



TOWEA

TURKISH
OFFSHORE
WIND ENERGY
ASSOCIATION



DÜRED

DENİZÜSTÜ
RÜZGAR
ENERJİSİ
DERNEĞİ



2ND HIGH-TECH SUMMIT FOR THE BLACK SEA

Sector Talk: Living Labs and Innovative Solutions

Waste-to-Energy and
Renewable Maritime Energy



Matteo Bocci

Stratégies Mer et Littoral
Moderator

#HTS4BS



Mariya Trifonova

Sofia University St.
Kliment Ohridski



Sorina Uleia

Recycllux



Murat Durak

Black Sea Renewable
Energy Coalition



This project has received funding from the European Union's
Horizon 2020 research and innovation programme under
grant agreement No 101000240.

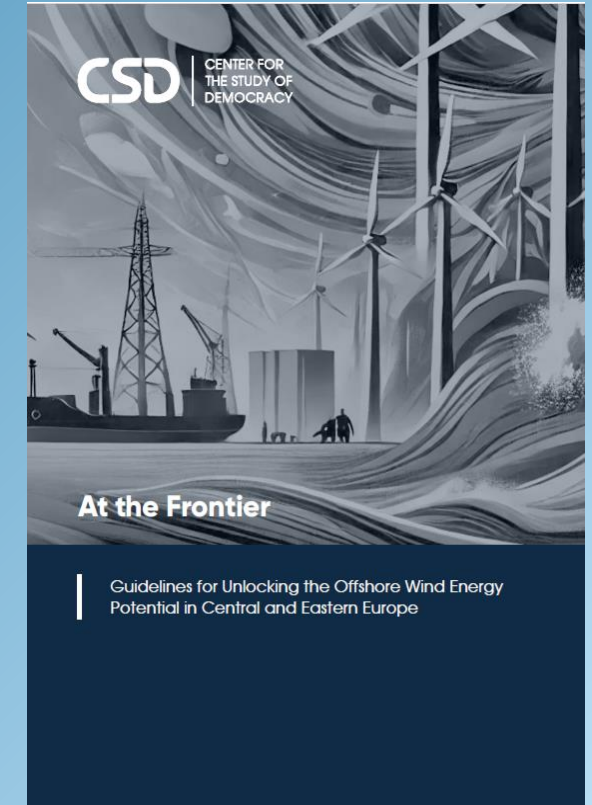
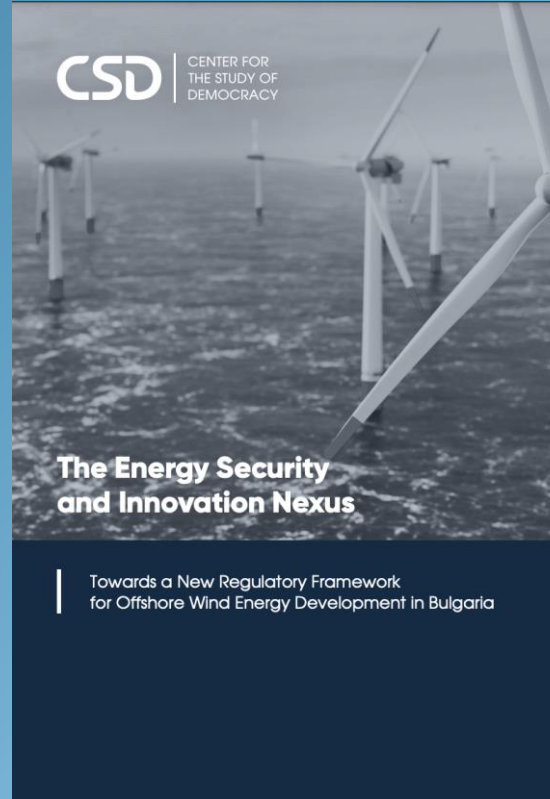
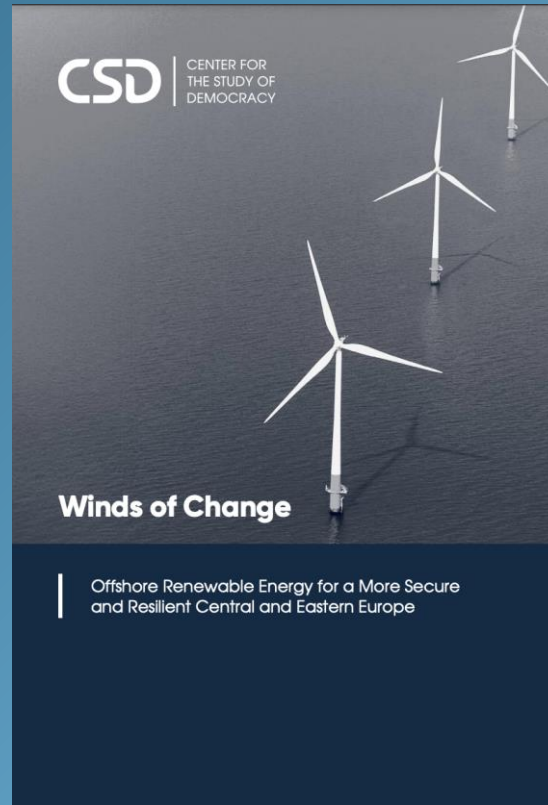
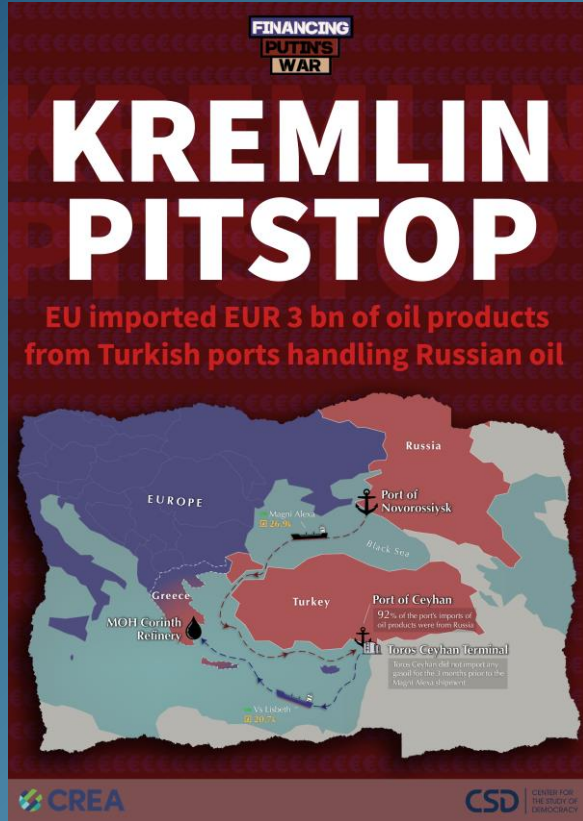
Dr Murat Durak
President of Turkish Offshore Wind Energy Association
October 16, 2024

