



Pacific Northwest
NATIONAL LABORATORY

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Annex IV Meeting of Country Analysts

online meetings

March 16th 2017

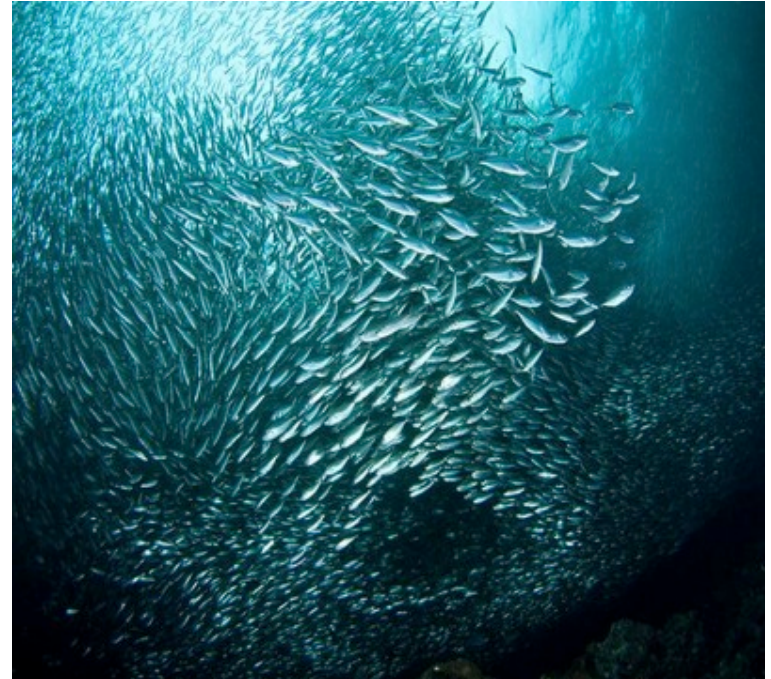


ANNEX IV



Today...

- ▶ Webinars
- ▶ *Tethys* Stories
- ▶ Phase 3 Annex IV work plan
- ▶ Regulators outreach
- ▶ Management Measures Workshop
- ▶ Peer review of *Tethys*
- ▶ Conferences in 2017
- ▶ Metadata forms – reminder
- ▶ Round table



- ▶ January 18th – Recent Research of Interest to MRE
 - Two US-based contributions: EMF studies and fish interaction with turbines

- ▶ April 2017 – Use of algorithms to extract information for animal interaction with devices from underwater video
 - Likely one US, one European presenter

- ▶ June – December 2017: looking for topics and presenters.



Call for Annex IV country input



Webinar Topics – some ideas

- ▶ Risk based consenting processes – what have we learned? (RiCORE, others)
- ▶ Social and economic
 - Fishers/fisheries
 - Navigation
 - Recreation + aesthetics (wave/above water tidal)
 - Role of MRE - climate change, clean energy, small communities
 - Jobs & industry
 - Indigenous perspective
 - Socio-economic indicators for assessing MRE development/projects
 - Social acceptance of MRE, integrating stakeholders into MRE devel process
 - Marine spatial planning and MRE
- ▶ Regional webinars:
 - MeyGen, other Scottish sites
 - Asia and Pacific region
 - What we learned in Wales
 - Australian wave and tidal progress
- ▶ Environmental impacts of producing MRE devices (life cycle analysis)
- ▶ Lessons learned from other industries

- ▶ Short stories are featured on the front page of *Tethys* and continue on another page
- ▶ Communicate new and interesting happenings in this field.
- ▶ Could be about a program, a set of new findings, a new paper that is particularly thought-provoking, or other topics.
- ▶ Suggestions...??

The screenshot shows the Tethys website interface. At the top, there's a navigation bar with links for 'ABOUT', 'TETHYS CONTENT', 'CONNECTIONS', 'BROADCASTS', and 'HELP'. Below this, a banner features the Tethys logo and a news item about an Annex IV Environmental Webinar. The main content area is divided into four tiles: 'Marine Energy' (Generating electricity from the sea), 'Wind Energy' (Generating electricity from wind on land and at sea), 'Annex IV' (Addressing environmental effects of marine energy substantially), and 'WREN' (Resolving conflicts between wind and wildlife internationally). A 'Tethys Story' section is highlighted with a red box, containing the text: 'Making Wind Turbines Safer for Birds. Wind energy developers face challenges to gain public acceptance and necessary permits because of potential impacts on wildlife, especially birds and bats. As a result, developers may be required to monitor projects for the presence and disturbance of both diurnal and nocturnal species, collect... Read More'. The page also includes a calendar for January 2017, a 'NEW USER' button, and a 'KNOWLEDGE BASE' button. At the bottom, there is a contact form and social media links.



