

TOWARDS A NEW REGULATORY FRAMEWORK FOR OFFSHORE WIND ENERGY DEVELOPMENT IN BULGARIA

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In the aftermath of the Russian invasion in Ukraine, it is imperative that European countries embark on a new energy policy pathway towards independence from fossil fuel imports. Unlocking the full potential of the European seas for offshore wind energy would play a key role in achieving the EU's energy and climate security targets in the coming decades until 2050.

Bulgaria is the only littoral EU member state yet to begin developing the sector. This may be changing, though. In March 2022, members of the energy committee in the National Assembly from all political parties rallied around the creation of a legislative framework for tapping the highest feasible share of the country's **116 GW technical offshore wind energy potential**.¹ This policy brief outlines the main elements of a possible offshore wind energy regulatory framework for Bulgaria.

The adoption of a special law, a Bulgarian **Offshore Renewable Energy Act**, would be the optimal approach to avoid potential conflicts with other existing legislative acts and secondary legislation. The law would serve to coordinate the competencies of the authorities that govern the different phases of offshore wind project implementation (including planning, construction, operation and decommissioning of power generation facilities at sea). The law will open up market competition and would attract experienced companies from mature markets in Europe. It would guarantee that the Bulgarian government will be positioned to develop the areas with the best natural wind energy potential in the Bulgarian section of the Black Sea at the lowest cost for society and in the most sustainable manner.

KEY POINTS

- Unlocking the full potential of the European seas for **offshore wind energy** would play a key role in achieving the EU energy and climate security targets.
- Bulgaria should ensure offshore wind is part of the country's **long-term energy policy vision** by including it in the country's strategic policy framework.
- There is a need for a **special offshore wind energy law** reflecting the experience of mature markets in Europe.
- A central government **one-stop shop for prospective investors** should coordinate the spatial planning, auctioning and permitting procedures.
- The application of the **centralized model** enables more developers to compete for the most **attractive slots** in the Bulgarian Black Sea section.
- **Competitive auctions** will ensure the development of offshore wind energy projects at the **lowest costs per generated unit of electricity**.
- **Contracts for Difference are the main mechanism** for supporting offshore wind power, which would stabilise the revenues of the operator at a pre-agreed level for the duration of the contract.
- The development of the sector would depend on the timely **expansion of the onshore grid capacity** and the construction of offshore grid infrastructure via fair **cost allocation** between the network and plants' operators.

¹ Trifonova, M., and Vladimirov, M., *Wind Power Generation in Bulgaria. Assessment of the Black Sea Offshore Potential*, Sofia: Center for the Study of Democracy, 2021.

Strategic Fit and Regulatory Competence

As a first step, the Bulgarian government should make sure that offshore wind is part of the country's **long-term energy policy vision** by including it in the existing strategic documents. Bulgaria should set clear targets for the addition of offshore wind energy-based power plants in the revised version of its National Energy and Climate Plan. This will send a clear signal to potential investors in the sector and prevent project development bottlenecks linked to the frequent lack of coherence in the country's energy policy.

The inclusion of **minimum deployment levels** would also be a crucial element of the proposed Offshore Renewable Energy Act. It is a common practice that special offshore wind energy laws stipulate a minimum amount of offshore wind-based electricity to be procured from renewable plant operators. Based on the techno-economic assessment of the offshore wind potential, the law should plan auctions initially for **areas with a minimum of 1 GW capacity until 2027** and another **2 GW by 2030**. These figures correspond to the decarbonisation needs of the Bulgarian energy system until the end of the decade, while ensuring a basic level of market scale and steady growth.

To accelerate the development of the sector, the law needs to create special competence over the various aspects of maritime planning and offshore wind project preparation, implementation, and monitoring. This is currently scattered between four Bulgarian ministries: the Ministry of Energy, the Ministry of Regional Development and Public Works, the Ministry of Transport, and the Ministry of Environment and Water, as well as between several executive agencies. Therefore, the new law should feature the creation of an interdisciplinary, cross-institutional state authority, the **Inter-Ministerial Expert Committee for Offshore Renewable Energy Development (IECORED)**, which could serve as a one-stop shop for investors. Established as a permanent advisory body of the Council of Ministers, it would coordinate the process of planning, construction, and operation of offshore wind power plants.