The Black Sea Renewable Energy Coalition (BSREC) is an informal platform for collaboration on the development of offshore renewable energy in the Black Sea. The Coalition brings together national and EU institutions, NGOs, offshore wind farms developers, research institutions, renewable energy experts and grid operators.

Goals:

- Facilitate comprehensive planning for offshore wind energy development, integrating environmental protection and restoration strategies with global climate goals;
- Align conflicting interests among project developers, infrastructure operators, environmental organizations, the tourism industry, and other relevant stakeholders;
- Enhance the capacity for multi-level governance of sustainable energy in the Black Sea;
- Build the capacity of local communities and policymakers to address common challenges before the growth of marine renewable energy in Romania, Bulgaria, Turkey, Georgia and Ukraine.





Turkish Offshore Wind Energy Association (TOWEA)

Turkish Offshore Wind Energy Association was founded in 05.04.2021, in order to increase and develop investments on offshore wind energy in Turkey, to bring Maritime, Shipyard and Energy industries together and to coordinate their collaboration.

The goal of the Association is to develop public activities regarding offshore wind energy, support people and organisations with same purpose and utilise public institutions as well as universities in these activities to create awareness.

Black Sea Countries Offshore Wind Energy Federation

Black Sea Countries Offshore Wind Energy Federation
(**BASOFWED**)-as a regional Federation;

- Support the cooperation in the field of offshore wind power development in the Black Sea Region on the basis of mutual benefit
- Collaborate in carrying out activities at the national level, the Parties agree to cooperate fully with each other and the national authorities
- Solving technical issues: maritime spatial planning, grid integration, maritime traffic, fishery, etc.