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Phase 3 Annex IV Thematic Work Plan

▶ Purpose:

- To plan for and implement Annex IV Phase 3 (2016-2020) activities, so that the sum of activities will optimally facilitate siting and permitting for the MRE industry.

▶ Reworked Themes (2)

1. Reducing Risk and Uncertainty

- Retiring perceived risks and ensuring proportional monitoring and mitigation of environmental effects, where needed.
- Collision risk has been incorporated into this one

2. Social and Economic Aspects of MRE

- Evaluate and disseminate information on social and economic issues of MRE development.

Rationale and Expected Outcomes of Thematic Activities

| Theme | Rationale | Outcome |
|--------------------------------------|--|---|
| Reducing Risk and Uncertainty | <ul style="list-style-type: none"> Broad range of risks and ongoing levels of uncertainty continue to act as barriers to efficient permitting of wave and tidal devices, as defined by SoS. Many of these issues will become increasingly important as we move toward deployment of arrays. Annex IV is well placed to continue broad dissemination of information, with a particular focus on underserved audiences such as regulators and developers. | <ul style="list-style-type: none"> Specific focus on certain topics, like collision risk, acoustic outputs, etc. Activities will promote: <ul style="list-style-type: none"> Increased understanding among regulators of proportional risk and targeted data collection efforts Input elicited from regulators on necessary research outcomes to inform regulatory needs Regulatory outlook toward permitting arrays informed The reducing risk and uncertainty theme will assist regulators to simplify and facilitate permitting, and promote targeted and proportional monitoring and mitigation requirements, to facilitate the development and expansion of the industry. |
| Social and Economic Issues | <ul style="list-style-type: none"> Interactions, potential conflicts, and benefits that affect, and are affected by, MRE development are not exclusively environmental; many fall in the social and economic space. Annex IV member nations have consistently expressed a strong interest in addressing social and economic topics. | <ul style="list-style-type: none"> Activities will promote: <ul style="list-style-type: none"> Increased understanding of social and economic risks and benefits Identification of strategic social and economic research Broad engagement of Annex IV members and MRE community in social and economic issues The social and economic theme will inform the MRE community of the importance of social and economic benefits to MRE development, and promote targeted research that minimizes conflict with existing and future uses of ocean space. |

Working with US Regulators on Reducing Risk and Uncertainty

- ▶ Webinar with federal and state regulators responsible for MRE permitting – March 28th 2017
 - Information on what we know about environmental effects
 - Ask what areas they are particularly concerned about
 - Ask if they will participate in a follow up survey
- ▶ Collate survey results, divide issues into three bins:
 - Further outreach and education could help
 - Transfer of knowledge and datasets from other areas
 - New research needed
- ▶ Iterate with outreach, likely subdivided to regional (US) level
- ▶ Then roll out this or similar process to other nations, Annex IV analysts in lead in their respective nations

Thoughts on Phase 3 Work Plan

- ▶ Are the themes better aligned?
- ▶ What are the greatest priorities, among themes, and within themes?
- ▶ What parts are most important for your nation?
- ▶ What role can you and your colleagues play?



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Management Measures Workshop

- ▶ Annex IV will partner with ORJIP to organize and facilitate, host likely to be Marine Scotland
- ▶ May 9th in Glasgow Scotland, invitations went out last week

- ▶ Management measures that can be implemented for:
 - Pre-installation (design changes)
 - During installation
 - During operations
 - Catastrophic need to mitigate (shut down, removal)

- ▶ Likely to examine:
 - Collision risk (largely tidal)
 - EMF (wave and tidal)
 - Noise emissions (wave and tidal)
 - Benthic disturbances (wave and tidal)

- ▶ Will look at measures to determine:
 - Feasibility and efficacy for conservation, technically, and financially.

