

**5th CSPCWG MEETING
Sydney, 18-21 November 2008**

Paper for Consideration by CSPCWG

Offshore Renewable Energy Installations

Submitted by:	Chairman
Executive Summary:	CSPCWG4 ACTION 16: Secretary to note for agenda item to review depiction of off-shore renewable energy installations (OREI) at next meeting
Related Documents:	M-4 B-445.12 (2008 revision)
Related Projects:	none

Introduction / Background

The CSPCWG4 meeting agreed that there is an urgent need to provide guidance for charting offshore renewable energy installations (OREI), as they are already being deployed, at least experimentally, in many seas. The meeting decided that it is not yet appropriate to design a specific point symbol, as there is considerable variation in the types of installation. A possible symbol for the future, suggested by FR, would be to adapt the marine farm symbol (K48.2), by replacing the fish by an electric 'flash'. For the present, use of the 'development area' limit, with appropriate legend, eg 'renewable energy installations' (the word 'offshore' is unnecessary) and associated note would be appropriate. A suitable paragraph should be drafted for inclusion in the revised section B-440, shortly due for approval by Member States. The symbology should be reviewed at the next CSPCWG meeting, and therefore be added as a work item.

Analysis / Discussion

The wording in the revised version of B-445 is:

B-445.12 Wave energy devices; Wave Farms. A wide variety of devices for harnessing wave energy are being developed; as yet, it is not possible to design a suitable generic symbol for individual devices. However, these devices need protection and are also potentially dangerous to navigation.

The outer limit of the wave farm (if known) should be charted, with a suitable legend and associated note. If no limit is designated, the legend should be centred in the area and spread to give an indication of the extent of the known area in which the devices are deployed.

At the present stage of the industry, wave farms should usually be treated as Development Areas (limit N1.2, N2.1 or N2.2 as appropriate, see B445.7); that is, charted in magenta, as the actual obstructions will come and go or be moved as experiments progress. Later, if such areas become 'Production Areas', the outer limit (if known) should normally be black, symbol N1.1 (as with oilfields, see B-445.3). However, if navigation is prohibited, N2.2 must be used. If there are other restrictions, N2.1 may be used, noting the principles for portraying coincident limits at B-439.6.

A legend such as '*Renewable Energy Installations - Development Area (see Note)*' should be inserted in the area. Small areas may be simply labelled '*Development Area (see Note)*' or '*Wave Farm (see Note)*'. All cables, buoys, lights and permanent structures should be charted as normal.

A magenta note should be inserted warning of the potentially hazardous nature of the area, for example:

DEVELOPMENT AREA

Extensive testing of renewable energy installations, both above and below the surface, takes place in this area. Mariners should exercise extreme caution if navigating in this area. For further information, see [eg associated publication].

We are not aware of any further developments in this field which would lead us to believe that the type of devices used has settled into one or two types, from which it would be possible to develop a suitable generic symbol. The French suggestion (K48.2 adapted by electric flash in lieu of a fish) merits further consideration:

- Is it sufficiently intuitive?
- Would it be suitable for use for all known types of OREI, some of which are on the surface, some under the surface and some on the sea floor?
- Could a consistent symbol be presented differently to accommodate the different types (eg by application of depth colour, surrounding limit)?
- Are there any alternative symbol proposals?

Conclusions

It would be helpful if WG members would come to the meeting prepared to discuss this topic, in particular having knowledge of OREI developments in their area, to add to the WG fund of knowledge on this subject. Illustrations would be useful.

Recommendations

None.

Justification and Impacts

The growth of OREI requires CSPCWG to keep abreast of developments in this field. We must ensure guidance is available to HOs for the safe and consistent charting of OREI.

Action required of CSPCWG

The CSPCWG is invited to review existing guidance and make proposals for improvement.