregate a moderate contribution to international and UK supply chains to support the low carbon electricity sector, supported by evidence of feasibility, assurance of delivery, and measurable outcomes	2	Partial reporting against the agreed commitment with activities and/or processes delivering in aggregate a moderate contribution to international and UK supply chains to support the low carbon electricity sector, supported by evidence of delivery or ongoing efforts to deliver, and measurable outcomes	2
Incomplete responses to question with activities and/or processes delivering in aggregate a low contribution to international and UK supply chains to support the low carbon electricity sector.	1	Incomplete reporting against the agreed commitment with activities and/or processes delivering in aggregate a low or moderate contribution to international and UK supply chains to support the low carbon electricity sector, supported by limited evidence of delivery or ongoing efforts to deliver, and measurable outcomes.	1
No or minimal information and supporting evidence provided and/or required tables not completed	0	No or minimal information and supporting evidence provided and/or required tables not completed, and/or no evidence of delivery nor of efforts to deliver the agreed commitment	0
Note that at application stage only, question 4.3 and 4.4 (i) will be scored as follows: 100% of marks will be attributed to the application that proposes and evidences the highest number of positions or direct jobs per MW, and all other applications will be scored against this benchmark with the lowest proposal getting 50% of marks. Not providing any information on this question will award no marks. Note that for 4.4(i) the score is based on total number of jobs (UK and RoW combined), with no distinction between the two in the marking. For 4.4 (ii), scoring will be based on the same methodology as the rest of the questionnaire. Question 4.4 will be split equally in terms of marks between parts (i) and (ii).			

The applicant awarded the CfD, now referred to as Generator, will be assessed by BEIS on their progress against their Supply Chain Plan commitments, using the same table in the Supply Chain Plan Questionnaire, once the Generator has passed their Milestone Delivery Date. The Generator would be marked for the comprehensiveness of response, scale of ambition and delivered outcomes, effectiveness on the assuredness of delivery. Generators that do not achieve at least 50% (as a percentage of total marks) in each section of their Supply Chain Plan commitments at implementation stage would be unlikely to fulfil their OCP, which may lead to contract termination.

The main components in the Supply Chain Plan Questionnaire to be filled in are as below:

- > Core Components: Developer to list the shortlisted or confirmed supplier for the core components for their development.
- > Contract Package Details: Developer to detail the contract packages, this may be used to provide evidence at monitoring and implementation assessment stage
- > Comprehensive Inventory of Supply Chain Activities and Outcomes: Developers to detail how the Supply Chain Activities will comply to the Government's Build Back Better goals: Green Growth, Infrastructure, Innovation and Skills.
- > UK Content proportion: Developer to detail the anticipated UK Content as a proportion within the DevEx, CapEx, OpEx and DecEx project stages.
- > Training and skills development: Developers to detail the quantities of apprenticeships and scholarships positions to be involved in the project phases.
- > Job Opportunities: Developers to detail the job opportunities provided in the project, including Professionals, Technical and Basic Skills job opportunities in each project stages.
- > UK Content Key Components Expenditure: Developers to calculate the expenditure from the UK Content during the different project stages

Since September 2021, recording-breaking energy prices have significantly brought forward the point at which low-carbon generators under the CfD contracts begin to make payments to LCCC rather than to receiving payments from LCCC. In 2022 the consistent high market prices meant the LCCC has been receiving payments from low-carbon generators. (see announcement from LCCC here: <https://www.lowcarboncontracts.uk/news/announcement/reconciliation-of-q4-2021-payments-sees-cfd-portfolio-paying-back-to-electricity-suppliers>)

The CfD comes into effect when it is signed and dated by the parties. The generator is required to trigger the start date by a prescribed longstop date set out in the CfD; the agreed term of the CfD is reserved provided that the generator achieves the start date during a prescribed target commission window. For each day of the longstop period during which the start date has not occurred, the CfD term is reduced, and following the longstop date, LCCC reserves the right to terminate the CfD.

7.2 Other Award Criteria in Offshore Wind tender model

The Renewables Obligation (RO) has been one of the main support mechanisms for large-scale renewable electricity projects in the UK, until its closure on 31 March 2017 and was replaced by CfD. The RO places an obligation on UK electricity suppliers to source an increasing proportion of the electricity they supply from renewable sources. Under the scheme, operators of accredited renewable generating stations are issued with Renewable Obligation Certificates for the eligible renewable electricity they generate. The process is described in detail here: [ro_generator_guidance_apr19.pdf](#)

The Renewable Obligation is administered by Ofgem (Office of Gas and Electricity Markets), the main aim was:

- > Accrediting generating stations as being capable of generating electricity from eligible renewable sources.
- > Issuing Renewables Obligations Certificates (ROCs) and revoking these as necessary.
- > Establishing and maintaining a Register of ROCs.
- > Monitoring compliance with the requirements of the orders.
- > Calculating annually the buy-out price.
- > Receiving buy-out payments and redistributing the buy-out fund.
- > Receiving late payments and redistributing the late payment fund, and
- > Publishing an annual report on the operation of and compliance with the requirements of the orders.

7.3 COWI Reflections on tender model in United Kingdom

The UK approach is a multi-stage competitive approach based on qualitative and quantitative award criteria. The developers have been embedded in the evolution of the process through five allocation rounds and we will need to understand the reaction to the current allocation round and the improvements that have been made. Our observation at present, is that all the key elements (such as supply chain plans) are being flowed down by developers when engaging wider supplier chain partners such as COWI. The evolution of this tendering model has led to significant development of offshore wind in the UK as defined in the introduction to this section. It should be noted that the tendering process in itself will not be responsible for the growth but it has not discouraged developers identifying and responding positively to revenue streams with appropriate levels of risk balance that are acceptable to the board rooms. As such, the model as it stands is delivering the Crown Estate purpose of delivering a robust pipeline of work whilst balancing the environment needs. It is very positive that with the ongoing focus on ensuring a very competitive strike price that tenderers are being challenged to look at the whole supply chain and the value they deliver throughout this. We have seen this with recent tenders that there is an ever-increasing focus on whole life value. The developers are part of the overall development of the tender model as between each release the Crown Commercial Estate has gathered lessons learned, for example Crown Estate Lessons Learned 2014 have now been integrated into the new tender and leasing arrangements.

In the UK there is also recognition that the overall development cycle is long, and this is not just down to the procurement and tendering phase. As such, the government is also looking into the following areas:

- > Planning: A systematic review of planning regs for all infrastructure projects is ongoing at present. Planning has now been recognised as is a major block to delivery at pace, especially with new environmental conditions.
- > A different contract strategy: Putting in place framework agreements for major equipment so equipment can be drawn down at pace when needed without being re procured. This provides more certainty to the supply chain assists with creating a sustainable supply chain

- > In addition to this we believe there is an opportunity to reduce timescales if more time is spent focusing on using more common designs across all offshore wind farms and incentivising developers who do this well.