2017 Conferences for Annex IV

- ▶ European Geosciences Union General Assembly 2017
 - Vienna Austria, 23–28 April 2017
 - Session on Marine renewable energy; resource characterisation, interactions and impacts

- ▶ METS 2017
 - Washington DC, 1-3 May 2017 (largely US) will have Annex IV presence

- ▶ EWTEC 2017
 - August – September 2017 in Cork, Ireland
 - Andrea and Jan are environmental track chairs
 - About 30 abstracts received, full papers due April 15th
 - Annex IV workshop on transferability of datasets, standardization of data to be collected
 - Timing of workshop



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Peer Review of *Tethys*

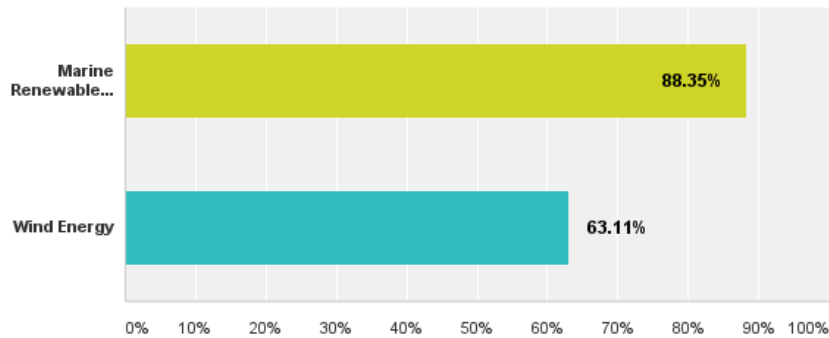
- ▶ Broad review using Survey Monkey, 8 questions
- ▶ Advertised review through email blasts, on *Tethys*, and on social media
- ▶ Survey available January 11th through February 13th 2017
- ▶ Received 103 responses

| Question Number | Question | Answers |
|-----------------|--|---|
| 1 | What is your technology interest? | Choice between marine renewable energy and offshore wind energy |
| 2 | How long have you been aware of Tethys? | Choices of three time intervals or “never” |
| 3 | How do you use Tethys? | Choice of six uses |
| 4 | Do you know of any relevant documents that Tethys does not list? | Open feedback to provide references. |
| 5 | Please rate your experience on Tethys from 1 to 10. | Allows for overall assessment of usefulness of Tethys |
| 6 | How useful do you find the following pages? | Choice of nine pages or areas of Tethys |
| 7 | In your opinion, how can Tethys be expanded or improved upon? | Open ended feedback to expand or improve Tethys |
| 8 | How did you hear about this survey? | Choice of 6 methods by which the responder might have heard of the survey |

2017 Peer Review Results for Tethys

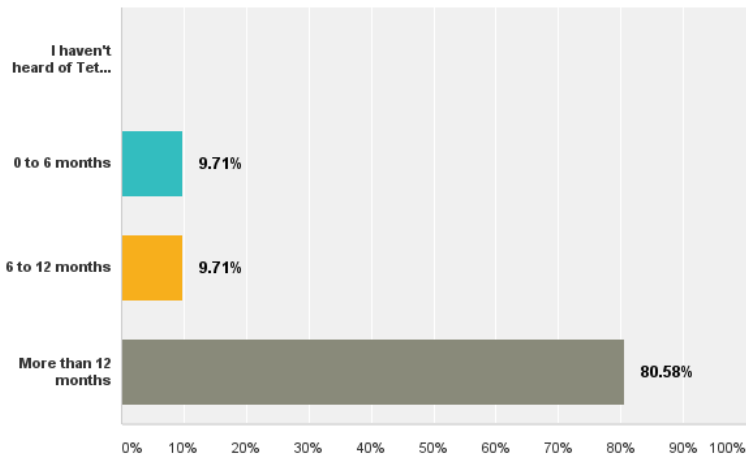
Q1 What is your technology interest? Please check all that apply.

Answered: 103 Skipped: 0



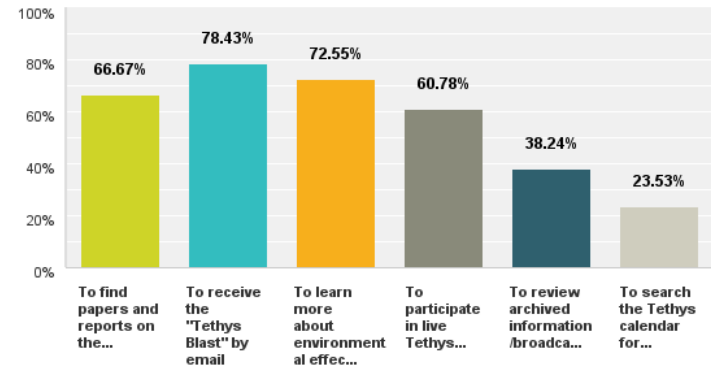
Q2 How long have you been aware of Tethys?