Site Development and Planning

To maximize societal and economic benefits, the legislative framework for offshore wind energy should integrate the **two, alternative site-development approaches** established in the European practice (see Fig. 1). Since the areas in Bulgaria's section of the Black Sea, which can be more easily exploited by off-

shore wind energy developers, are limited in size, the most **promising zones should be auctioned off**. The Bulgarian government should allow prospective investors to propose developing the areas at the lowest possible costs for electricity generation from the new facilities.

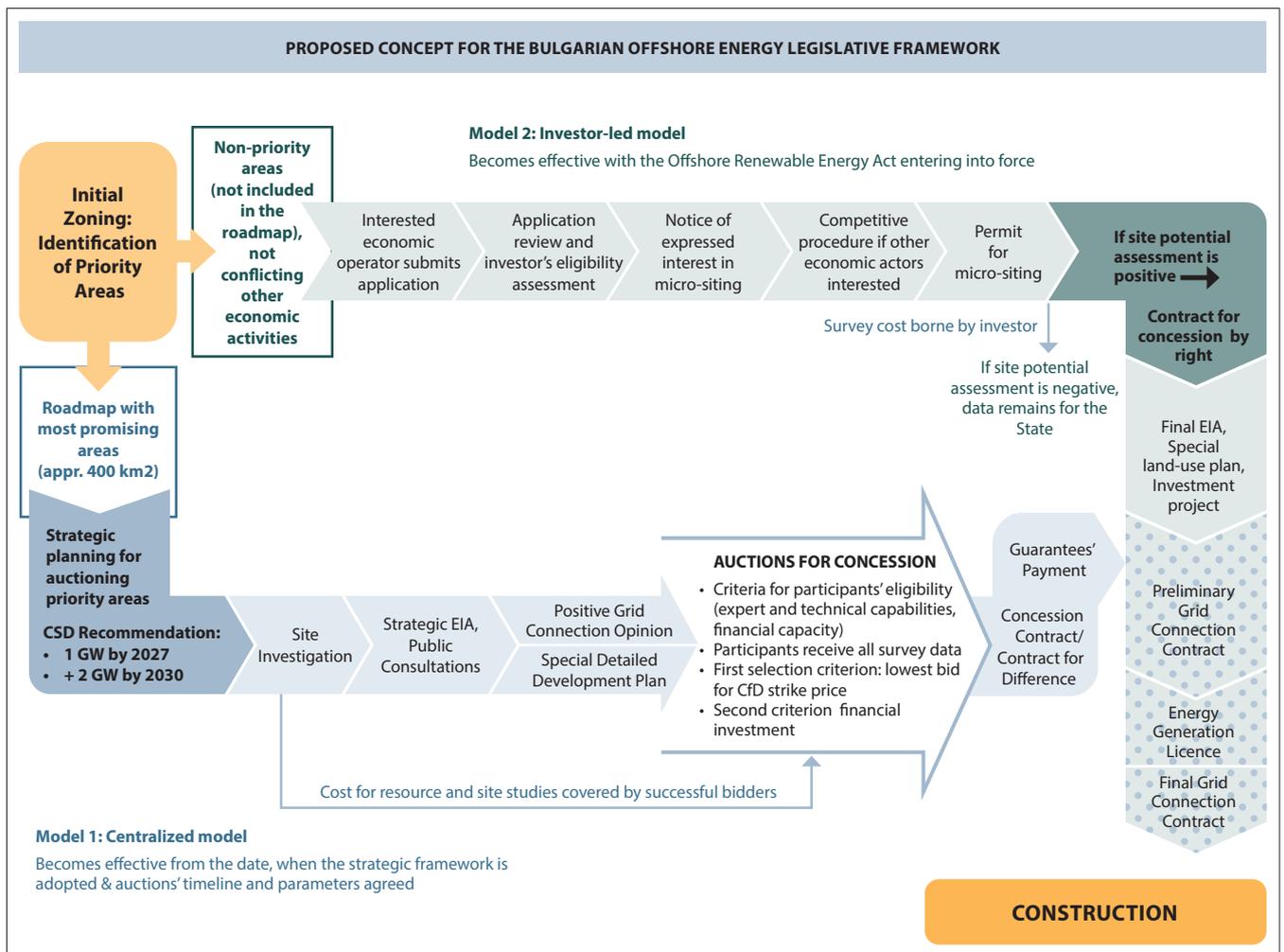
The **centralized model** envisions IECORED in collaboration with other competent authorities to carry out the identification of priority areas and to ensure grid access prior to the auctioning of the site. The developers enter the process at the pre-construction phase only if they submit a bid with the lowest strike price in Contract for Difference (CfD) auctions for a specific area. The participants in the auctions that are eligible to compete in terms of pre-defined financial, economic, and technical criteria, receive the project documentation for each site, which encompasses the data collected by IECORED during the micro-siting, including on available wind resources, water depth, seabed characteristics, environmental sensitivities, and other constraints. As a result, the centralized model eliminates entry barriers to competitors as they gain access to the same information. The costs for the resource and site-specific studies, calculated proportionally to the size of the auctioned area, and incurred by government authorities, are then compensated by the successful bidders.