Pros -

- > One of the oldest tender models, has been tried and tested with experience.
- > Round 5 under development, and is evolving from feedback from previous rounds.
- > It provides security to developers and consumers, that is it is a “known product”.
- > It sets clear minimum requirements/eligibility criteria for participation including financial, technical, and environmental.
- > It is pushing the developers to adopt a more whole life approach to developing these assets
- > It encourages/requires local content and skills development for projects over 300MW.
- > It separates different generator technologies (e.g., fixed bottom and floating offshore wind) with different levels of CfD agreements

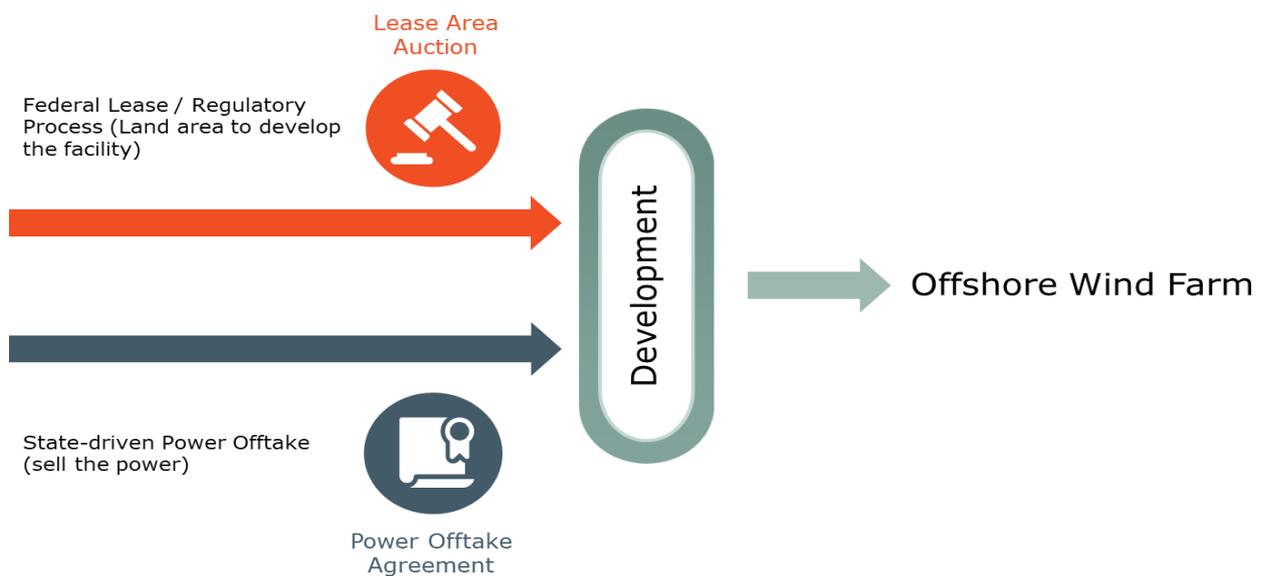
Cons -

- > Slow and too many processes, might not be suitable with Danish’s ambition for 2030. The overall average development cycle in the UK for an offshore wind project is: Developing and Consenting (5 years), Procurement and Contracts for Difference (2 years), Construction (3 years).
- > The market is very strong at the moment which allows for the acceptance of High option fees which is beneficial to HMT and there is a risk that this will lead to higher strike prices that will flow through to UK consumers. Effectively it is a developers market where there is not enough developer capacity to meet the market need in the UK and other worldwide regions.
- > There is a real risk that as developers understand their supply chain and whole life costs in more detail they will get “squeezed” from both the desire to reduce strike prices and from increasing development costs throughout the supply chain and this will impact their profits. Whether the UK tender process can respond to a change in level of risk a developer is preferred to take for the round 5 is an open question that needs to be tracked closely.

8 Offshore Wind Tender Schemes in United States

8.1 Introduction to the tender models in the United States

The United States has separate, independent federal and state processes for offshore wind. The federal government’s Bureau of Ocean Energy Management (BOEM), which is part of the Department of Interior, oversees offshore site identification, and leasing and permitting for all offshore wind farms greater than 3 nautical miles offshore (up to 9 nautical miles in parts of the Gulf of Mexico). Individual states typically lead offshore wind power procurement, interconnection to the electricity grid, and permitting of the parts of the projects on land and in state waters within 3 nautical miles of shore.



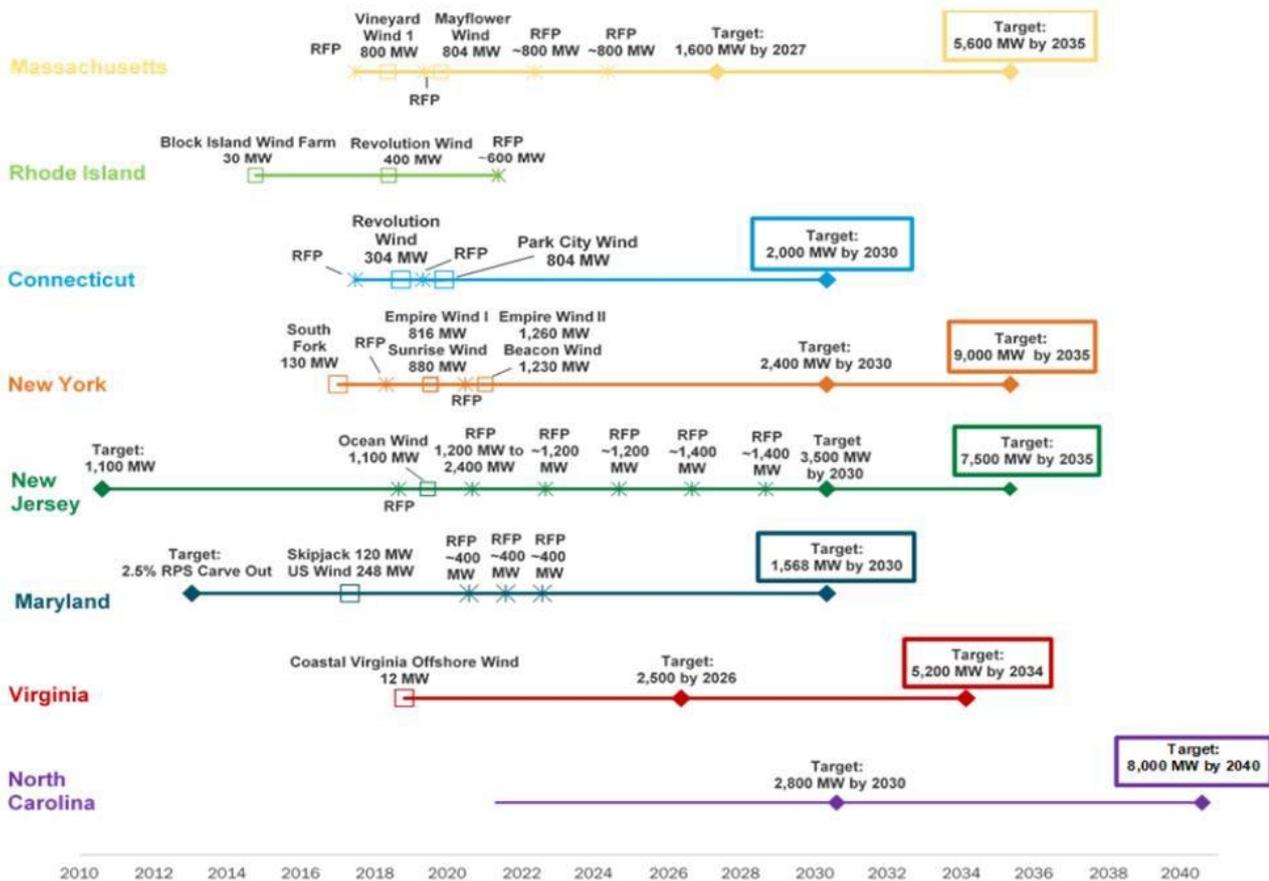
In preparation of this report, COWI spoke with officials from BOEM and the New York State Energy Research and Development Authority (NYSERDA) for federal and state perspectives, respectively.

