

Paper for Consideration by NCWG

Increasing the visual impact of wind turbines on paper charts

<b>Submitted by:</b>	UKHO
<b>Executive Summary:</b>	Request to improve / amend the depiction of wind turbines to draw more attention to the danger on paper charts
<b>Related Documents:</b>	NCWG4-06.8 Offshore Solar Parks
<b>Related Projects:</b>	For consideration among HOs considering wind turbines depiction


Introduction / Background


Offshore energy facilities are increasing, UKHO has been advised by a Lighthouse Authority that the mariner would benefit by increasing the visual impact of the wind turbines symbol on paper charts.


Analysis / Discussion

There are INT1 symbols for wind turbines:

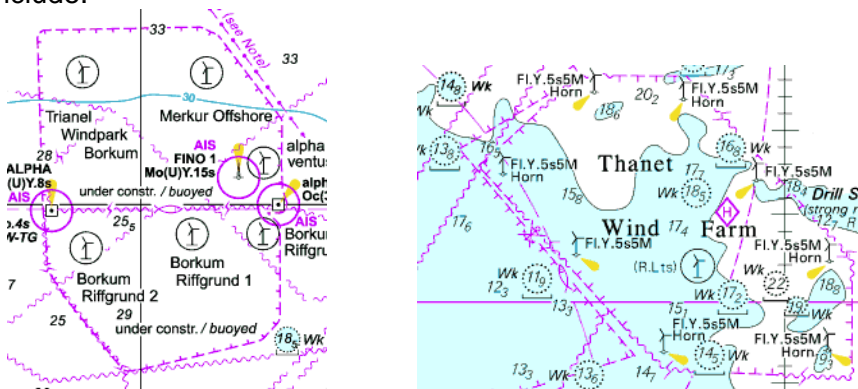
Individual turbines =  **L5.1**

Floating turbines =  **L5.1**

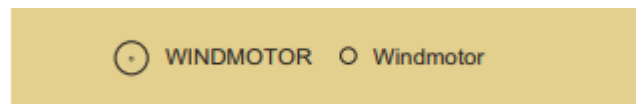
Wind farms = 

Windfarm where navigation is prohibited = 

Charted examples include:



The symbol is not universally adopted, variants include using position symbols and legends with or without limits.



## Considerations:

- Why now - wind turbines of different sizes are already a common coastal feature.
- The remedial impact on HO's to amend all charted symbols for wind turbines may be considerable.
- Will this improve the safety of navigation?
- There is already provision in S4 to draw additional attention to features for emphasis.

## Recommendations

1. HO's consider contacting local lighthouse authorities and other stakeholders for feedback regarding the symbol.
2. Consider the example provided, using symbol N1.1 or 1.2 draw additional attention to the danger. If use of a new symbol is approved, the amendment should only be made during the next new edition/revision of the chart.

- in **black** when associated with depths (except swept areas and declared DW routes) or with permanent physical obstructions. If no other limit is specified, the general limit should be used:



- in **magenta** when regulated and where there is no permanent physical obstruction. If no other limit is specified, the general limit should be used:



## Justification and Impacts

- S4 may be impacted (by including a reference specifically to the N1.1/N1.2 symbols for emphasis)
- INT 1 will not be impacted as there is already an appropriate symbol.
- There is no impact on ENCWG or other ENC depiction working groups as the symbol is sufficient on the digital products.
- Priority: low

## Action required of NCWG

The NCWG is invited to:

- a. ~~endorse~~
- b. Agree that recommending use of N1.1/N1.2 will draw additional attention to wind turbine locations. HO's should consider use of N1.1/N1.2 during the next revision of the chart or where new wind turbines are charted.
- c. ~~note~~