The latter group then sign a concession agreement with the Minister of Regional Development and Public Works and deposit project implementation, environmental, and decommissioning guarantees. The Bulgarian Energy and Water Regulatory Commission (EWRC), with the technical support of IECORED, would manage the auctions in order to guarantee a fair outcome based on objective evaluation criteria.

In parallel to the centralized model, the proposed legal concept foresees an **open-door procedure (investor-led model)**, in which offshore wind developers conduct all the preliminary studies for areas without priority status. They would then receive exclusive rights for offshore wind power plant development and operation if the studies have proven the sites' feasibility. The exclusive rights are guaranteed by a concession regime for the offshore wind power plants' construction and operation, granted by right of the holder of the site investigation permit.

Interested investors initiate the procedure by applying to IECORED, which reviews the eligibility of the applicants based on technical, financial, and economic pre-qualification criteria and examine potential con-

Figure 1. Site-development models in the proposed concept for offshore energy legislation in Bulgaria



Source: CSD.

flicts between the offshore wind energy development in the given area and other economic activities in its vicinity. To guarantee a competitive open-door procedure, IECORED shall publish a notice of expressed interest for a non-priority area and invite other interested developers to submit competitive applications for site investigation and development before granting a site investigation permit and the subsequent construction concession to the initial applicant.

The application of the centralized model enables more developers to compete for the most attractive slots in the Bulgaria's Black Sea areas. In this way, the Bulgarian government would attract experienced technology companies to develop offshore wind projects at competitive prices. The open-door procedure would enable site investigation and project implementation in non-priority areas, which could take place simultaneously with more legislatively advanced neighboring countries while tenders for priority areas are still under preparation.

The preparation of the **Offshore Energy Site Development Plan** would be the tool to communicate the results of the initial zoning process and to turn the delimitation of priority areas into binding arrangements. After the initial identification of priority areas, these are “reserved” for additional investigation. The reservation of the most attractive sites would prevent interested offshore wind investors from occupying these areas via the open-door procedure. The priority areas would be designated for concessions via scheduled auctioning rounds as described in the previous section. If the studies assess a priority area or part of it as unsuitable for wind power generation, it receives the status of “non-priority”. Non-priority areas could be selected by an interested investor and further investigated at the developer’s cost unless they are in conflict with other economic activities.

The Offshore Energy Site Development Plan should be aligned or even integrated into the Bulgarian Maritime Spatial Plan. In the current version of the latter plan,

the offshore wind energy sector is not mentioned. There are no activities planned related to offshore wind energy development, and there are no geographical zones designated for the development of offshore wind projects.

Grid Access

The development of Bulgaria's offshore wind energy potential would depend on the timely expansion of the onshore grid capacity, and the construction of offshore grid infrastructure via fair cost allocation between the network and power plants' operators. As a first step, the new legal framework should allocate the responsibility to the national TSO for onshore and offshore grid planning in sync with offshore wind site development plans.

