

December 2018 Annex IV Analyst Meeting

0000 GMT Meeting Attendees:	1500 GMT Meeting Attendees:
Andrea Copping (US - PNNL)*	Andrea Copping (US - PNNL)*
Alicia Gorton (US - PNNL)	Amy Woodbury (US - PNNL)
Mark Hemer (Australia)*	Samantha Eaves (US – DOE)
Takero Yoshida (Japan)	Morgane Lejart (France)
Daisuke Kiazawa (Japan)*	Nolwenn Quillien (France)*
Ou Ling (China)	Juan Bald (Spain)*
	Melissa Oldreive (Canada)
	Dan Hasselman(Canada)
	Anna Redding (Canada)*
	Anne Marie O’Hagan (Ireland)*

*Country analysts

Andrea presented slides (attached):

- 2020 State of the Science
- Retiring risk
- Feedback (data transferability, socio-economics)
- Annex IV Analyst outreach
- Upcoming activities
- Roundtable

2020 State of the Science

Mark – Outline looks good. I am happy to contribute. I would like wider participation from the Australian community, we can talk about where we can be involved in various tasks. Do we want to capture decommissioning?

Andrea – Good idea, it is something that needs to be addressed so let’s see where that fits in. We don’t have a lot of experience to draw from. We do intend to contract to researchers for their time on significant writing tasks. If there is someone in your country that has something to contribute, we could contract with them.

Ling – Could we add results of regulator surveys? I think this is important.

Andrea – This is a great idea. We are getting results in. What do regulators understand? What do they need? We will have to get more countries to complete survey. I think of the surveys as providing the reason and direction for progressing and identifying misconceptions.

Takero – We are doing the survey now. I will email you ideas.

Andrea – The more you can consult and reach out within your countries, that would be great.

Juan – If we want to contribute to chapters, do we tell you that we are interested?

Andrea – If there are chapters you would like propose, contribute to, or lead, or propose we are open to that. Send me an email if there are places you would like to contribute. A good example of this is Anne Marie proposing to write a marine spatial planning chapter for this Stat of the Science and also Juan and Teresa wrote the chapter on the case studies for consenting on the last State of Science.

Andrea – Do you have some right now that you interested in mentioning?

Juan – Yes, I think we can contribute to different parts of the report, such as the marine spatial planning chapter. We have just started the WESE project and some of the work is focused on marine spatial planning and developing decision tools based on the marine spatial planning approach. As part of this project we are going to work with electromagnetic fields, noise, and sea floor activity. The specific aim of this project is to do monitoring around real devices that are placed in the sea. We are going to work with different cases to do this, one of which is the MARMOK device at BIMEP (Basque country). We are also going to work with on an onshore device, the WaveRoller, in Portugal at the Oster turbine site. With this data we want to be able to make decisions, to know if there are significant impacts. Next year the aim is to obtain the surfacing data in order to know if the devices can produce impact. Finally, another task linked with the data consistency is a data platform to share the data we are going to gather during this sampling and develop. We are interested in how this data platform is in line with what Annex IV wants to do. I think the WESE project needs to advance in line with all these developments so I think that the timing is good with developing the State of the Science report and the WESE project.

Andrea – Excellent. Much of what you are doing with the WESE project will fit here very well. I would like to have a discussion with you and Teresa. This fits into the test cases, even if the timing is such that we will have written the State of Science before you have all of the data, I think the WESE project could fulfill some of our needs.

Ann Marie – I don't know how feasible it, but under Retiring Risk you have Pathway. Would it be possible to include the consenting process, EIA specifically, to see how that has evolved as scientific information has developed or as scientific knowledge has developed?

Andrea – That is an interesting idea, let's talk about that offline. I was thinking strictly in the environmental, but you are right. As we know, the laws and regulations are not static either and are evolving.

