



Sector characteristics

Maritime transport

Maritime shipping is a mature and growing sector that strongly depends on safe and efficient conditions of operation.

The IMO is responsible for establishing ship routing systems, especially in congested shipping areas for safety reasons. These include traffic separation schemes, two-way routes and areas to be avoided.

Commercial vessels are usually interested in taking the shortest possible route between two points in order to keep costs to a minimum.

Fixed installations are an obstruction to be avoided.

Offshore wind

Offshore renewable energy is the fastest growing sector of the blue economy in Europe.

Although growth is still greatest in northern Europe, offshore wind farms are also being developed in the Mediterranean.

The risk of accidents caused by vessels are a major concern for the sector, leading to bans for vessels in offshore wind farms and extensive buffer zones.

Wind farm layout can be relevant in terms of the risk of, and consequences of accidents.

Conflict description

Spatial competition

Conflict between offshore wind and shipping occurs when new OWFs are to be built or existing ones expanded into areas close to port or where shipping activity is intense.

Risk of accidents

The risk of accidents is increased by increased traffic density and reduced sea space, as well as certain layouts of offshore wind farms. O&M (operations and maintenance) vessels might also pose a risk – and be at risk themselves - while crossing major shipping routes. Maritime accidents can lead to large financial losses for all parties involved. In the worst case, such accidents can lead to human casualties or serious environmental damage.

Diversion

Obstructions narrow the area in which vessels can operate and lead to greater traffic density elsewhere. Diversions can lead to longer transit times and with these additional costs, such as fuel, wages, insurance or lack of competitiveness.

Drivers of conflict

EU energy targets

Further growth of the sector is forecast in Europe building on energy targets, established capacity and proven low cost. More space is likely to be taken up by offshore wind farms in the future.

Planned vs approved

Maritime risk assessment is usually conducted at the licensing stage of OWF project. This can lead to problems where marine-areas-as-planned are not the same as marine-areas-as-approved. Offshore wind farm layout may need to be altered retrospectively, or shipping lanes moved.

Different regulatory regimes

Stringent regulatory regimes can lead to greater conflicts. In some countries, offshore wind farms are considered maritime exclusion zones for safety reasons. Other countries do allow transit under certain conditions.

Possible solutions

Prevention

- 1 Co-design shipping routes in a collaborative process
- 2 Carry out a risk assessment on proposed options.
- 3 Use existing design guides for the layout and placing of offshore wind farms
- 4 Consider the seasonality of shipping when planning offshore wind farm installations

Mitigation

- 5 Use technical means of increasing safety within wind farms
- 6 Foresee safe crossings for specialised vessels
- 7 Early application of a navigational risk assessment during the MSP process.
- 8 Consider existing documented experiences and guiding documents.

Future trends

Vessel size is predicted to increase, affecting traffic patterns. Short sea shipping is also expected to increase, leading to increased demand for space along the coast.

Autonomation is another trend, leading to different safety considerations and movement patterns for vessels.

Member States are increasingly considering opening up their offshore wind farms to smaller vessels up to 24 meters long.

Design of offshore wind farms in such a way as to enable sailing vessels to travel through, e.g. by means of transport corridors.