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June 21st 2016

To: Jocelyn Brown-Saracino
Samantha Eaves
From: Andrea Copping
Re: *Tethys* and Annex IV Quarterly Report Q3 FY2016 – Peer Review

During Q3 of FY2016, PNNL solicited peer reviews of *Tethys* from marine renewable and wind energy practitioners, including Annex IV and WREN members. Responses were received from a total of 14 marine renewable energy practitioners and 10 wind practitioners, totaling up to 168 comments received from ten different countries including the US, UK, Spain, Japan, Portugal, Canada, New Zealand, Ireland, Norway, and Sweden. All the comments and feedback have been summarized into two separate comment matrices; one for the feedback from marine renewable energy practitioners including the Annex IV country analysts, and one for the comments received from the wind energy practitioners and WREN members. A complete matrix of all the comments received for both marine renewables and wind energy comments are attached at the end of this report. A more general survey was also widely distributed to the *Tethys* community through Survey Monkey. A total of 72 responses were received; a summary of these comments is also provided as part of this quarterly report.

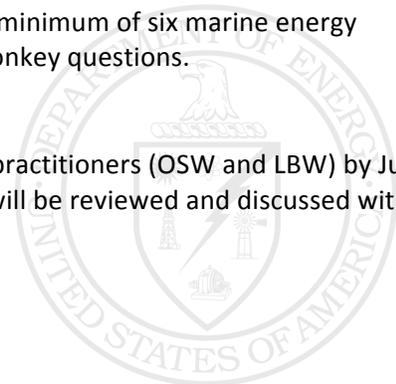
The purpose of this report is to summarize the feedback received from the marine energy and wind communities on *Tethys*, and how PNNL plans to address these comments and feedback. The modifications made to *Tethys* are discussed below and are separated into marine energy and wind energy.

Q3 Progress Measure (water):

The annual peer review of *Tethys* will have been carried out with a minimum of six marine energy experts involved, and a broader group of respondents to Survey Monkey questions.

Q3 Progress Measure (wind):

The annual peer review of *Tethys* will solicit responses from 10-12 practitioners (OSW and LBW) by June 30th 2016 and report submitted to DOE on results. Questionnaire will be reviewed and discussed with DOE prior to release.



Comments from Marine Energy Practitioners

A total of 98 comments were compiled from 14 different marine energy reviewers. The following table summarizes the major responses that are summarized here, as well as the direction that PNNL plans to take in addressing the comments.

Comment	Response
The <i>Tethys</i> knowledge base has limited literature and information on socio-economic and legal research.	Socio-economic research will become a more important focus in the third Phase of Annex IV; future collection of documents will reflect this focus.
Word association functionality for searching on <i>Tethys</i> could be useful in helping users find other related content.	PNNL will look into this functionality to determine how this may be integrated into <i>Tethys</i> and how useful it may be.
Several reviewers noted on a slower loading speed for certain pages.	Major efforts will be made in the next year to improve the speed of the site. The recent increase in the site size has made loading speeds more problematic.
Reviewers had several suggestions for improving the map viewer, such as including a 'Country' facet box and/or improving the clustering.	PNNL is investigating improvements to the map viewer and how this could become a more useful tool, with any changes to be made during the next year.
Tick boxes could be implemented in all facet boxes to make searching <i>Tethys</i> content more straight forward.	PNNL will investigate how these may be integrated into <i>Tethys</i> in FY17.
Several reviewers noted the regulatory information could be updated and standardized to help clarify the regulatory processes within each of the countries listed.	PNNL has discussed improving the regulatory information within <i>Tethys</i> several times, and will continue to evaluate how this page can be improved and better organized. Discussions will continue in FY17, but further action will require additional support from Annex IV members.
The search functionality of <i>Tethys</i> could be improved by allowing users to further refine searches within a larger search query. For example, a user may want to search for socio-economics or marine spatial planning, then further refine that search for literature dealing specifically with fish.	PNNL is always looking for ways to improve the search capabilities of <i>Tethys</i> . Users currently have the ability to refine searches on <i>Tethys</i> through facet boxes; PNNL will also look into how key word searches may be used to further refine searches during FY17.
Most reviewers felt that the connection and broadcast pages are extremely valuable, but several noted that increased ability to search the content on these pages could be useful, such as filters for subjects or receptors.	As the connections and broadcast pages expand, PNNL will investigate how the content on these pages may be searched and sorted.