Anna – I think it could help lots of stakeholders to have a section on where we are at with the state of the science on monitoring, particularly monitoring systems and how to work them in. You have the data side covered, but I think trying to build a system of sensors working together in coherent ways might be a good chapter and I think that the regulators would really like to see what the state of the science is so they are not asking for what can't be done.

Andrea – That is a great idea. I don't want to put you and the other FORCE folks on the spot too much, but you have taken a very big step in this direction. Would you be willing to lead a chapter like that?

Anna – Potentially, we can discuss that offline. There is some talk going on in Nova Scotia about this and I am involved in a project that is trying to do this kind of work. It is very challenging, and I think what we need to do is capture the lessons learned on these things so that others can move forward a little faster.

I will let you know. I think that there may be a group here in Nova Scotia plus some folks at the University of Washington that might be interested in doing this.

Melissa – Anna, I would love to have a chat with you offline about that with Dan.

Andrea – These are great ideas, please jot them down send an email off. You do have an email from a few weeks ago - we started to lay out chapters and authors but obviously it is still very open.

Retiring Risk

Mark – I am intrigued with your comment that regulators don't like it.

Andrea – In this industry, we are not far enough along for many regulators to feel confident enough. I think the reason they don't like it is because they feel like they are being told not to do this and it is a confidence process. We are working on talking with regulators as they don't attend conferences or read peer reviewed literature.

Mark – What do you have in mind for the case studies? Would it look at what information would be needed?

Andrea – Yes, the goal is to find out how we know, what do we still need to know, and how do we get there?

Mark – I think the approach is good. This reminds me of the OES task about stage gate metrics.

Andrea – The concept of stage gates as places where you make decisions. This would be a way to focus research efforts, requests for data collection, and help regulators think more in a focused manner.

Takero – What is the different between Stage 2 and 3?

Andrea – At Stage Gate 2, in order to succeed you want to say are there until enough data collected that you can show that this is not a significant risk. That would allow you to retire the risk. If you found there are not enough data, you would determine what data needs to be collected. By the end of Stage Gate 3, you should know if the data collected can lead you to retire the risk. I will work on this graphic.

Ling – I think the Stage Gate 2 and 3 may not have enough data. Because renewable energy is often similar to other water uses, developers will adopt mitigation measures directly without data. Maybe they have some measures without data input.

Andrea – That's an interesting perspective. I think that's a good strategy sometimes. The trouble is the next project comes along and there still is not enough data. Your point is well taken. This is happening a lot. It is very important that we look at analogous industries (e.g., EMF and offshore wind).

Ling – For now there are not enough projects in the water so there is a data gap.

Andrea – It's because we don't have enough projects in the water is why we don't have enough data. Please mark up the slides and send them back with your comments.

Juan – this is very interesting. I think that this methodology is very useful and could be used for EMF or underwater noises. It could be also applied for other environmental factors affected by MRE. When you talk about data that can help understand risk, what kind of data are you talking about? Sampling

campaigns you undertake in order to check if what you have identified is true or not? Could you please explain a little bit more about that?

Andrea – I appreciate that you see that this is very generic and general, and my hope is to try to work with it to see what it looks like with EMF, underwater noise, and others. I am hoping it will work with many. My thought was if you think how you do an EIA or other consenting document, you need to define what the risks are (may not use the word risk but that is what we are really after) and determine where you're at with the first stage gate, may do well as a desk-top exercise. Say I am putting in one WEC with one cable and we can see from another consented projects carrying the same amount of power, in similar sediments, with similar animals and the risk is negligible/very small. In that case, you might just be able to do that as a desk-top exercise. You would not have to go out and take more samples. If you went towards stage gate two, you would be looking at existing data, such as the data transferability process where you can go and find datasets that are similar and useful, and again it could just be a paper exercise. If you determine at stage gate two that there aren't enough data, you would have to at a minimum between stage gate two and three design some effective monitoring to go and collect data. Not to say that you couldn't do this and still be required or want to collect some small amount of data earlier to assure yourself that the decisions you made are correct.