Answered: 103 Skipped: 0



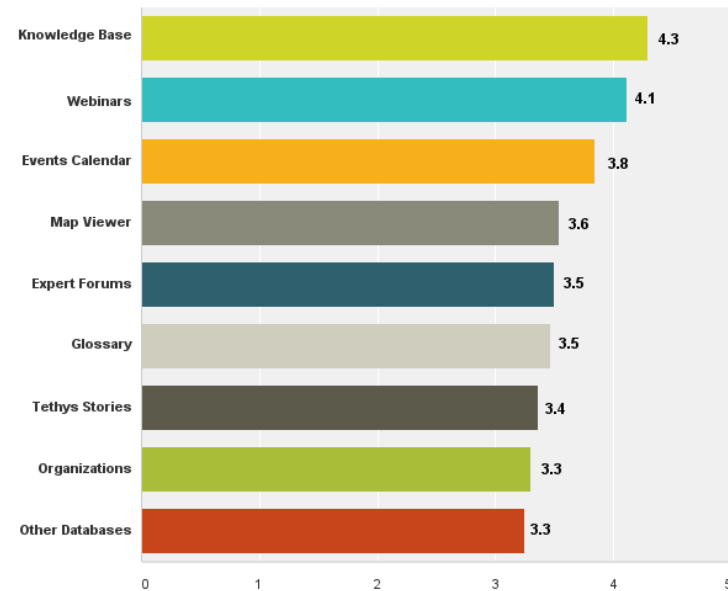
Q3 How do you use Tethys? Please check all that apply.

Answered: 102 Skipped: 1



Q6 How useful do you find the following pages?

Answered: 97 Skipped: 6





| Comment | Response |
|--|--|
| <p>“Continue as is”, “very good work”, “it’s so good”, “it already covers the key areas”, “keep it up”, etc.</p> | <p>Thank you!</p> |
| <p>Make people more aware of all the additional content on Tethys (aside from KB, MV, events). Advertise these more.</p> | <p>We feature portions of the site content on the top crawl of Tethys, on Tethys Blasts, and Tethys Stories. We will continue to do more of this, as well as using social media to increase awareness.</p> |
| <p>Tethys should provide more PDFs.</p> | <p>We provide PDFs of all documents, where copyright allows.</p> |
| <p>Site navigation could improve by incorporating tabs or jump links.</p> | <p>Tethys already strategically makes use of tabs on the KB, MV, external links, and PDFs. Jump links are used sparingly by design, to maintain the efficiency of the site.</p> |
| <p>Knowledge Base could show approximate geographic identifiers (i.e. continent).</p> | <p>We have little additional room to add new filtering options on the Knowledge Base. This idea might be considered, if an already featured filter were considered to be of lower importance.</p> |
| <p>More webinars!</p> | <p>Noted. Expansion of the webinar series is depended on available resources, including availability of suitable topics and speakers.</p> |
| <p>Extend knowledge network to Asia.</p> | <p>Tethys includes all suitable material, however, we need to be provided an English-language abstract for each document. We have a strong interest in further involvement in Asia.</p> |
| <p>Encourage/facilitate more international discussions to promote best practice, knowledge sharing, etc.</p> | <p>This is the continuing goal of webinars, expert forums, science summaries, and more.</p> |
| <p>Occasionally provide a list of experts across topics.</p> | <p>There is some of this information available through the Tethys community.</p> |
| <p>More graphics would help communicate with non-scientific audiences.</p> | <p>This has not been the focus of Tethys, but if the scope were increased to have a more education focus, this might be possible in future years.</p> |

- ▶ Just a reminder:
- ▶ You received email from Mikaela Freeman about updates/new projects for Annex IV metadata forms



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Future Meetings

- ▶ Third Thursday, every other month:
 - May 18th 2017
 - July 20th 2017
 - September 21st 2017
 - November 16th 2017(one week early)
 - January 18th 2018

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