Comments from Wind Energy Practitioners

A total of 70 comments were compiled from ten different wind energy practitioners and WREN members. The following table summarizes the major responses that are summarized here, as well as the direction that PNNL plans to take in addressing the comments.

Comment	Response
The Broadcast pages could be more useful if they also displayed upcoming events, instead of just on the calendar.	PNNL will look into adding an additional calendar or events list on the Broadcast page.
Several reviewers noted that the map viewer clustering was difficult to use.	PNNL is investigating improvements to the map viewer and how this could become a more useful tool, with any changes to be made during the next year.
A date indicating the last time the knowledgebase, map viewer, or site in general was updated could be useful.	This comment is acknowledged, and PNNL will evaluate how this may implemented in FY17.
While the search functionality of the site works well, it was suggested that more in-depth search tools be added to allow users to select multiple receptors and stressors but still filter out others. Allow Boolean commands AND, OR, or EXCLUDE	PNNL acknowledges that there are several ways to improve the search capabilities of <i>Tethys</i> , including perhaps allowing users to administer Boolean commands such as AND, OR, or EXCLUDE. PNNL will further explore these capabilities in FY17.
The expert forums under the Broadcast table seem to be slightly underdeveloped and not particularly useful.	Expert forums are reserved for technical subject matters that could benefit from additional expert discussion; to date this function is only included for Annex IV but could expand to the wind side in future.
It may be useful to allow for more filtering options for socioeconomic literature from the more technical research-based publications.	PNNL is refining this category to enable more specific search capabilities for socio-economic research. This will be further explored in FY17.
Several reviewers noted slower loading speeds for certain pages.	Major efforts will be made in the next year to improve the speed of the site. The recent increase in the site size has made loading speeds more problematic.
All of the reviewers noted that the Broadcast page and <i>Tethys</i> Blasts are very useful, but there should be more information and better advertisement throughout the site as to how one joins the mailing list for the Blasts and webinars.	This point is well taken, and PNNL will ensure that information on how to join these lists is well advertised on the home page and other locations throughout <i>Tethys</i> .

Survey Monkey Responses on *Tethys*

To solicit additional reviews of *Tethys* from a broader audience, a Survey Monkey link was distributed to *Tethys* community members; the link was distributed via email, *Tethys* Blasts, and was posted on the *Tethys* homepage. A total of 72 responses were received. The survey consisted of six general questions regarding *Tethys* usage, content, and the *Tethys* Connections page.

The majority of *Tethys* users focus on finding papers and reports (88%) and keeping up to date on *Tethys* Blasts and other notifications (78%). Others use the site to learn more about environmental effects of wind and/or marine renewable energy (69%) or to participate in and access live events such as webinars or expert forums (60%).

The overall average effectiveness rating for the Connection pages was 2.71, with 2 being not very effective and 3 being moderately effective. The connection pages with the highest ratings were the database page (2.83), organizations page (2.74), and regulatory page (2.73). The *Tethys* community page, which can only be accessed when logged in, received the lowest rating of 2.55. Suggested improvements for the Connection pages included:

- Provide better advertising, signposting, and instructions for how to the Connection pages;
- Include technology and project developers in the organization page, especially those that are providing information to *Tethys*;
- Enhance the Regulatory page to provide more detail and encompass wind energy;
- Improve the organization of the Connection pages and make them searchable by subject area, stressors, receptors, etc.

Other suggested improvements for *Tethys* included:

- Provide more connections and resources for students and job opportunities;
- Continue to expand upon wind energy content within *Tethys*; and
- Begin to include new science and research on technology and monitoring protocols.

A total of 58 out of the 72 Survey Monkey respondents heard about the survey through individual emails from *Tethys*; others heard about it through the *Tethys* Blasts (12), word of mouth (3), and social media (1). Over half (38) of the Survey Monkey respondents rated their user experience as 4 (1 being not very helpful and 5 being extremely helpful); 21 rated their experience as 5, nine rated their experience as 3, and 4 rated their experience below.