

Annex IV

Assessment of Environmental Effects and Monitoring Efforts for Ocean Wave, Tidal, and Current Energy Systems

Operating Agent

Hoyt Battey, US DOE

Partners

Andrea Copping, DOE PNNL

Stephen Bowler, FERC

Beth Burkhard, BOEM

Tim McCune, NOAA

Annex IV: International Ocean Energy Environmental Data Sharing Effort

Objectives:

- 1) Expand knowledge of environmental effects and monitoring methods, and research occurring around the world
- 2) Increase accessibility of information
- 3) Make available any proven/successful mitigation strategies
- 4) Foster efficient and timely government oversight and public acceptance

Mechanism for information sharing: Publicly accessible database

- Lisbon Nov 2006 – Concept for annex on environmental impacts initiated – Canada/US
- Messina Oct 2007 – Experts meeting was held in conjunction with ExCo meeting
- New York April 2008 – US volunteered to develop a proposal for new annex
- Proposal was written and distributed to sub-committee in August 2008.
- Final draft was submitted to ExCo Chair in Sept 2008
- Initial workplan developed July 2009
- PNNL (Pacific Northwest National Lab) awarded US environmental research and database development work Oct 2009
- Workplan revised in January 2010 to reflect evolution of Annex IV
- Solicited and awarded Annex IV contract to Wave Center (Portugal) and the University of Plymouth (UK), May-July 2010
- Experts workshop held in Dublin, Sept 2010
- Data form distributed to Annex IV representatives July 2011
- Initial database construction Sept – Dec 2011

- Publically accessible, searchable database of information pertaining to environmental impacts of ocean energy projects
 - Focus on metadata; what research, monitoring, mitigation, analysis is occurring around the world and who is conducting it
 - Tiered approach to prioritizing data collection
 - Monitoring/mitigation that is occurring for actual device deployments
 - Field or laboratory research not occurring in conjunction with a deployment, but is directly linked to MHK technology/impacts
 - Analogous information from other ocean industries/users
 - Difference between Annex IV Database and Tethys
 - Tethys is a more US-centric database, and contains information on offshore wind, gray literature, presentations
 - Public access restricted until release at until end of 2012

- Final Report with case studies on specific issues or projects
 - Provide overview of the entire 3-year Annex IV Project
 - Overview of the amount and types of metadata collected
 - Plan for continued operation of database
 - Distinct chapters / case studies on specific issues (suggestions below)
 - Interactions of animals with devices / turbine blades
 - Effects of acoustic output from devices on marine animals
 - Effects on the physical environment (i.e. sediment transport, shoreforms, water quality)