DURED AWARDED EU PROJECT HORIZON-CL5-2021-D3-03-12

BLack Sea Offshore Wind (BLOW)

“HORIZON-CL5-2021-D3-03-12: Innovation on floating wind energy deployment optimized for deep waters and different sea basins (Mediterranean Sea, Black Sea, Baltic Sea, North-east Atlantic Ocean)”

BLack Sea **Offshore** **W**ind (BLOW)

WP2

Legal Requirements, Local Engagement & Cross Border Policy Development

T2.3

Maritime Spatial Planning & Cross-border policy development

Task 2.2: Support to Maritime Spatial Planning

Task leader: DURED

Other partners involved: Beia, CMU, UMG

Timing: M2 to M60

WP8

Exploitation Strategy and Replication roadmap in the Black Sea

T7.4

Dissemination, Communication & Awareness Rising

Task leader: DURED

Other partners involved: All

Timing: M1 to M60

60

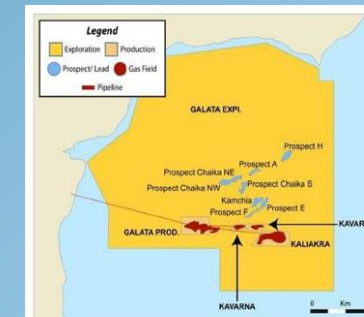
Deliverables

D8.1: Communication, Dissemination, and Awareness Rising plan (Beia, M6)

D8.2: Report on dissemination and communication activities (Beia, M24/M36/M48/M60)

D8.3: Report on partnership activities (DURED, M24/M36/M48/M60)

Site specifications -Petroceltic BG, Galata Field (Bulgarian Black Sea)



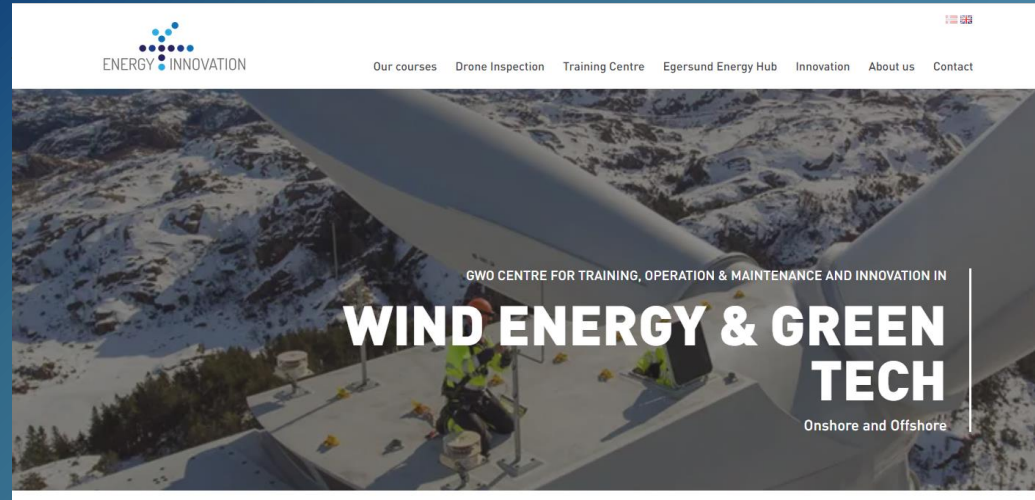
Location of the Galata, Kavarna, Kavarna East and Kaliakra gas fields

- WGS84 coordinates 43.04463° / 28.19325°
- Distance to Eastern Port of Varna: 23 Km
- Water depth: 35m (tbc)
- Average wind speed: 6.5 - 7.0 m/s
- Demo Size: 5MW Unit
- Site total size: 60 Km²
- Permit: running until 2025, under renewal for +15 years
- Active Energy trading license

Within the scope of this vision, preliminary work has been started for the foundation of Offshore Wind Energy R&D and Test Center. The work of such a center can be summarized as follows;

1. **Training engineers and technicians for Offshore Windfarms,**
2. R&D Studies for Offshore wind energy,
3. Developing fixed/floating wind turbine,
4. Meteorological and Oceanographic Studies for Offshore windfarms,
5. Issuing Certificates and Accreditation required for Offshore windfarms,
6. Test center for surrounding countries.

Offshore Wind Energy Training, R&D and Test Center



Egersund Energy Hub Langholmen



Our goal is to build the world's most extensive wind energy qualification centre in a new, structurally contiguous complex in the Port of Egersund, in the heart of the Rogaland region. The brand new Egersund Energy Hub at Langholmen in Egersund have several different companies collocated together with Energy Innovation, developing strong synergies between different players in the energy, engineering and industrial sector, and in training, certification, education and R&D. The constructions of the centre was finished autumn 2020. The training started in preliminary buildings in autumn 2018, but are now conducted in the brand new building complex.