Nolwenn – I have a question about EWTEC that you talked about in the previous slide. Would it be too late for the State of the Science report to mention that?

Andrea – Yes, good point. The timing is a little bit tricky, but the schedule I put through for the State of the Science could probably be shifted a month or so. I was thinking that we would probably go through this process and gather the right information and write it up for the State of the Science and use that workshop of experts to really air that. Almost like a peer review. You have really identified an important issue, I have thought about this because of the timing there is no other appropriate time to have it.

Ann Marie – I really like the idea about thinking where this fits with EIAs and consenting and maybe you could take a look at this from that point of view. I have thought of these stage gates as helping to satisfy the stages of the EIA, these are very generic and could be more specific maybe where information comes in.

Data Transferability

Mark – I had a brief chat with some regulators about the data transferability process in Australia and they are interested in learning more about what is involved.

Andrea – Perhaps we can set up one of the presentations, record it, and provide the recording/transcript. Let's talk to the other Analysts and see if it's worth it to provide a transcript of the presentations for you to translate and make it available to your regulators.

Anna – It is still a good idea to convene an international group for data transferability and I think it would be very useful. Regulators are not normally data people in terms of taking that data and trying to analyze it themselves so it needs to be brought to them in a format that they can easily digest with some confidence. In addition to that, updates where they can ask questions would be really great.

Andrea – Can anyone else imagine regulators having an interest in taking the time to go online every few months if they thought there would be good updates and an opportunity to ask questions?

Juan – I can check with the regulators here in Spain. I think they would be interested in having this data. I agree with Anna that they don't have time to process this data and would want something easy to understand and easy to read and to check.

Nolwenn – On the French side, we think that the regulators would be really interested in getting some information that would be easily available to them in. We have a plan to translate the regulator survey as many of them are not English speakers, but still have some work to do.

Andrea – you raise a very good point. If we were to do this, it would be in English but there might be the opportunity, for example, to create transcripts of written versions of presentations and questions, and maybe that could be translated. I know that is putting a lot on you guys to do the translation, but we need to be thinking about that.

Anne Marie – This depends upon the timing for us as we are currently waiting for new legislation and if that happens there will be different staff and processes so I think it would be very useful to them. So in principal, definitely yes.

Morgane – The issue is the differences in each country, maybe some adaptations are needed for the questions.

Andrea – That's fair, you can adapt the survey to your country and that is it is important that you are doing that.

Annex IV Outreach

Mark – How often are you looking to capture that information in the spreadsheet?

Andrea – Probably quarterly or semi-annually. If there is something you're doing, I encourage you to update the sheet. We have to report to OES twice a year. The more we can point out what others are doing, the better. March will be our next meeting. Who wants to go first? Would it be reasonable for everyone to present?

Daisuke – Maybe one time would be good, but we don't have a lot of projects.

Andrea – Certainly research projects, too.

Ling – I need time to prepare. When would the presentation be?

Andrea – March, you have 3 months to prepare. For the first one, maybe you can send questions in advance. We will follow up with you.

Juan – How long for the country presentations? 15 minutes?

Andrea – 5 – 10 minutes maybe. Pretty short because it also gives you the opportunity to point people to documents or web pages, etc.

Upcoming Activities

Andrea – We did not get a proposal in for OMAE. It is really expensive.

Anna – When is the EWTEC conference in Italy?

Andrea – September in in Naples. We do have an environmental track. The second extension for papers just closed and it is not looking quite as robust as the last one and I am not sure why. There are a lot of physically monitoring papers, but we are really hoping that some of the abstracts that came in will result in good papers.

Roundtable

Australia

Mark – We had our second Australian Ocean Renewable Energy Symposium. The sense is there is a lot going on in Australia - very optimistic. It was a very engineering-focused meeting. Environmental effects haven't been captured in the project space yet.

