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THE ENERGY SECURITY AND INNOVATION NEXUS

Towards a New Regulatory Framework for Offshore Wind Energy Development

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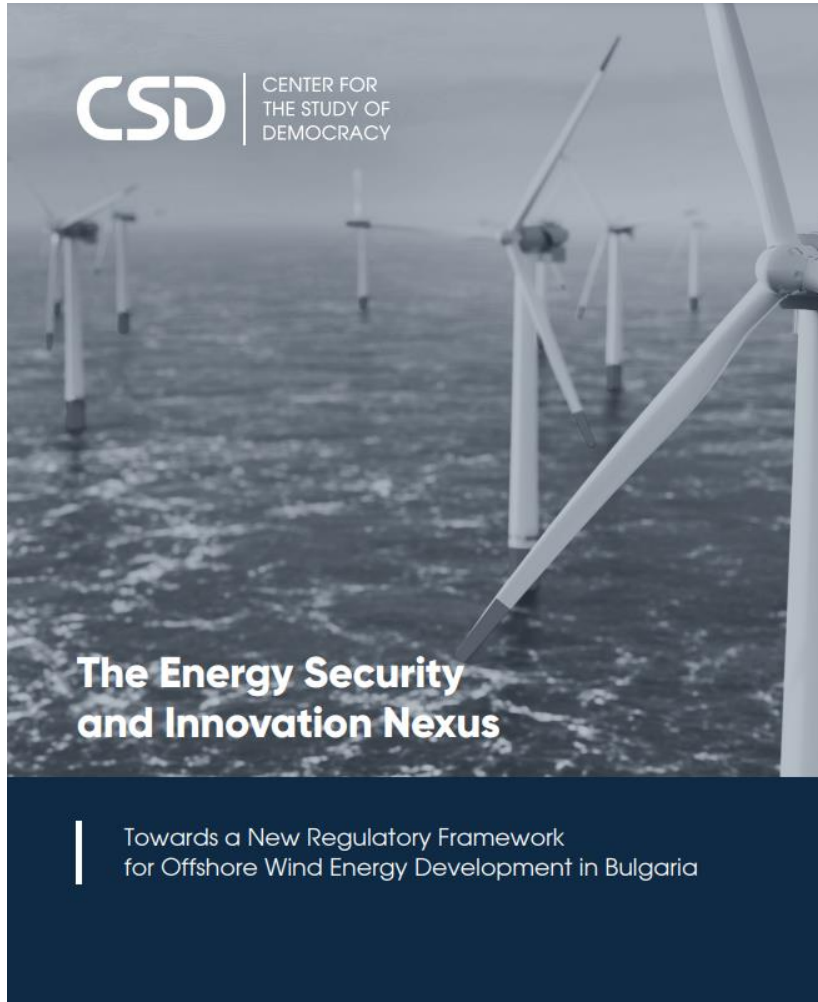
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Technical Offshore Wind Potential in Bulgaria

Source	Year	Assumptions	Bottom-Fixed (GW)	Floating (GW)	Total Potential (GW)
World Bank	2019	<ul style="list-style-type: none"> Only selected areas considered Water depth up to 50 m - fixed Water depth up to 1000 m - floating Distance from shore - up to 200 km Wind speed at approx. 7m/s 	2	24	26
JRC, ENSPRESO Database	2019	<ul style="list-style-type: none"> Low restrictions, 100 m height Water depth up to 60 m - fixed Water depth up to 1000 m- floating Capacity Factor > 25% 	24.4	38.4	62.8
Falcan et al. EC Publication Office	2022	<ul style="list-style-type: none"> Meteorological data COSMO-REA6, 150 m Spatial constrains: military zones, nature protection areas and major shipping routes, 5 km distance to tourism area considered 			176
GREEN-X Model		1.2 GW in fixed-platform offshore wind potential based on GIS modelling without consideration of technical (power system) constraints but with sea use limitations			
CSD Assessment	2021	<ul style="list-style-type: none"> Bulgarian EEZ limited by military bases, shipping lanes and areas at water depth > 1000m Water depth between 10 and 60 m - fixed Wind speed > 7 m/s at 150 m 	26		116

Developing an Offshore Energy Regulatory Framework in Bulgaria



Main objectives of the assessment:

