The **Working Group on Marine Renewable Energy (WGMRE)** will be renamed **Working Group on Offshore Renewable Energy (WGORE)**, chaired by Daniel Wood, UK, and Bob Rumes, Belgium; will work on ToRs and generate deliverables as listed in the Table below.

	Meeting dates	Venue	Reporting details	Comments (change in Chair, etc.)
Year 2021	27 September	Online meeting		
Year 2022				
Year 2023			Final report by Date to SCICOM	

ToR descriptors

ToR	Description		Background	Science Plan Codes	Duration	Expected Deliverables
a	Cumulative Effects Assessment of offshore wind, wave, and tidal farms in the ICES area.	a)	Renewable energy devices are currently licenced on a farm by farm basis in most countries. There has been little work carried out to assess environmental effects at ecosystem and regional scales. The aim is to provide a detailed assessment of ORE at these scales.	2.1, 2.2, 2.4	3 years	Peer-reviewed journal paper
		b)	Individual countries are largely focused on their ORE developments with regulatory systems only set up to deal with internal assessment but not cross border. The work would provide an ecosystem approach for dealing with cross border discussions between member states.			
		c)	Link up with WGCEAM			
b	Review of the use and environmental effects of chemicals in offshore wind, wave, and tidal farms	a)	There is growing evidence that large quantities of chemicals and metals are being used in offshore renewables. The goal is to identify the chemical groups being used, quantify the usage and the environmental risk.	2.1, 2.4, 2.6	3 years	Peer-reviewed journal paper
		b)	Chemical contaminants can impact all levels of receptor in the ecosystem. The widespread distribution of ORE means contaminants can have an impact across a very wide area. Understanding a new source of contaminants is key to effective management.			
		c)	collaboration with the ICES WG Marine Chemistry and WGMBRED			
c	Evaluate and report on the environmental effects of emerging marine renewable energy technologies and devices.	a)	There is a growing number of new technologies being trialled to extract energy from the marine environment. These include floating solar farms, Ocean Thermal Energy Conversion (OTEC) and Pressure Retarded Osmosis (PRO). There is a need to understand what the environmental effects/impacts of these devices could be, and to identify research gaps.	2.1, 2.7	3 years	Peer reviewed journal paper. Most likely a review paper.
		b)	Regulators and advisors require prior information on new devices so that they can firstly prepare for licensing deployment and secondly to prepare research funding for emerging issues.			

		c) Ad-hoc requests if required to other WG. Particularly WGMBRED.			
d	Review and report on (re)emerging environmental issues for offshore wind, wave, and tidal renewable energy technologies	a) Offshore wind farms are now a well-established feature. Wave and tidal devices are being deployed in an increasing number of areas. New issues such as bat collision risk and the use of chemicals are emerging. Other pressures such as Electro Magnetic Fields (EMF) are re-emerging with the development of floating offshore wind. b) Issues often emerge because of individual interest within a member state. This work will allow transfer of knowledge across and beyond ICES member states. c) Link up with work from WKTBIMP, WGOWDF and associated groups	2.1, 2.7	3 years	Short report with WG final report. (Possible journal paper if sufficient content)

Summary of the Work Plan

Year 1	ToR A: Identify pressures to be included, data sets to be used and define methodology(ies) to be used. Link up with WGCEAM to help define the parameters. It is anticipated that the methodology will build on spatial approaches developed by Halpern et al., 2012 and used by HELCOM. ToR B: Refine scope of work, define data sources and chapter structure for reporting. Make contact with ICES WG Marine Chemistry to agree workload. ToR C: Define chapter structure, identify emerging technologies. ToR D: Review status on known and newly emerging environmental issues. Define chapter structure for reporting.
Year 2	ToR A: Compile datasets, carry out main analysis. Drafting of report e.g. methods, introduction etc. ToR B: Analyse the data and begin draft report. ToR C: Review emerging technologies in a workshop. Draft report. ToR D: Link up with WKTBIMP and associated groups via online workshop on cross border. Draft report.
Year 3	ToR A: Finalise analysis and complete reporting. ToR B: Finalise analysis and complete reporting. ToR C: Update and finalise report. ToR D: Update and finalise report

Supporting information

Priority	The current activities of this Group will lead ICES into issues related to the ecosystem effects of fisheries, especially with regard to the application of the Precautionary Approach. Consequently, these activities are considered to have a very high priority.
Resource requirements	The research programmes which provide the main input to this group are already underway, and resources are already committed. The additional resource required to undertake additional activities in the framework of this group is negligible.
Participants	The Group is normally attended by some 20–25 members and guests.
Secretariat facilities	Standard EG support.
Financial	No financial implications.
Linkages to ACOM and group under ACOM	There are no obvious direct linkages currently.
Linkages to other committees or groups	There is a very close working relationship with MCWG, WGMBRED, WGCEAM and WGOWDF.
Linkages to other organizations	None currently.