The federal government and states each have their own independent offshore wind goals and timelines and while independent, neither can achieve their goals without the other. This is a unique challenge of a large country with federalist government system.

The federal administration in March 2021 set the United States' first offshore wind goal of 30 GW of offshore wind in operation by 2030. To help meet this target, BOEM is accelerating offshore wind leasing and permitting, but the federal government still needs states to lead power procurement for the projects to get built.



In the northeast, New York has a goal of 2,400 MW by 2030 and 9,000 MW by 2035. New Jersey has a target of 3,500 MW by 2030, 7,500 MW by 2035 and 11,000 MW by 2040. East coast offshore wind goals are shown in the figure below. On the West coast California in August 2022 set its first offshore wind goals of up to 5,000 MW by 2030 and 25,000 MW by 2045. California currently does not have any offshore areas leased to developers, but BOEM will hold its first lease auction in California on December 6, 2022.



8.1.1 Tender Process in United States

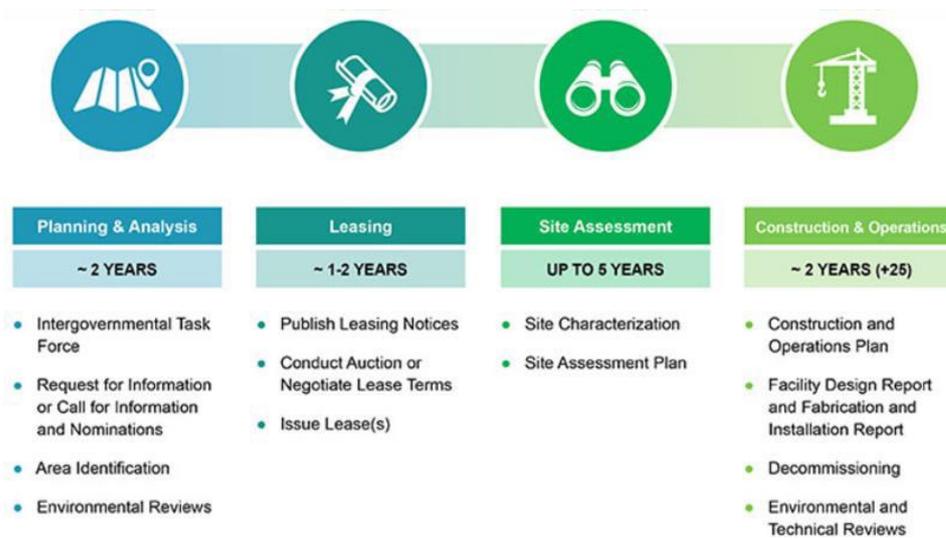
Federal Process

The Federal government, BOEM, identifies and leases offshore wind energy areas to developers. The Energy Policy Act of 2005 (EPAct) authorized BOEM to issue leases, easements, and rights of way to allow for renewable energy development on the Outer Continental Shelf (OCS). BOEM starts the area identification process with Intergovernmental Task Forces and Requests for Information or Calls for Information and Nominations. Intergovernmental Task Forces include members from federal agencies, state agencies and tribes. Environmental reviews (typically desktop) of areas under consideration are undertaken and public comment is solicited. Lease area identification typically takes two or more years.

Leases are typically awarded through competitive auctions³⁴. The winners of leases may propose projects to BOEM that must be submitted for environmental, socioeconomic, and technical review and approval. Note that a lease does not give a developer approval to build a wind farm, just to propose one. BOEM uses a blind, ascending bid, single monetary or multiple factor auction in which bidders can move between multiple areas offered during the auction if multiple sites are for sale. Non-monetary factors considered in recent multiple factor auctions include credit for workforce training or supply chain development commitments. BOEM also includes lease stipulations that have evolved over time and include items such as environmental, project labour and vessel transit corridor requirements.

Six lease areas from offshore New York and New Jersey auctioned in February 2022 sold for \$1.64 million USD to \$2.64 million USD per km². Additionally, projects must pay 2% of electricity sales each year to the Federal government. Auction and royalty proceeds go to the federal treasury and do not offset state electricity power procurements.

Developers must submit a Site Assessment Plan (SAP) within six months of receiving a lease. After SAP approval the developer has 4-1/2 years to submit a Construction and Operations Plan (COP). After COP is approved the lessee will have an operational term of 25 years. The developer may request extensions for SAP and COP submittals, which are typically approved. The developer may, but is not necessarily required to, submit their SAP and/or COP before securing a power offtake agreement.



³⁴ There is also a process for Unsolicited Lease Requests (30 CFR 585.230), but these typically end up just informing area identification and leading to competitive auctions.