Furthermore, the responsibility for offshore energy planning will soon stem from European legislation. According to the recent Council's proposal amending the Renewable Energy Directive, member states sharing a sea basin will be obliged to carry out joint offshore energy planning, ensuring the associated integrated grid development, and to share cross-border offshore wind projects. The first steps to facilitate cross-border offshore network cooperation are already envisioned and expected to enter into force in 2022 via the Regulation (EU) 2022/869 on guidelines for trans-European energy infrastructure. As a consequence, the European Network of Electricity Transmission System Operators (ENTSO-E) will prepare plans to develop an integrated offshore network in compliance with European Green Deal strategies. Five priority offshore grid corridors will be established, among which is the South and East offshore grid corridor, connecting Bulgaria, Croatia, and Romania in addition to other four countries.

In light of the bottlenecks for large-scale renewable energy expansion created by the slow grid development in Bulgaria, **a developer-led model of offshore infrastructure provision** is recommended. The operators chosen by the concession procedure are obliged to build the required network infrastructure up to the point of connection at their own expense, observing the technological parameters and guidelines of the TSO. The TSO reserves the right to acquire the offshore network infrastructure for a fair compensation of verified costs.

Bulgarian policy-makers should include in the proposed concept for the Offshore Wind Energy Act an

additional responsibility for IECORED to obtain from the TSO all necessary grid connection technical feasibility statements and permits before the auctions for concessions in the priority areas take place. Before investors commit to project planning and realization, they should acquaint themselves with binding grid connection deadlines and clear preliminary grid connection contract conditions.

Investment Incentives

An effective regulatory framework for offshore wind should **introduce competitive auctions** that will ensure the development of offshore wind energy projects at the lowest cost per generated unit of electricity. The auction price represents a strike price under a CfD that is included in the concession agreement. CfDs are applied as the main mechanism for supporting offshore wind electricity generation, and would stabilize the revenues of the power plant operator at a pre-agreed level for the duration of the contract.

The concession holder is obliged to offer the entire amount of electricity produced on an organized electricity exchange. The compensation is estimated as the difference between the average monthly price at the day-ahead market segment and the strike price. The CfDs are signed with the Bulgarian Energy Security System Fund, which receives payback amounts from the offshore wind farm operators during periods with high market prices, or pays out a compensation when the wholesale market price falls below the strike price.

For example, for the three months from November 2021 to January 2022, when power market prices were breaking records, offshore wind power plants under the CfD scheme in the United Kingdom have paid back over EUR 130 million to energy suppliers. The British think tank Onward estimates that CfD supported renewables could pay back EUR 11.8 billion a year to customers by 2027.

Since participants in offshore wind auctions worldwide increasingly forego the financial support provided by the state, the inclusion of a second criterion for assessing the bids with **equal or zero-subsidy price** has become a common practice. Such a criterion could be an investment in a sustainable development project that represents a valuable contribution to the region close to the offshore wind area.

What's Next: Unlocking Offshore Wind Energy for Energy and Climate Security

In the context of the military conflict in Ukraine and the growing risks to Europe's energy and climate security, renewables are strengthening energy independence and improving the resilience of energy systems. Bulgaria needs to act now and harness at least 26 GW of its technical potential for offshore wind development with mature bottom-fix technologies. The offshore energy industry could make a significant contribution to coastal communities by creating highly skilled jobs, forming new technology clusters, and developing local equipment supply chains. Hence, there is an urgent

need for national strategic documents to recognize the potential of Bulgarian maritime areas for the low carbon transition of the energy sector.

A new regulatory framework is necessary to unlock the potential for investment in offshore wind projects in the Black Sea. This would include the adoption of administrative and regulatory changes to attract long-term investment in this sector. The European Offshore Wind Strategy recognizes all of these untapped opportunities in the Black Sea. It also offers a timely opportunity to finance the emergence of an offshore wind industry in Bulgaria through the financial mechanisms of the European Green Deal.

