The 128-gigawatt tug

by Andrzej Urbaś, *External Consultant, Actia Forum*

In J.M.W. Turner's painting, *The Fighting Temeraire*, a venerable warship, a symbol of a fading era, is being towed to its dismantling yard by a diminutive, yet powerful, steam-driven tugboat. One can view it as a parallel to the energy transition considered by some to be on the verge of sweeping the Baltic Sea. Can the tugboat of renewable development haul the entire region toward a significant shift in maritime logistics, port investment, and environmental stewardship?

To navigate this shift, industry stakeholders require clarity and context. The comprehensive analysis, ***Development of OWE in the Baltic Sea***, published by Actia Forum, provides essential insights, charting the course of development across the region's EU nations.

The report maps the disparity between current operational capacity and the staggering scale of planned projects, confirming the rather ambitious nature of the challenge faced by the EU Baltic Sea region – to achieve the estimated offshore wind energy (OWE) potential of about 93 gigawatts (if not more!).

The framework

The sheer volume of OWE development is guided by a high-level political consensus across Europe. The momentum is underpinned by strategic agreements, including the Marienborg Declaration (31 August 2022) and the Vilnius Declaration (10 April 2024). These political milestones led to the formalization of regional commitment under the Baltic Energy Market Interconnection Plan offshore grids (BEMIP).

In December 2024, the ministries of energy of the respective EU Member States reached non-binding agreements on updated goals for offshore renewable energy deployment, establishing intermediate objectives through 2050. Under the BEMIP framework, the eight participating countries have established collective generation targets for the BEMIP priority corridor: 20.2GW in 2030, 41GW a decade later, and 57.7GW by mid-century. These collective targets establish a regional baseline, yet individual national ambitions often exceed these figures, underscoring the political drive for energy sovereignty and climate targets across the region.

Reality vs aspirations vs concrete work

The report highlights a crucial industrial reality: the vast majority of capacity remains purely aspirational. The total fully operational OWE capacity across all surveyed Baltic nations stands at a relatively modest 3,534MW, with Germany accounting for 1,800MW and Denmark for 1,500MW (compare this with Sweden's installed OWE capacity, which sits at 161.7MW, while Finland's – 44MW). Crucially, the other markets – Estonia, Latvia, Lithuania, and Poland – currently report zero fully operational OWE capacity, signifying the industrial challenge ahead in the eastern Baltic (though after many years of neglected promises, Poland is finally erecting its very first OWE farm, the 1.1GW Baltic Power, expected to come online in 2026).

In stark contrast to the existing operational base, the total OWE capacity currently planned across the eight nations reaches a monumental 128.7GW. This pipeline reveals where future investment, maritime logistics contracts, and port activity could concentrate. Sweden leads the under-development pipeline with 61.5GW, followed by Finland (28.5GW), Poland (18GW), and Estonia (15.5GW). This immense scale places immediate pressure on the maritime supply chain to deliver specialized vessels and components capable of supporting these deployment rates.

The report details how individual nations are translating the BEMIP goals into concrete, capital-intensive road maps, often driven by specific national policies and logistical planning. Poland's Energy Policy until 2040 aims for 5.9GW by 2030 and expects 18GW in OWE by 2040, aligning closely with BEMIP targets. The total technical OWE potential is estimated at 33 GW. Apart from the above Baltic Power, Baltica 2, Bałtyk II, and Bałtyk III are in the pre-construction phase.

The Estonian government is highly ambitious, expecting 7.0GW installed by 2030 (based on the National Energy and Climate Plan) against a potential of 17GW. Estonia has faced the complex issue of overlapping OWE applications, which public superficies licence auctions have been

working to settle by mid-2025. The Saare project (1.4GW) is the most advanced one, having secured a construction permit and aiming for commissioning by 2030/31. The logistical backbone is already being built, with the marshaling terminal in the Port of Tallinn's Paldiski South Harbour scheduled to launch in early 2026.

Lithuania expects 0.7GW installed by 2030, leveraging a potential that could reach 3.3GW. Its main project is Curonian Nord (0.7GW), and the commissioning of the marshaling terminal in the Port of Klaipėda is expected to take place next year.

Latvia intends to develop the cross-border ELWIND project (1.0GW by 2035) and estimates a total potential of 4.0GW (though the Latvian Wind Energy Association speaks of 15.5GW). It is also developing sea terminals in Liepāja (online in mid-2027) and researching one in Ventspils.

While the development pipeline boasts an impressive 128.7GW, the report cautions that many of these projects remain at the concept or early planning stage. This is particularly true for the massive pipelines reported by Sweden (61.5GW) and Finland (28.5GW), where the future of most proposed OWE projects is highly uncertain, and overlapping areas exist.

The response to this uncertainty is robust regulatory action and infrastructure investment. Some nations are urgently revising their technical plans. For instance, Sweden's Agency for Marine and Water Management proposed changes in January 2025 to increase the total OWE potential, though national security concerns have reportedly restricted new areas in the central Baltic Sea (others quote politically motivated opposition against wind energy, plus the need to rewrite the concession system so that Sweden can benefit financially from seabed infrastructure erected in its waters). Finland is revising its Maritime Spatial Plan 2030, with updates expected by 2027, and recently introduced a new, transparent auction system for OWE areas to replace the previous developer-led model.

The widespread, active construction of marshaling terminals across Poland, Lithuania, Latvia, and Estonia – countries currently lacking operational capacity – indicates a clear, strategic regional commitment to preparing the essential maritime logistical foundation for future installation campaigns, mitigating the risk associated with these massive development pipelines.

The (new) industrial dawn?

Just as the smoke of the early industrial tugboat in Turner's painting heralded the end of the age of sail, the synchronized development of OWE terminals and the regulatory push across the Baltic Sea may very well mark the industrial dawn of the wind era. This transition is defined by the contrast between immense potential and the practical challenges of converting conceptual projects into commissioned assets.

The successful navigation of consent, construction, and supply chain logistics will ultimately determine how much of this pipeline reaches full commission, validating the ambitious BEMIP goals. For those managing the supply chain, designing the vessels, or financing the projects, understanding the current state of affairs on the Baltic OWE scene is critical for strategic decision-making. The *Development of OWE in the Baltic Sea* report can be your tugboat, helping to navigate these uncertain waters. □

Photo: Ørsted