State Process

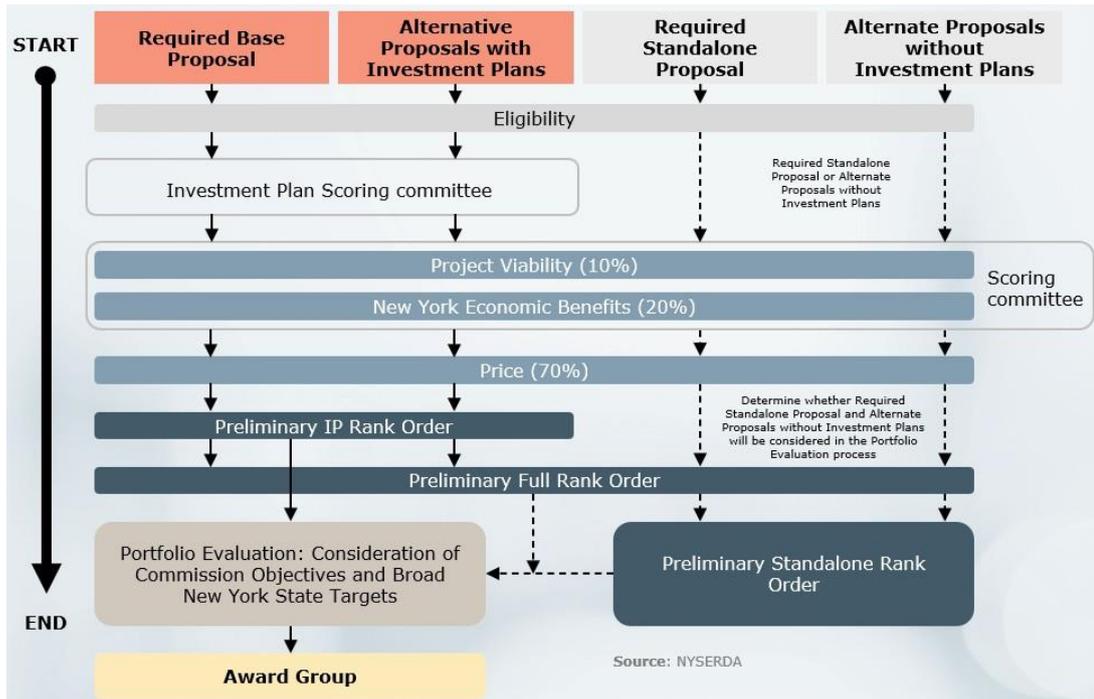
Each state has its own, unique, power procurement tenders and goals. For example, Massachusetts' tenders have been focused on getting the lowest price, New York's tenders are focused on local benefits such as local jobs and manufacturing, and New Jersey's tenders are focusing on reducing the cost of transmission. State procurements have been very successful to date achieving low prices as well as achieving other state goals.

States issue Requests for Proposals (RFPs) for offshore wind energy procurements. Timing of State offshore wind procurements is not linked to Federal leasing. This may result in imbalances between supply and demand. Typically, any project with a lease area that can connect via HVAC or HVDC into the regional grid of the state issuing the RFP may compete in the procurement. For example, a planned project offshore and interconnected in Massachusetts (MA) may compete in a Rhode Island (RI) or Connecticut (CT) RFP as MA, RI and CT all get their electricity from the same Independent System Operator (ISO), ISO-NE.

Looking at New York's offshore wind power procurement tender scheme, their RFP allows for developers of different lease areas (sites) offshore from any state in the northeast that can supply power to New York either directly or indirectly to compete for awards. Developers may submit multiple proposals in response to the RFP with different project sizes, interconnection points, compensation schemes (indexed, fixed, and inflation-based) and local benefits. The Round 3 RFP for which proposals are due in January 2023 (extended from December 2022) include cost-sharing options for interconnection, credit for repurposing existing fossil-based electric generation infrastructure, HVDC and meshed ready transmission requirements, supply chain investment, and labor requirements. While New Jersey is looking to offer planned offshore wind transmission solutions for its future RFPs, in New York and all other states to date, developers are responsible for interconnection including the costs of any upgrades required to the existing transmission system in order to inject their offshore wind project.

New York uses multiple factors in selecting projects from its RFPs. The selection criteria are 70% price, 20% economic benefits to the state (commitments to use New York labor, invest in New York port and manufacturing infrastructure, repurpose existing fossil-based electric generation infrastructure and similar) and 10% project viability (factors that demonstrate whether a project can reasonably be expected to be in service on or before the proposed Commercial Operation Date such as project development maturity and financial strength of developer). As developers are making multiple proposals from different lease areas, with different capacities, interconnection points, compensation schemes and benefits, there is a large complex matrix of proposals to analyse. To help with this, New York hires consultants to analyse and compare the proposals. This review typically takes up to three months and is paid for by application fees. The base proposal application fee is \$500,000 US and each additional proposal/variation submitted by the same developer is an additional \$25,000 to \$100,000. This review work is then used by New York State officials to select the award winners. New York's project selection process is shown in the below flow chart.

While New York and most other states have not put a price cap (maximum price) on Offshore Wind Renewable Energy Certificate (ORECs) and Power Purchase Agreements (PPAs). New York though does retain the right not to select any project if it deems all the proposals too expensive or for any other reason. All of the state OREC and PPA agreements to date have provided developers with fixed, guaranteed revenues. State ORECs such as those used by New York and New Jersey are similar to contracts for differences (CfDs) and provide developers a guaranteed price irrespective of electricity markets.



Developers with lease areas may start surveying and the permitting process before or after securing a power procurement agreement from a state or other entity. The environmental and geotechnical surveys required for federal approval are the responsibility of and performed by the developers.

When the developer has all the required Federal and State approvals and a power offtake agreement, they may construct and operate their project. Note, technically the developer does not need a power offtake agreement to construct and install a project, but it is unlikely a developer would build such a project on speculation.

8.1.2 Support Schemes in United States

The primary federal incentive for offshore wind construction is the Offshore Wind Investment Tax Credit created in 2020. Originally, any offshore wind project on which construction starts after 2016 through the end of 2025 will qualify for 30% investment tax credit a project’s capital expenditures. The Inflation Reduction Act signed into law by President Biden in August 2022, continues the 30% Investment Tax Credit (ITC) for another 10 years adding new prevailing wage requirements and up to an additional 10% tax credit for projects meeting certain domestic content requirements.

The 30% investment tax credit is monetized in whole at financial close. At financial close, as part of the financing package, an investor puts money into the project in exchange for the tax credits. The federal ITC offers a dollar-for-dollar reduction in taxes, allowing tax equity investors to keep cash they would otherwise pay to the Internal Revenue Service (IRS). Tax equity investors are typically large financial intuitions (e.g., Bank of America, Morgan Stanley) or companies (e.g., Amazon) with large federal tax liabilities.

In addition to federal tax credits, states support offshore wind with Offshore Wind Energy Credits (OREC), PPAs and Infrastructure investments. ORECs and PPAs may be (and typically are) at above market rates. Federal incentives can reduce OREC and PPA prices. Developers (and states) must consider what happens if federal incentives disappear. States must also consider what happens if the federal government creates new incentives (such as with the Inflation Reduction Act in 2022) to make sure their ratepayers benefit, and developers do not end up with windfall profits.

8.1.3 Other Award Criteria in Offshore Wind tender model

The federal government also has incentives for installation ship construction, port development and offshore wind supply chain development. For example, the Department of Transportation's Maritime Administration (MARAD) can provide low-cost financing for domestic shipbuilding and has designated offshore wind vessels as Vessels of National Interest for support. Similarly, MARAD has a Port Infrastructure Development Grant program which can be applied to for offshore wind port development for staging and manufacturing. Note these MARAD programs are separate and independent from BOEM's leasing and permitting and state's offshore wind power procurement activities.