- To analyze regulatory practices of the industry's leading countries as well as recent legislative choices of emerging markets
- To outline the common international and EU legal framework concerning marine energy
- To draw out the contours of the Bulgarian offshore energy regulatory framework





Countries covered:



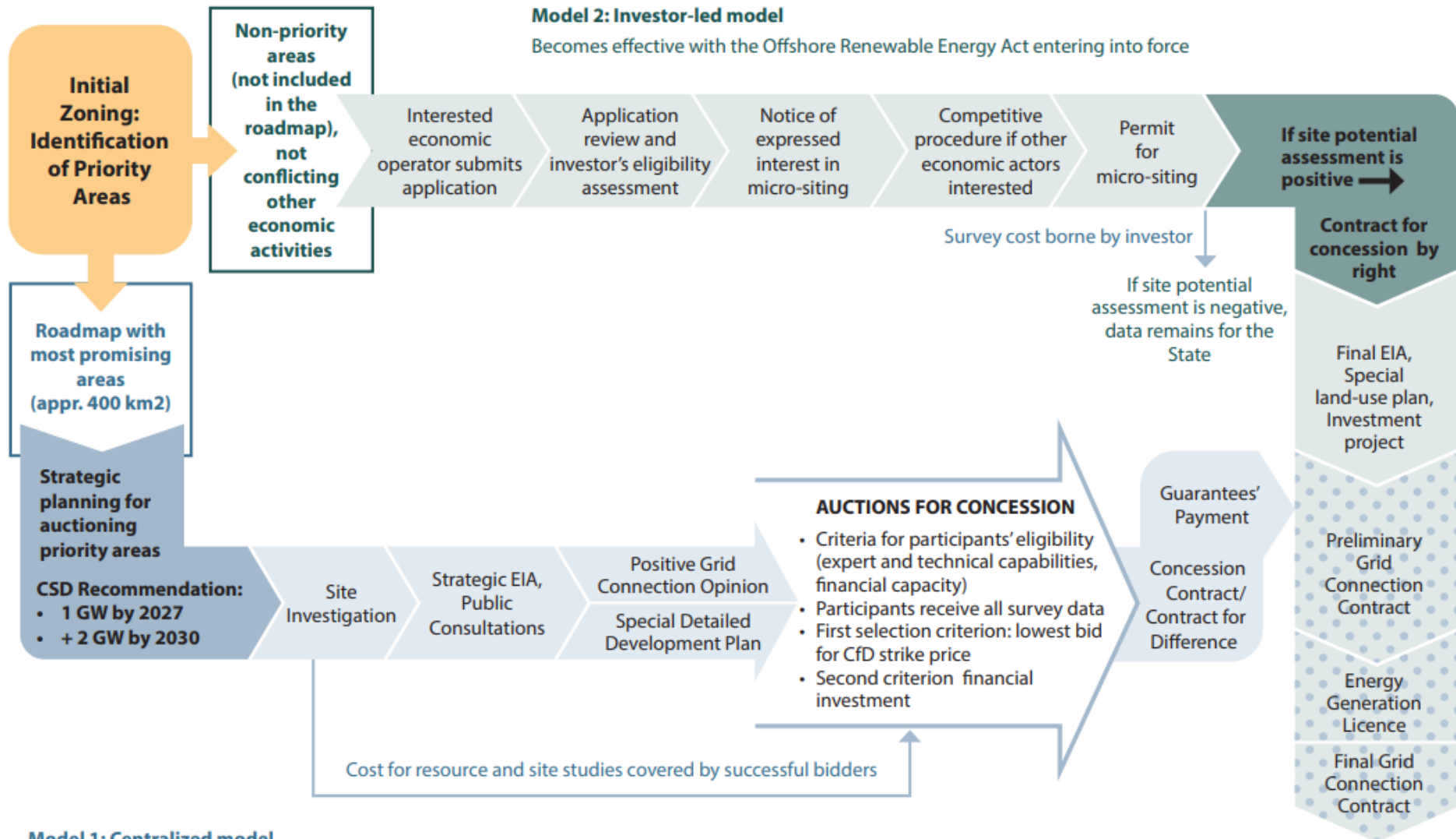
Aspects covered:



Main Findings of the Comparative Legal Review

Country	Site Identification Model	Site Development Model	Permitting	Grid Connection		Investment Incentives	Sustainability Criteria
				Offshore	Onshore		
	Developer-led site identification within bidding areas, whose boundaries are based on the Crown Estate's resource and constraints analysis	Leases for offshore wind sites	5 permits	Developer build or OFTO build and operated	TSO (Cost borne by developers)	CfD granted by Low Carbon Contracts Company for 15 years, only positive strike prices	60% UK content in offshore wind projects to attract new investments in local manufacturing
	Centralized based on a 'Site development plan' prepared by the Federal Maritime and Hydrographic Agency	Transition from developer-led model to centralized approach	1 permit	TSO financed, build and operated	TSO	Auctions with PPAs for 15 years, considering qualitative criteria and without support.	Use of green electricity and hydrogen in turbines' manufacturing ('green steel') + minimal noise during the construction + local employment
	Centralized , conducted by the Danish Energy Agency (DEA); several screenings of Danish waters and GIS-based sensitivity analysis performed so far	Both, developer-led and centralized by the DEA and Energinet	4 permits	Developer	TSO (Cost borne by developers)	Feed-in premium (sliding) 15 years (+1 year for banking if full load hours not met)	Sustainability and innovation criteria under discussion
	Centralized based on the Offshore Wind Energy Roadmap	Centralized in coordination with different stakeholder groups	1 permit	TSO based on 5 centralized offshore platforms	TSO	3 tender models available (subsidized via feed-in-premium for 15 years, Subsidy-free based on ranking & negative subsidy)	Non-price criteria with a focus on ecology and system integration included in the latest auction rounds, however site-specific.

Proposed Concept for a Bulgarian Offshore Energy Legislative Framework



Catalogue of 20 Policy Recommendations

Signal to Industry Players	Administration & Competence	Planning & Site Identification	Site Development Strategy
<ul style="list-style-type: none"> ✓ Integrate offshore wind energy deployment targets into existing strategic documents. ✓ Design a special law promoting renewable energy at sea. ✓ Develop a consistent energy and climate security strategy that avoids the traps of shortsighted political goals. 	<ul style="list-style-type: none"> ✓ Appoint an interdisciplinary, cross-institutional state authority under the jurisdiction of the Bulgarian Council of Ministers to serve as a one-stop shop for project developers. 	<ul style="list-style-type: none"> ✓ Develop an Offshore Energy Site Development Plan delimitating priority areas + planned timeline for their utilization. ✓ Determine capacity density based on site-specific conditions for the priority areas to ensure an scarce surface optimization. ✓ Update the NMPS with designated zones for OWE and in coordination with neighboring countries. 	<ul style="list-style-type: none"> ✓ Consider the centralized and an open-door site development models ✓ Conduct detailed micro-siting for the priority areas to obtain site-specific data at optimal cost. ✓ Avoid seabed lease fees for the open-door procedure. ✓ Enable competition between industry players in both site-development models. ✓ Explore opportunities for regional cooperation.
Permitting	Grid Connection	Environmental Consenting	Investment Incentives
<ul style="list-style-type: none"> ✓ Permitting procedures could follow the existing legislative practices but the deadlines to offshore wind development specifics should be adjusted. ✓ Improve transparency, introduce clear timelines for the issuing of the permits and for the resolution of conflicts. 	<ul style="list-style-type: none"> ✓ Allocate the responsibility for on- & offshore grid planning to the TSO in sync with the OWE development plans. ✓ Integrate EU plans for offshore grid corridors into current grid development planning to avoid competition among RES operators for grid capacity. ✓ Ensure binding grid connection deadlines. ✓ Determine clear rules for cost compensation to investors that have developed grid infrastructure. 	<ul style="list-style-type: none"> ✓ Incentivize offshore wind co-existence with other interests at the sites. ✓ Determine clear rules for decommissioning, adequate guarantees payments and penalties for environmental damage caused or non-compliance with environmental or decommissioning standards. 	<ul style="list-style-type: none"> ✓ Apply a Contracts for Difference (CfD) support scheme to stabilize offshore wind farm income per unit generated electricity and to avoid over-subsidizing in periods with high wholesale power prices.



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Thank you!

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