

May 2018 Annex IV Analyst Meeting

1500 GMT Meeting Attendees:	0000 GMT Meeting Attendees:
Jan Sundberg (Sweden)*	Daisuke Kitazawa (Japan)*
Olivia Langhamer (Sweden)	Takero Yashido (Japan)
Teresa Simas (Portugal)*	Andrea Copping (US – PNNL)*
Juan Bald (Spain)*	Alicia Gorton (US – PNNL)
Melissa Oldreive (Canada)	
Candace Nachman (US – NOAA)	
Andrea Copping (US – PNNL)*	
Amy Woodbury (US – PNNL)	
Alicia Gorton (US – PNNL)	
Jonathan Whiting (US - PNNL)	
Paul Morgan (UK - Aquatera)	
Hans Chr Soerensen (Denmark)*	

*Country analysts

Andrea presented slides (attached):

- Tethys update
- EIMR workshop
- Data transferability and collection consistency
- Roundtable

EIMR Workshop

Juan - In regards to socio-economic issues, did you differentiate between social and economic aspects? We tend to focus just on economic issues, but social is an issue that we don't often touch in the same manner. In this workshop, do you talk of economic and social aspects in the same manner?

Andrea - Thank you; this is a great reminder. We try to distinguish between the two. This concern was brought up at the workshop last summer. Sandy Kerr from ICIT- Heriot-Watt University was a social scientist who made a strong plea for that. The report should distinguish between the two fairly well. Some cases have both a social and economic component, like job growth. On the social side, some members of the community (elderly, parents, etc.) are not benefitting directly from the economic growth but need increased social services.

Juan - For us, the social aspects are difficult to address. We are more comfortable with economic.

Andrea - The workshop at EWTEC tried to lay out metrics. We will ask for volunteers with BMPs.

Data Transferability and Collection Consistency

Teresa - The people usually involved in environmental impact assessments that produce the information and analysis for regulators and practitioners are not intimately familiar with data. Maybe we need to have an approach for how to help these people manage data. I have the same impression; they really like to have processed information, but we also need to produce the information so they can work on it, which is not always a huge amount of information. This should be addressed.

Andrea - Great point. I think you're absolutely right. There are other audiences here - consultancies and universities producing data. Along the way, we need to convince developers that this is something they need to do from the start. Your point is well taken that there aren't enough data yet. New information is starting to come from the UK on tidal monitoring, but we are still looking for more.

Juan - For EMF MREPA's, what about cables in water column (umbilical cables)? The cables that connect to seafloor?

Andrea - We refer to those as "draped cables." We can probably find a way to distinguish these better. I am told that draped cables cannot be shielded because the shielding is too heavy.

Data Transferability and BMPs

Teresa - Are the BMPs only for post-deployment phase? I can see there are some other possible things to think about before installation. Regulators need to have information for these monitoring activities, to describe or characterize the reference conditions. Is there any applicability to other phases of licensing process?

Andrea - Yes. I was using examples from post-installation monitoring too much. There are some other broader applications. Depending on stressor/receptor interaction, we should be able to assess the site and see what previous datasets (from similar sites) have concluded. It is our hope that baseline monitoring conditions may be applicable to more than one site, so baseline assessments should fit this framework well. You should be able to see what decisions have been made for similar sites for baseline, pre-consenting, post-installation monitoring, and perhaps mitigation phases.

Daisuke - Sorry, but I cannot attend ICOE, but Takeo will attend the workshop. I will read the documents and I will convey my feedback to him. Also, Japanese regulators are very interested in a data transferability framework. The most important point for the Japanese side is the definition of receptors. For example if we deal with fish, it is important to specify salmon or mackerel (or other species) because fisherman are worried about commercially important fish.

Andrea - It's ironic, Europeans are most interested in marine mammals and diving birds. In North America care a lot about fish too. We tend to talk very generally about fish - we need to get more detailed and serious about which fish species we are referring to.

Daisuke - Are you still collecting questionnaires from regulators?

Andrea - Yes! If you have more, we are still collecting those.

Daisuke - We have a seminar in February and only had two responses. But I have another opportunity to explain this in August with the Ocean Energy Association of Japan, and regulators may respond then. I would like to collect feedback from regulators then. I already translated the questionnaire into Japanese, so I'd like to send the Japanese version to you. Could you make the web-based response form?

Andrea - Yes, we could.

Daisuke - OK. I will send the Japanese version.

Andrea - We will make sure you have all the materials we have used with the workshops for US regulators, such as the data we showed them. The outcomes of monitoring or baseline data will not be identical everywhere, but I think they are representative. Most data are out of Europe. We will make sure you have that so you can use that with your regulators. By August, we should have some preliminary results from ICOE workshop that may be useful.