Developers may also sell power (all or a part of wind farm's output) to independent electricity consumers, e.g., Amazon.

8.2 Developers' reflections tender model in United States

Pros -

- > Developers with a lease area may compete in multiple markets (i.e., State procurements), driving up developer interest in lease areas and willingness to fund development (surveys, design, etc.) before securing power offtake.
- > It is the developers' responsibility to undertake environmental and geotechnical surveys, as well as provide project details, needed for project approval. Developers must have their survey plans approved by BOEM and other agencies in advance. This makes sure the government gets all the required data for their review while minimizing the government resources required and avoiding government procurement processes that can be lengthy in the US. This puts the technical, cost and schedule risks on the developers as opposed to the government. It also saves time as the developers do not have to go back and survey things the government did not (for example, the government may assume a different WTG size and spacing than what the developer ultimately uses which may require the developer to undertake additional geotechnical).
- > A competitive approach based on qualitative award criteria involving multiple bids in a single procurement with different capacities, interconnection points, etc. allow states to analyze and choose what is best for the state.

Cons -

- > Offshore Wind development in the US is complicated by the fact that we have both federal and state governments and while they consult with each other, they work independently and have their own goals.

8.3 COWI Reflections on tender model in the United States

Given that States to date have only used PPAs and ORECs that operate like CfDs, federal lease costs are ultimately paid for by state ratepayers in the form of higher electricity prices given that the lease payment go to the federal government (benefiting all US citizens). This is offset by federal investment tax credits that are a cost for all US citizens but benefit state ratepayers through reducing project costs and allowing developers to offer lower electricity prices.

If the federal government and states could align their goals, leasing, and power procurements by, for example, allowing states (as opposed to the federal government) to lease wind areas, the system would be more efficient and likely result in lower prices for ratepayers. The challenge of improving this system is that it would potentially take years to develop and approve a new system given required federal processes for modifications, slowing down offshore wind development in the process.

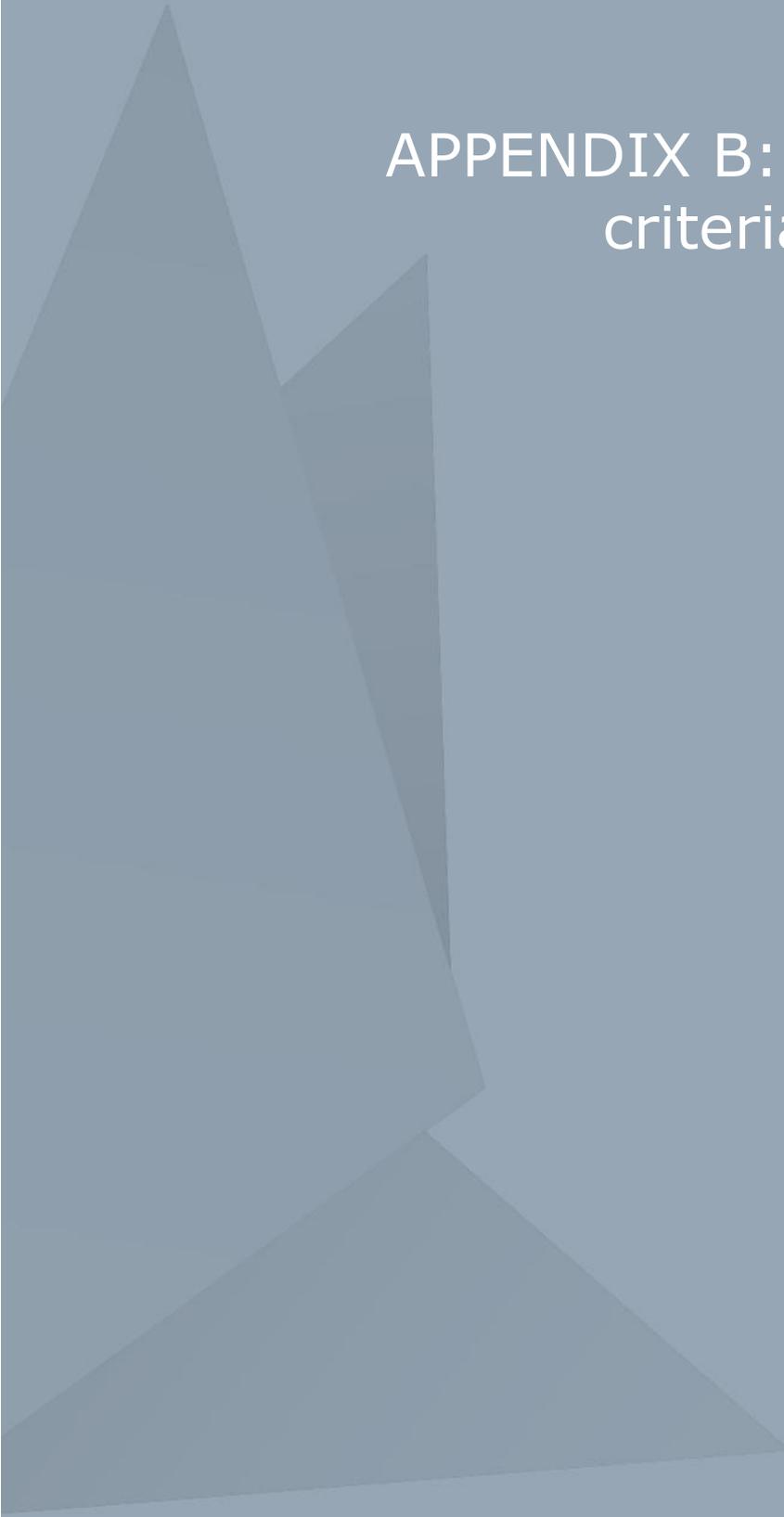
While theoretically it may be less expensive to develop projects without federal government and state labor and local content requirements, these requirements are necessary to secure the political support needed for the nation's and state's offshore wind goals.

Leasing and permitting of projects seem to take a long time in the US. However, the size of the country increases complexity. Developers being responsible for surveys, interconnection, and optimizing projects speed up processes in the US and may potentially speed up processes in Denmark. For reference, the competitive lease sale for what would become Vineyard Wind 1's lease area (OSC-A 501) offshore Massachusetts was in January 2015. Vineyard Wind 1 received its Record of Decision (final approval) from BOEM in May 2021, started onshore construction in November 2021, and is expected to start offshore construction in 2023 and be operational by the end of 2023, 9 years after the original lease auction. Later leases appear to be moving faster, perhaps 1-2 years quicker than Vineyard 1.

Having developers propose multiple bids to states allows states to more quickly find optimum solutions to achieve their goals.