Training programs



We provide certification for the **GWO** (Global Wind Organisation), but also plan to provide more extensive technical courses through a cooperation with partners providing up to 80 different training modules altogether. For GWO HSE we provide all safety training modules, both basics and refreshers, as a one-stop shop: 1) First Aid, 2) Manual handling, 3) Fire Awareness, 4) Working at Heights 5) Sea Survival 6) Advanced Rescue and 7) Enhanced First Aid. Together with us in the centre - the vocational education of Energy Operators for wind and hydropower - the only one in Norway, at Dalane Technical College will be located from August 2021.



GWO HEALTH & SAFETY MODULES:

- GWO Basic Safety Training
 - o Working at heights*
 - o First Aid*
 - o Manual Handling*
 - o Fire Awareness*
 - o Sea Survival
- GWO Enhanced Safety Training
 - o Enhanced First Aid (offshore + remote onshore)
- GWO Advanced Rescue Training
 - o Nacelle, Tower & Basement Rescue
 - o Hub, Spinner & Inside Blade Rescue
 - o Single Rescuer - Hub, Spinner & Inside Blade
 - o Single Rescuer - Nacelle, Tower, Basement
- GWO Lift User
- GWO Slinger Signaller/Rigger Signal Person

GWO TECHNICAL MODULES:

- GWO Basic Technical Training
 - o Mechanical
 - o Electrical
 - o Hydraulics
 - o Installations
 - GWO Blade repair
 - GWO-modules in development
- OTHERS:**
- Energy Innovation Long term Wind Technicians Courses
 - Helicopter Safety Training
 - Other Courses based on local needs

Turkish offshore wind assoc., Norway's Energy Innovation cooperate for offshore wind workforce training

- Protocols signed for establishment of training center in northwestern Balıkesir province in coming years, DURED chair says



The Offshore Wind Energy Association (DURED) of Türkiye and Norway's Energy Innovation have begun studies to train engineers and technicians in Türkiye to work in offshore wind power plants under the terms of a protocol signed between the two organizations, according to Murat Durak, chairman of DURED.

In an exclusive interview with Durak on the sidelines of the Marentech Marine Energy Technologies Fair in Izmir in late October, he urged for the exploitation of the vast offshore wind energy potential in the three surrounding seas, the Aegean, Mediterranean and Black Sea.

The first step in the country's journey in offshore wind is the establishment of a training center in the Bandırma district in the northwestern province of Balıkesir, in partnership with the Norwegian Energy Innovation.

Installed Wind Capacity: 12 500 MW
Under Sontruction: 3500 MW

Supply Chain

Currently, Türkiye has no track record in offshore wind, but good capabilities in parallel sectors, primarily onshore wind. Offshore wind projects would benefit most from the Turkish production expertise already established within onshore wind.

- 6 tower producers
- 3 blade producers
- 2 casting producers



National Energy Plan of Türkiye

The Ministry of Energy and Natural Resources has published the National Energy Plan of Türkiye covering the period 2020-2035. In the scenario prepared by the Ministry, in the period 2020 – 2035, primary energy consumption will reach 205.3 Mtep (Million tons of oil equivalent), electricity consumption will reach 510.4 TWh (Terawatt Hours), while the electricity installed capacity will reach 189.7 GW in total.

Installed power planning in the field of energy for 2035;

