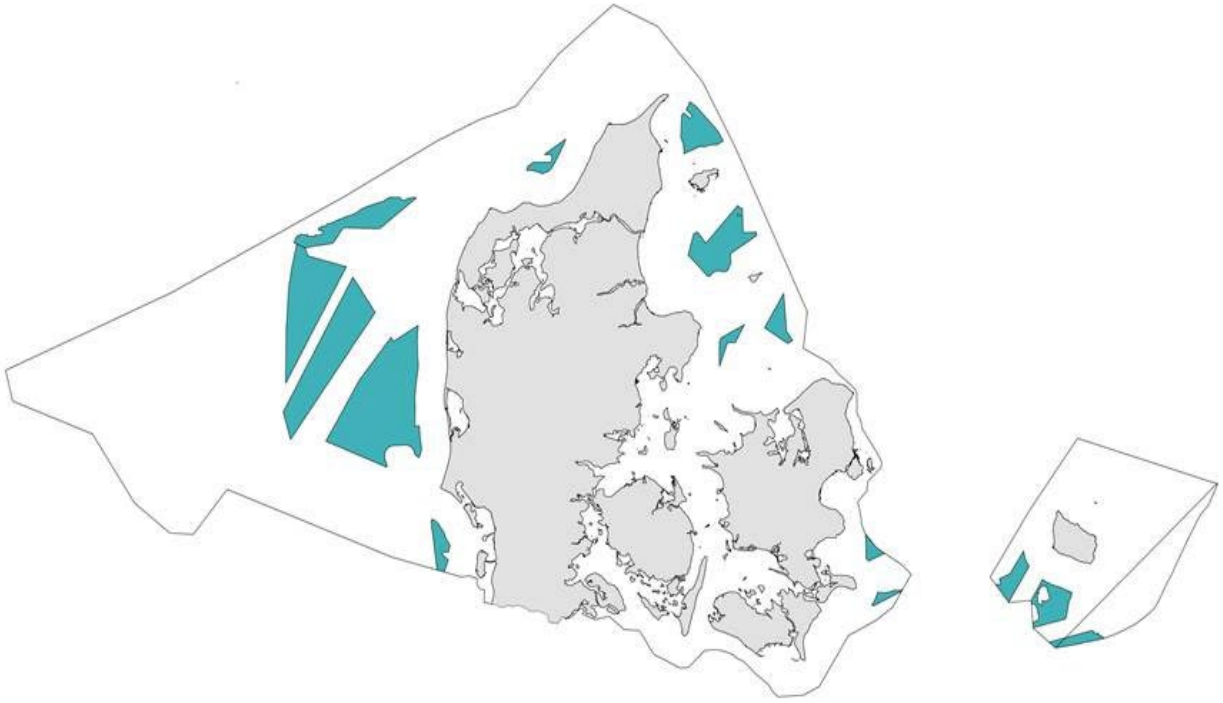
Large-scale screening of Danish waters identifies locations suitable for 12.4 GW future offshore wind



Denmark is one of the global leaders in offshore wind, and is in a unique position to further expand the number of wind farms in Danish waters. Offshore wind will help to ensure that by 2030, 55% of the nation's energy needs are met by renewable energy.

In accordance with the Energy Agreement published on the 29th of June 2018 and supported by all political parties in the Danish Parliament, the Danish Energy Agency has prepared a large-scale screening of Danish waters identifying locations suitable for the development of future offshore wind farms.

The result of the screening shows identification of an area of about 35.000 km2 suitable for the development of offshore wind. Restricted areas has been excluded such as shipping routes, Natura 2000 sites, defense restriction areas, etc. as well as a 15-20 km wide near-coastal zone. Under specific preconditions set in the screening the area of 35.000 km2 can potentially serve as a basis for a minimum of 40 GW offshore wind. Of the identified 35.000 km2, areas of total 11.000 km2 has been designated at present, with a potential of 12.4 GW (figure 1). This corresponds to 12-15 designated wind farms, depending on size. The main principle behind the designation has been areas closest to the near-coastal zone, without restrictions. Besides these areas, there are larger areas, especially in the

North Sea further away from the coast that could also be suitable for offshore wind. Out of the total identified area, 20,719 km2 are areas with a sea depth less than 50 m, while the remaining 14,195 km2 are areas with a sea depth above 50 m.

Based on previous experience, the designated area is roughly four times larger than the minimum area required for generating 12.4 GW offshore wind power. These conservative estimates will therefore provide many opportunities for optimization of the sites, through incorporating local environmental conditions.

The designated areas are located in both eastern and western parts of Danish waters, with larger cohesive areas in the North Sea, and fewer and smaller areas in Danish internal territorial waters and the Baltic Sea.

Background:

As part of the Energy Agreement 2018, all political parties have agreed to the launch of a large-scale screening of Danish waters in the North Sea and Baltic Sea, in order to find suitable locations for future offshore wind farms. The aim was to identify locations which can provide up to 10 GW (de facto 12.4 GW including the 3 already decided farms) of offshore wind power in total, and to designate an extensive selection of attractive offshore wind farm sites. The screening will ensure Denmark's ability to offer well-suited and vacant locations for offshore wind farms in the near future.

It was also decided in the Energy Agreement, to conduct an offshore wind analysis, the goal of which would be to provide optimal market conditions for the fastest possible commercial exploitation of Denmark's offshore wind potential. The future analysis will also examine new potential offshore wind solutions (e.g. hubs), that can provide new growth opportunities.

For more information on the screening **https://ens.dk/ansvarsomraader/vindenergi/fakta-om-vindenergi** *Special Adviser Anette Norling* - ano@ens.dk