The Five Pillars	Indicator	Description/Question
Sustainability (Lifecycle evaluation, CO ₂)	Sustainability	How does your company see that sustainability can be integrated in the tender evaluation criteria? Which sustainability criteria (e.g., commitment to UN Global compact, carbon footprint, Environmental product declarations and life cycle assessments) should be implemented (if any), and should it be minimum requirements only or qualitative and quantitative criteria? How should the follow-up be on these criteria during the lifetime of the project?
System Integration	System Integration with Power-to-X (PtX)	Integration with PtX has several benefits, which include that there is a less need for electrical backbone grid capacity, there will be reduced losses (when placed offshore) and it will provide export potential to other countries of PtX green gasses products etc. How can integration with PtX projects be specifically implemented and integrated in the tender model and the evaluation criteria, respectively? What is your experience and preferred arrangement in respect to offering system stability support services to the TSO?
Innovation (Techno Economic)	Innovation	What experiences do your company have in describing new or alternative technical/economic solutions in connection with making offers for projects? How have alternative solutions been included/evaluated in tenders? What experiences do your company have in involving universities or other educational institutions right from the start of projects? or involving universities or other educational institutions for concrete tasks on projects?
	Pricing model	Different pricing models are used in different countries / markets. Which pricing element(s) should be used in the tender model? How would you see a pricing model for concession(s) areas in DK would look like? Do you see other pricing models could be applied (i.e., other than pricing for concession(s) areas)?

<p>Economics (auction, risk picture, global competitiveness, cost of criteria)</p>	<p>Tender model and process</p>	<p>Which tender model does your company see as the tender model that works the best and motivates your company's bid submission? Please give reference to an actual tender model and/or describe the model that fulfils it. Can this model be further improved? How?</p> <p>Would you prefer tender processes involving negotiation or competitive dialogue, prefer tenders based on prequalification, and/or do you prefer open tenders?</p> <p>Do you prefer a one or two-stage tender process (e.g., a two-stage approach as applied in UK)</p>
<p>Nature and the environment</p>	<p>Permit and granting process</p>	<p>How do you see the permit and granting process in relation to the tender process?</p> <p>Can the permit and granting process be improved to optimize time and costs?</p> <p>Can you see possibilities for changing the responsibility for different parts of the permit processes in a different way between the parties/stakeholders? Would you be willing to accept (more) own risk related to studies, investigations and assessments needed to fasten processes and award of contract?</p>
	<p>Tender size (GW) and determination of location of site(s)</p>	<p>What is the optimum size (in GW) of each project included in the Tender in terms of optimization with regard to cost, time schedule and integration with PtX projects? Should the Tender include multiple projects or option for multiple phases from a single developer?</p> <p>Should selection of the actual location of the wind farm site(s) be determined by the developer or by DEA?</p>
	<p>Open Door</p>	<p>As an additional mechanism, can the Open-Door model be used to accelerate offshore wind in Denmark and how should this model look like in this case going forward?</p>
<p>Nature and the environment</p>	<p>Nature and the environment</p>	<p>How do you believe Nature and Environment can be evaluated in a future tender model? Does it apply only as minimum criteria?</p> <p>How can innovation be integrated into Nature and Environment in a future tender model?</p> <p>Should the nature and environment requirements be site specific or general?</p> <p>How do you envision the improvement of biodiversity in a specific area?</p>



APPENDIX B: Detailed scoring on criteria (The Netherlands)

Detailed scoring on criteria (The Netherlands)

The tables in this annex include the detailed criteria and scoring as mentioned in the Regulation granting permit wind energy for HKW sites VI and VII. Be aware that criterion 4 is different for site VI and VII: The tender on HKW VI has a specific focus on the ecology, whereas the tender on HKW VII has a focus on system integration. These tables are translated with the EU translation tool and might contain some minor errors. The original source is indicated below each table.

Table: Criterion 1: the amount of the financial offer (Article 25b, second paragraph, part a, of the Act Maximum points: 20

	Qualitative measures	Assessment criterion	Points
1. The amount of the financial offer	The amount of the financial offer	Less than € 2,5 mln	0
		≥ € 2,5 mln and < € 5 mln	1
		≥ € 5 mln and < € 7,5 mln	2
		≥ € 7,5 mln and < € 10 mln	3
		≥ € 10 mln and < € 12,5 mln	4
		≥ € 12,5 mln and < € 15 mln	5
		≥ € 15 mln and < € 17,5 mln	6
		≥ € 17,5 mln and < € 20 mln	7
		≥ € 20 mln and < € 22,5 mln	8
		≥ € 22,5 mln and < € 25 mln	9
		≥ € 25 mln and < € 27,5 mln	10
		≥ € 27,5 mln and < € 30 mln	11
		≥ € 30 mln and < € 32,5 mln	12
		≥ € 32,5 mln and < € 35 mln	13
		≥ € 35 mln and < € 37,5 mln	14
		≥ € 37,5 mln and < € 40 mln	15
		≥ € 40 mln and < € 42,5 mln	16
	≥ € 42,5 mln and < € 45 mln	17	

		≥ € 45 mln and < € 47,5 mln	18
		≥ € 47,5 mln and < € 50 mln	19
		≥ € 50 mln	20

> Source: Official Gazette of the Kingdom of the Netherlands
<https://zoek.officielebekendmakingen.nl/stcrt-2022-7101-n1.html>

Table: Criterion 2: the certainty of realization of the wind farm (Article 25b, second paragraph, part b, of the Act), Maximum points: 40

		Qualitative measures	Assessment criterion	Points
1	The knowledge and experience of the parties responsible for the project management	These parties have carried out project management for offshore wind farms.	These wind farms have a combined capacity of less than 25 MW.	0
			These wind farms have a combined capacity of 25 MW or more	3
2	The knowledge and experience of suppliers of the foundations	These parties have provided foundations for offshore wind farms.	Less than 10 foundations have been delivered	0
			10 or more foundations have been delivered	1
3	The knowledge and experience of installers of the foundations	These parties have installed foundations for offshore wind farms.	Less than 10 foundations have been delivered	0
			10 or more foundations have been delivered	1
4	The knowledge and experience of suppliers of the wind turbines	These parties have supplied wind turbines for offshore wind farms.	Fewer than 10 wind turbines have been delivered.	0
			10 or more wind turbines have been delivered.	1
5	The knowledge and experience of wind turbine installers	These parties have installed wind turbines for offshore wind farms.	Fewer than 10 wind turbines have been installed.	0
			There are 10 or more wind turbines installed.	1
6	The knowledge and experience of suppliers of the cabling that connects	These parties have supplied cabling that has	Cabling supplied for less than 10 connections at sea	0