Offshore Wind: 5 GW

Onshore Wind: 24.6 GW

Wind Energy Total : 29.6 GW

Solar energy: 52.9 GW

Hydroelectric power: 35.1 GW

Other renewable energy: 5.1 GW

Nuclear power: 7.2 GW

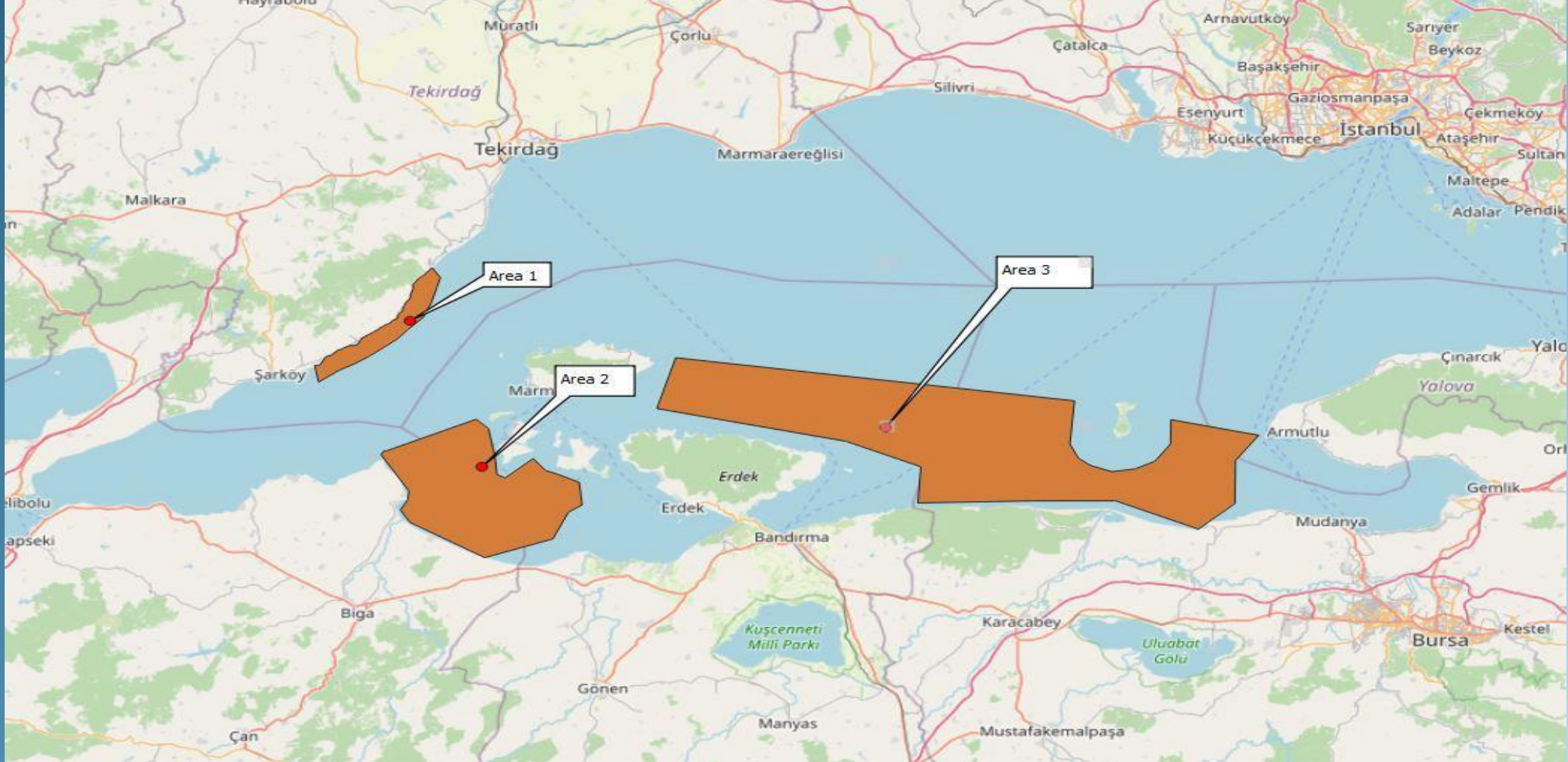
Conventional sources: 59.8 GW

Electrolyzer capacity: 5 GW

Power Purchase Tariff for Offshore Wind

Renewable Energy Resources		Yekdem Tariff (Turkish Lira/kWh)	Term (Years)	YEKDEM base price (USDc/kWh)	YEKDEM cap price (USDc/kWh)	Domestic Component (local content) (Turkish Lira/kWh)	Domestic Component Term (Years)
Hydro power plants	With reservoir	144,00	10	6,75	8,25	28,80	5
	River type (without reservoir)	135,00	10	6,30	7,70	28,80	5
Wind power plants	Onshore	106,00	10	4,95	6,05	28,80	5
	Offshore	144,00	10	6,75	8,25	38,45	5
Geothermal		202,00	10	9,45	11,55	28,80	5
Biomass	Landfill gas or by-products from the processing of waste tires	106,00	15	4,95	6,05	28,80	5
	Biomethanization	173,00	10	8,10	9,90	28,80	5
	Thermal disposal in biomass-based generation	134,90	10	5,75	8,00	21,58	5
Solar		106,00	10	4,95	6,05	28,80	5
Wind / solar including storage systems		125,00	10	5,85	7,15	38,45	10
Pumped Hydro Storage		202,00	15	9,45	11,55	38,45	10
Wave and tidal forces		135,00	10	6,30	7,70	38,45	10

IPA Project Sites selected in Marmara Sea



Thank you for Listening

Dr Murat Durak

e-mail: **murat.durak@dured.org**
www.dured.org

www.linkedin.com/company/dured-towea/