China

Ling – There are a number of folks within marine spatial planning which involves MRE. I think for the State of the Science report, Chinese scientists can play an important role in this chapter if there are some needs.

Andrea – That would be excellent. That would be a great contribution.

Canada

Anna – Just so you know we just had our Renewables Canada conference here a couple of weeks ago, reality checked in and people are realizing that it is much more difficult and there are some challenges, which usually lead to a slow down not a “go ahead” kind of approach. You are probably seeing papers being submitted with data that has been collected in the past as people working on data sets they already have.

Andrea – I think you are right Anna. I think worldwide the amount of funding that has gone into research in the field has not been growing it has been shrinking. We hope with a few projects like WESE coming into the European Union that there might be some nice leaps forward, but it has been a little thin. However, there are some good project and there has been a number of papers that have been taking a broad view to move forward to use what we have in consenting.

Anna – Do you have a date for the workshop in Scotland and could it perhaps be married with the EWTEC conference, back-to-back so people could attend both?

Andrea – The workshop in Scotland will be on February 26. Frankly getting workshops around EWTEC is becoming quite difficult. We looked at another conference, OLME, which is more of an engineer conference, that is being held in Scotland in June, but I was horrified at the cost of it.

Anna – I have attended one of these engineering conferences and they are very expensive.

Andrea – I really didn't feel like it was the right venue. We are doing this independent of a conference. The ORJIP working group is meeting the day before this one which is why we know there will be the right people there. All the major developers belong to that group and it is actually funded by British and Scottish government funds so they are very engaged.

Melissa – Is it possible to participate remotely or will we have to wait until after the fact?

Andrea – Let’s see if we could set that up for at least part of it. And let’s chat to see if you can send somebody, I think it would be helpful to have more of the North America perspective.

Anna – I am working on a project with Cape Sharp Tidal. You all know that the Open Hydro turbine that was deployed in Minas passage. The blades have not been turning for some time. There are data of relevance to Annex IV as there are four hydrophones and Gemini sonars attached to the infrastructure. We have been having a look at the data trying to see if there anything we can get from these that would be useful going forward, but perhaps more importantly lessons learned and recommendations going forward will be in a report on that project we funded that needs to be submitted by March. So we have strong learnings from that particular project.

I am involved in another project with another system further down the province near Digby. You might know that Sustainable Energy deployed a platform called “Plathigh”. It is moored in Grant Passage and I have some funding to work with others to try to develop sensor monitoring systems to try to address the gaps in knowledge that are really difficult when you have a bottom moored turbine like the Open Hydro model so trying to address some of those issues about sensor performance and looking at mounts and those types of things. The turbines for that mounts will not be installed until winter, which could be difficult, at which time they will start monitoring.

Andrea – You have a challenge with Open Hydro. This is becoming a real issue with these companies going out of business.

Anna – government and other stakeholders are not releasing funds quickly which is a concern that might happen. It certainly stalled the project that was happening near Digby because the province went into a tailspin about the whole thing. These types of things are hold up support for projects. When you were talking about regulators being consulted, I think it would be a good idea to also include the government promoters of this industry because what we are seeing is still after all this time when we talk about networks and scientist and government people and industry all talking together, they don’t do this and still operate in silos. You might want to give some consideration to a few people from energy department where these developments are happening to be involved in those conversations with the regulators.

France

Morgane – Since we are new to the Analyst group we would like to volunteer for the next meeting to present our projects in MRE.

Andrea: That is excellent. We will sign you up. Thank you very much!

Spain

Juan – We celebrated at the beginning of this month the kick-off of the WESE project. It just started so we don’t have interesting news, but we hope to start working seriously at the beginning of next year. We will keep you informed. I hope we will find interesting results.

There is another one called SeaWave that has been funded as well by the European Union and it is UK based. The leader of this project is EMEC, but I don’t have much more information. This project is similar to WESE, but I don’t have more information.

Andrea – We will have Aquatera follow up on this this.