	the individual wind turbines and connects them to the platform	been used for electricity connections at sea.	Cabling supplied for 10 or more connections at sea	1
7	The knowledge and experience of installers of the cabling that connects the individual wind turbines and connects them to the platform	These parties have installed cabling that connects individual wind turbines and connects them to a platform at sea.	Cabling installed for the connection of less than 10 wind turbines to a platform	0
			Cabling installed for the connection of 10 or more wind turbines to a platform	1
8	The knowledge and experience of parties responsible for the maintenance and operation of the wind farm	These parties have carried out maintenance and operation of offshore wind farms.	Experience with maintenance and operation of offshore wind farms with a combined capacity of less than 25 MW	0
			Experience with maintenance and operation of offshore wind farms with a combined capacity of 25 MW or more	1
9	Financial strength of the applicant(s) responsible for the project	The equity of the party in relation to the investment costs in the wind farm.	The size of the equity is less than 20% of the investment costs in the wind farm.	0
			The amount of equity is at least 20% and less than 40% of the investment costs in the wind farm.	3
			The size of the equity is at least 40% and less than 60% of the investment costs in the wind farm.	6
			The size of the equity is at least 60% and less than 80% of the investment costs in the wind farm.	9
			The amount of equity is at least 80% and less than 100% of the investment costs in the wind farm.	12
			The amount of the equity is at least 100%.	15
10	Financial guarantees from the group	The parent organisation(s) have issued a	The guarantee is issued for an amount of less than € 100,000,000.	0

		parent company guarantee that meets the following requirements:	The guarantee is issued for an amount of at least € 100,000,000 and less than € 200,000,000.	3
		-the guarantee must be given unconditionally	The guarantee is issued for an amount of at least € 200,000,000 and less than € 300,000,000.	6
		-the guarantee must be governed by Dutch law	The guarantee is issued for an amount of at least € 300,000,000 and less than € 400,000,000.	9
		-the guarantee must apply during the entire construction time of the wind farm.	The guarantee is issued for an amount of at least € 400,000,000 and less than € 500,000,000.	12
			The guarantee is issued for an amount of at least € 500,000,000.	15

> Source: Official Gazette of the Kingdom of the Netherlands
<https://zoek.officielebekendmakingen.nl/stcrt-2022-7101-n1.html>

Table: Criterion 3: the contribution of the wind farm to the energy supply (Article 25b, second paragraph, part c, of the Law), Maximum points: 40

		Qualitative measures	Assessment criterion	Points
1	The contribution of the wind farm to the energy supply	The calculated P50 value ³⁵ for net electricity production per year supplied to the offshore grid	Less than 3,000,000 MWh per year	2
			Equal to or greater than 3,000,000 MWh and less than 3,100,000 MWh per year	8
			Equal to or greater than 3,100,000 MWh and less than 3,200,000 MWh per year	16
			Equal to or greater than 3,200,000 MWh and less than 3,300,000 MWh per year	24
			Equal to or greater than 3,300,000 MWh and less than 3,400,000 MWh per year	32
			Equal to or more than 3,400,000 MWh per year	40

Source: Official Gazette of the Kingdom of the Netherlands <https://zoek.officielebekendmakingen.nl/stcrt-2022-7101-n1.html>

³⁵ P50 value for net electricity production: the expected annual energy production for a given combination of location and installation for the production of renewable electricity using wind energy, which must be determined with a probability of 50%

Table: Criterion 4 specifically for HKW VI: the contribution to the ecology of the North Sea (Article 25b, third paragraph of the Law and Article 7, second paragraph of the Regulation), Maximum points: 100

		Qualitative measures	Assessment criterion	Subcategories	Points	
1	Stimulating investments in the wind farm on site VI in addition to the measures prescribed in the site decision VI Hollandse Kust (west) for the benefit of the biodiversity naturally occurring in the Dutch North Sea (species, populations and habitats)	<p>The investments contribute (potentially) to:</p> <ul style="list-style-type: none"> • limiting negative impacts on the conservation of species and populations protected under the EU Birds (VR) and Habitats (HR) Directives <p>or</p> <ul style="list-style-type: none"> • promoting positive impacts on the conservation of marine habitat types of the EU Habitats Directive <p>or</p> <ul style="list-style-type: none"> • promoting positive effects on environmental status (EU Marine Strategy Framework Directive; KRM) in the Dutch North Sea for 'fish community' and/or 'benthic habitats'. <p>The investments are integrated into the design, construction and operation of the production installation to be realized by the permit holder (including erosion protection</p>	<p>Potential impact of the investment for the wind farm on site VI on:</p> <ul style="list-style-type: none"> • limiting negative effects on the conservation of species and populations (VR/ HR). <p>or</p> <ul style="list-style-type: none"> • promoting the conservation of marine habitat types (HR) and/or (WFD; fish community; benthic habitats) in the Dutch North Sea. 	<p>The potential impact of the investments on reducing or preventing negative effects on the populations of the species referred to in Appendix I of the site decision referred to in section 7.5.8. of the Kavelbesluit VI Hollandse Kust (west)</p>	0-6	0-30
		<p>The potential impact of the investments on promoting:</p> <ul style="list-style-type: none"> • a nationally favourable conservation status of marine habitat types H1110 or H1170 (HR) <p>or</p> <ul style="list-style-type: none"> • of good environmental status (MSFD) in the Dutch North Sea for fish community (overarching or D1C2 or D1C3) 	0-4			

		and park cabling) within the wind farm on lot VI.		or for benthic habitats (overarching or D6C3 or D6C5), as formulated in Marine Strategy, part 1 (2018)		
		The permitted (bandwidth of) turbine dimensions, the number of turbines and the maximum rotor area per lot, as binding laid down in regulation 3 of the site decision, are not taken into account.	The degree to which it is plausible that the investment can be successfully applied in an operational environment		0-10	
		The investment must have been put into operation no later than 60 months after the licence becomes irrevocable.	The extent to which it is clear which specific, measurable and time-bound progress the investment will know and how this will be made known when the investment is carried out		0-10	
		The extent to which knowledge and experience is shared about the investments.	The extent to which knowledge and experience contributes to knowledge gaps (e.g. from the EIA of site VI) and takes place in good connection with existing research projects		0-10	
		The intended ecological knowledge and experience is relevant for:				
		<ul style="list-style-type: none"> wanting to limit negative impacts on the conservation of species and populations protected under the EU Birds and Habitats Directives (HR) 				
		or	The quality of a dissemination and communication plan, including the extent to which the dissemination and communication plan describes the knowledge to be shared, specifically, measurable and time-			

