	Realm: Ocean				
Date	**Reviewer's Name**	**Reviewer's Institution**	**Component**	**Comment**	**ES-DOC Response *(include the date, responder's name, and the new version number if implementing any changes)***
Pre-stage 3	Chevallier	CNRM	Ocean	I suggest to move "uplow_boundaries.free_surface.scheme" to Priority 1.	agreed [EG]
Pre-stage 3	Chevallier	CNRM	Ocean	There is no section on "ocean_atmosphere_exchanges" to document flux parameterization or coupling with the atmosphere (coupler? implicit/explicit? single flux over ocean-sea ice or double flux?). Could be under "boundary_forcing".	These questions will appear in the toplevel realm. [EG]
Pre-stage 3	Hallberg	GFDL	Ocean	It seems to me that section 14. should be "Baroclinic Momentum", not "Barotropic Momentum", as barotropic momentum is already covered under section 13, "Barotropic solver", and there is no other section covering the baroclinic momentum timestepping algorithm.	This section has been entirely revised. [EG]
Stage 3	Alistair Adcroft	NOAA-GFDL	ocean-key properties Conservation > Scheme	Salt appears as option but not heat or a temperature analog? What about other tracers?	Other choices are allowed (Enum is open)
Stage 3	Alistair Adcroft	NOAA-GFDL	ocean-grid Discretisation > Vertical	Hybrid/ALE is not consistent with other choices. ALE is an algorithm while the other choices are coordinates. I suggest removing Hybrid/ALE or replacing it with just "ALE" if it can be selected along with the other choices.	Hybrid/ALE removed [v 0.8.0]
Stage 3	Alistair Adcroft	NOAA-GFDL	ocean-key properties Seawater Properties > E	We will need "Wright, 1997" to be an option.	Added [v. 0.8.0]
Stage 3	Alistair Adcroft	NOAA-GFDL	ocean-grid Discretisation > Horizont	Finite volume also has staggering, eg. Finite volume/C-grid. I suggest making "Finite differencing" its own choice, and add "Unstagger (Arakawa A-grid)".	properties decoupled into 2 questions [v 0.8.0]
Stage 3	Alistair Adcroft	NOAA-GFDL	ocean-advection Lateral Tracers > Flux Li	The word "vertical" appears in the question but should be "lateral".	corrected [v 0.8.0]
Stage 3	Alistair Adcroft	NOAA-GFDL	ocean-advection Lateral Tracers > Type	The list of advections scheme is likely to be much longer than just those given. I think it might be easier and more usful to know: i) the nominal order of the scheme (int); ii) whether it is limited (bool); iii) effective order of limited scheme (float); iv) descriptive text label for scheme (e.g. MUSCL, PPM-H5, ...) (str); v) doi reference for scheme (str).	Specialisations for lateral tracer changed as suggested [v 0.8.0]. refs and DOI are handled via a separate process
Stage 3	Alistair Adcroft	NOAA-GFDL	ocean-lateral physics Tracers > Eddy Viscosity	The entire group "Tracers > Eddy Viscosity" should be "Tracers > Eddy Diffusivity".	Changed [v 0.8.0]
Stage 3	Alistair Adcroft	NOAA-GFDL	ocean-UpLow Boundarie Free Surcae > Scheme	There should be a fully explicit choice. Or is "semi-explicit" meant to be "split-explicit"?	Added [v. 0.8.0]
19-4-2018	Mark Elkington	MOHC	ocean-UplowBoundaries		Question clarified in v 1.0.4
sept 2018	Mark Elkington	MOHC	vertical physics	We were unclear how to respond to the following property	
				Vertical Physics > Interior Mixing > Shear Mixing - Is there interior shear mixing?	

				Does this mean "is interior shear mixing explicitly parameterised"? Does it have a particular meaning? The turbulent closure implicitly includes shear mixing as a TKE source term. Does this qualify? It is important to note that there is no distinction between the surface boundary and internal ocean in terms of vertical mixing in NEMO.	
2019-04-02	John Scinocca	CCCma		One item that would be helpful to see is whether models' oceans include the thermodynamic consequences for the phase change (melting) of solid precipitation (snow) on open water portions of the ocean. I didn't see this in the ocean spread sheet. This process accounts for a global-mean time-mean cooling of ~0.6W/m^2 in our preindustrial control. In interpreting individual CMIP6 results from different modelling centres, it would be helpful to know whether this process was included or not.	