Roundtable

Canada

Melissa - Any source of Annex IV material is helpful to show connectedness to science and in conversations with regulators. There is lots of interest in tidal in Nova Scotia, as the new 10 MW project in the Bay of Fundy is being assessed. This will likely add reinvigorated energy to monitoring. Projects are being discussed and more monitoring-based research and programs may be established. We have quarterly monitoring reports for the FORCE site. Just last Saturday, we deployed a platform to collect acoustic data using a GEMINI camera that allows us to remotely position where the sonar looks.

Andrea - Are you looking largely for striped bass? Marine mammals?

Melissa- We are focused on fish, harbor porpoise, lobster, sea birds, and impacts of marine sound. Regulators are particularly interested in bass (which has a monitoring program), herring, and mackerel.

Spain

Juan - We are ending the installation of our fixed hydrophone around the Mutriku plant to monitor underwater sound. It is on the bottom and connected by cable to the plant. Now we have continuous monitoring of underwater sound. We only have 100 m of cable, so the hydrophone is at 6-7 m depth (shallow). This week we will finish installation and connection of hydrophone.

Andrea – Mutriku has the WECs integrated into the breakwater, correct?

Juan - Yes. It is an OWC device in the breakwater. We have 16 turbines.

Andrea - We have been looking at smaller uses of marine energy power rather than commercial, and Mutriku is a great case for this.

Japan

Andrea - Takeo, will you be attending ICOE?

Takeo - Yes, and I will attend the workshop.

Andrea - By the way, Aquatera is our contractor in Scotland, and they have a Japanese woman working for them – Yuka Johnston (Yuka.johnston@aquatera.co.uk). I believe she has done work on these projects in Japan. I will put her in contact with you and Daisuke. I think it would be helpful because I know that Aquatera has been working with some of the Japanese developers looking at projects there. She attended the workshop at EIMR; it was great to have her at the workshop because she had insights that I think are very similar to yours and Daisuke's about (in Japan) the importance of looking particularly at industries like fisheries that may be affected by (economically, socially, and so on) some of these marine renewables and how you can measure and determine those effects.

Daisuke - In Japan, the OpenHydro project will start. I heard they started monitoring for the baseline investigation.

Andrea - Where is the OpenHydro turbine? What part of Japan?

Daisuke - I hope they provide environmental data. Also, IHI is testing an oceanic current turbine. They are not very active in environmental impact assessments. Maybe after they install the devices, we can ask them to have their data, such as video data of the turbine.

Andrea - That would be great. I don't know IHI. I have been hearing about them from a number of people. Are they likely to be at AWTEC? Is it a Japanese or Taiwanese company?

Daisuke - Japanese company.

Andrea - It would be great to know if there is an opportunity to talk to IHI about environmental issues. Those are still marine renewable energy devices.

Daisuke - I will ask about latest information.

Andrea - Wonderful. Thank you. You'll be at AWTEC, Daisuke?

Daisuke - Yes.

Andrea - My colleague Zhaoqing Yang and I have a session at AWTEC. I haven't checked to see how many papers. We've called it "Science in Support of Marine Renewable Energy." We are going to try and get more papers into our session. We think it's a great opportunity to have more interaction in Asia, as we have had less than we have had in Europe.

Takeo - As I said, I will attend ICOE workshop and after the workshop I will be presenting a poster on collision risk. We conducted a laboratory scale experiment on collision risk. I am going to show results at ICOE. We also submitted a paper to AWTEC. I will see you at AWTEC and ICOE.

Andrea - Thank you for letting me know. I am going to be giving a paper on the data transferability. There will be some good papers and I will come see your poster.

Takeo - We are submitting a paper on environmental impact assessments on marine renewable energy to a Japanese journal to show to Japanese regulators. They are not familiar with reading in English so it is hard for them to search *Tethys* since it is in English. The paper is in review; I think it will be published soon. I think it will be helpful for Japanese regulators.

Andrea - When we wrote the State of the Science report, Daisuke, you translated to Executive Summary into Japanese. There is also an opportunity for the "one-pagers" or "short science summaries" to be translated into other languages. We found more and more the SSS those are useful to regulators and decision makers (policy makers) - just as much detail as they would want. I am very pleased you are publishing in Japanese journals. I think this is a big barrier in some countries if the regulators don't read English well. Any time you'd like to translate these products, we would be thrilled, and we can reformat them. Once you get your paper finalized, if you can write an English abstract we can upload to *Tethys* in Japanese and tag it with appropriate tags. We just need the English abstract.

Announcements

Andrea - Please check your email for documents on data transferability and collection consistency and BMPs. I hope to see some of you at ICOE in a few weeks. We probably won't meet over the summer, but we will be reaching out and asking for volunteers on the BMPs. After ICOE, we will be putting material together and will look for feedback. Please drop me a note and let me know if there are times you will be gone and not available to help.

Candace - Looking at future meetings, September 23 is a Sunday and November 22 is Thanksgiving.

Andrea - Thanks for pointing out, we will fix the dates.