		<ul style="list-style-type: none"> • promoting positive impacts on the conservation of marine habitat types of the EU Habitats Directive <p>or</p> <ul style="list-style-type: none"> • promoting positive effects on environmental status (EU Marine Strategy Framework Directive; KRM) in the Dutch North Sea for 'fish community' and/or 'benthic habitats'. 	bound; and the extent to which the target groups have been identified and the resources that match them.			
2	Stimulating innovation and the development of solutions for the naturally occurring biodiversity (species, populations and habitats) in the Dutch North Sea from the wind farm on site VI of and future Dutch offshore wind farms	<p>A contribution to the development or demonstration of innovative solutions for:</p> <ul style="list-style-type: none"> • mitigation of negative impacts on the conservation of species and populations protected under the EU Birds and Habitats Directives (HR) <p>or</p> <ul style="list-style-type: none"> • reinforcing positive impacts on the conservation of marine habitat types of the EU Habitats Directive <p>or</p> <ul style="list-style-type: none"> • promoting positive effects on environmental status (EU Marine Strategy Framework 	<p>Potential impact of the contribution to the development or demonstration of the innovation from the wind farm on site VI and offshore wind farms in the future if the innovation is made market-ready on:</p> <ul style="list-style-type: none"> • limiting negative effects on the conservation of species and populations (VR/ HR). <p>or</p> <ul style="list-style-type: none"> • promoting the conservation of marine habitat types (HR) and/or environmental status (MSFD; fish community; benthic habitats). 	<p>The potential impact of the innovation or knowledge development on reducing or preventing negative effects on the populations of the species referred to in Appendix I of the site decision referred to in section 7.5.8. of The Dutch Coast (West) Site Decision</p>	0-12	0-50
				<p>The potential impact of the innovation or knowledge development on promoting:</p> <ul style="list-style-type: none"> • a nationally favourable conservation status of marine habitat types H1110 or H1170 (HR) 	0-6	

		<p>Directive; KRM) in the Dutch North Sea for 'fish community' and/or 'benthic habitats'</p> <p>For each demonstration, there must be at least a prototype in an operational environment (TRL7) in the form of a pilot at the time of the demonstration.</p> <p>Other innovations and solutions cannot be overcome at a TRL level should be sufficiently developed for use in an operational environment.</p> <p>The demonstration and applications of solutions must be put into operation no later than 60 months after the authorisation becomes irrevocable.</p> <p>The innovations are integrated into the design, construction and operation of the production installation to be realized by the permit holder (including erosion protection and park cabling) within the wind farm on site VI.</p> <p>The permitted (bandwidth of) turbine dimensions, the number of turbines and the maximum rotor area per site, as binding laid</p>		<p>or</p> <ul style="list-style-type: none"> • good environmental status (MSFD) in the Dutch North Sea for fishing community (overarching or D1C2 or D1C3) or benthic habitats (overarching or D6C3 or D6C5, as formulated in Marine Strategy, part 1 (2018)) 		
			<p>The extent to which the innovation is innovative and resourceful compared to the currently best products, services or processes available on the market</p>		0-8	
			<p>The extent to which the innovation is based on the most up-to-date scientific knowledge at the time of submitting the application</p>		0-8	
			<p>The extent to which it is made plausible that the innovation can be successfully applied in an operational environment, on the one hand by substantiation from the literature, on the other hand by monitoring the effectiveness</p>		0-8	

	down in regulation 3 of the site decision, are not taken into account.	after the implementation of the pilot			
		The extent to which it is clear which specific, measurable and time-bound progress the demonstration will have and how this will be made known when the innovation is implemented		0-8	
	The extent to which knowledge and experience is shared about the innovation being demonstrated The intended ecological knowledge and experience is relevant for: • wanting to limit negative impacts on the conservation of species and populations protected under the EU Birds and Habitats Directives (HR) or • promoting positive impacts on the conservation of marine habitat types of the EU Habitats Directive or	The extent to which knowledge and experience contributes to knowledge gaps (e.g. from the EIA of site VI) and takes place in good connection with existing research projects			0-10
		The quality of a dissemination and communication plan, including the extent to which the dissemination and communication plan describes the knowledge to be shared, specifically, measurable and time-bound; and the extent to which the target groups have been identified and the resources that match them			

		<ul style="list-style-type: none"> • promoting positive effects on environmental status (EU Marine Strategy Framework Directive; KRM) in the Dutch North Sea for 'fish community' and/or 'benthic habitats'. <p>At the time of submission of the application, the contribution must be additional to or in close coordination with existing research.</p>				
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Source: Official Gazette of the Kingdom of the Netherlands <https://zoek.officielebekendmakingen.nl/stcrt-2022-7101-n1.html>

Table: Criterion 4 specifically for HKW VII: the contribution to the integration of the wind farm into the Dutch energy system (Article 25b, third paragraph of the Act and Article 7, second paragraph, of the Regulation), Maximum points: 100

		Qualitative measures	Assessment criterion	Points
1	Stimulating investments for the integration of the wind farm on site VII in the Dutch energy system	The investment, and immediately related resources, that contributes to increasing the scalable flexible demand that matches the delivery profile of site VII	Potential impact of the investment on the integration of the wind farm on site VII of Hollandse Kust (west)	60
		Geographical distance to the landing point is not taken into account. The investment will be carried out on site VII or Dutch territory.	The degree to which it is plausible that the investment can be successfully applied in an operational environment	
		The investment must be put into use no later than 60 months after the permit becomes irrevocable.	The extent to which it is clear which specific, measurable and time-bound progress the investment will know and how this will be monitored and made known when the investment is carried out	
		The extent to which knowledge, experience is shared about investment being executed	The extent to which knowledge and experience is shared that contributes to knowledge gaps or takes place in close coordination with or facilitates existing research	10
			The quality of a dissemination and communication plan, including the extent to which the dissemination and communication plan describes the knowledge to be shared, specifically, measurable and time-bound; and the extent to which the target groups have been identified and the means of dissemination communication are in line with them	
2	Stimulating innovation for the integration of the wind farm on site VII, existing and future offshore wind	The demonstration of innovation that contributes to increasing the scalable flexible demand that	Potential impact of the innovation on the integration of the wind farm on site VII of Hollandse Kust (west) and offshore wind farms in the future if the innovation is made market-ready	20

farms in the Dutch energy system	<p>matches the delivery profile of site VII</p> <p>For each demonstration, there must be at least a prototype in an operational environment (TRL7) in the form of a pilot at the time of the demonstration.</p> <p>The demonstration must start no later than 60 months after the permit becomes irrevocable. The geographical distance to the landing point shall not be taken into account. The demonstration will take place on site VII or Dutch territory.</p>	<p>The extent to which the innovation is innovative and resourceful compared to the currently best products, services or processes available on the market</p>	
		<p>The extent to which it is plausible that the innovation can be successfully demonstrated in an operational environment</p>	
		<p>The extent to which it is clear what specific, measurable and time-bound progress the demonstration will have and how it will be monitored and made known during the implementation of the innovation</p>	
	<p>The extent to which knowledge, experience is shared about the innovation being demonstrated</p>	<p>The extent to which knowledge and experience is shared that contributes to knowledge gaps or takes place in close coordination with or facilitates existing research.</p> <p>The quality of a dissemination and communication plan, including the extent to which the dissemination and communication plan describes the knowledge to be shared, specifically, measurable and time-bound; and the extent to which the target groups have been identified and the means of dissemination communication are in line with them</p>	10

Source: Official Gazette of the Kingdom of the Netherlands [Staatscourant 2022, 7093 n1 | Overheid.nl > Officiële bekendmakingen \(officielebekendmakingen.nl\)](#)



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