Passport to the oceans of the future:

Delivering marine energy with science linked to policy

Joint workshop MASTS Marine Planning and Governance forum, Environmental Interactions of Marine Renewables (EIMR) and Marine Scotland.

Report prepared by Anne-Michelle Slater

July 2021

Workshop steering group

Co-ordinator: Anne-Michelle Slater, University of Aberdeen and MASTS Marine Planning and Governance Forum member

Members: Janelle Braithwaite, Marine Scotland, Damion Collins EIMR, Annie Langlet, SAMS, EIMR, Beth Scott, University of Aberdeen, and Chair of MASTS Renewable Energy Forum, Rachel Shucksmith, UHI and Shetland Islands Marine Planner, Co-chair MASTS Marine Planning and Governance Forum, Ben Wilson, SAMS and Environmental Interactions of Marine Renewables, David Wolfe, EIMR

Recommended Citation

Slater, A-M. (2021). Passport to the oceans of the future: Delivering marine energy with science linked to policy. Published by the Marine Alliance for Science and Technology for Scotland (MASTS), 23pp.

Environmental Interactions of Marine Renewables (EIMR)

MARINE ALLIANCE FOR SCIENCE AND TECHNOLOGY FOR SCOTLAND

marine scotland

Table of Contents

1.0 Background

In February 2021, a group from MASTS, Environmental Interactions of Marine Renewables (EIMR) and Marine Scotland began exploring options for a joint event on marine energy science and policy development.

The original concept was to bridge the gap between events that each group would normally arrange 'in person' and the virtual world in which we were all currently existing. Encouraged by the online support and experience available from MASTS, a steering group decided to arrange a workshop. In order to straddle our interests, the starting point was the capacity of the North Sea to deliver renewable energy. We wanted to include emerging science and the timing of the review of Scotland's National Marine Plan provided an excellent context.

We sought to deliver a wide range of content but encourage participant conversation. We aimed for a range of speakers delivering 7-minute recorded talks. Talks included findings from funded research, ongoing projects, and some emerging thinking across the science policy interface for marine planning. Marine energy was interpreted in the widest of senses, but the main focus was on offshore wind in UK waters, with particular detail about Scotland.

The talks were themed as follows:

- The scientific route to marine renewable energy in 2050 chaired by Ian Davies (Marine Scotland)
- The marine renewable energy governance landscape to 2050 and the role of policy Lucy Greenhill (Howell Marine Consulting)

The recorded talks were interspaced with 4 Q&As

Two breakout sessions had participants randomly allocated into one of 7 groups. Each group had a facilitator and a scribe. Questions for discussion were developed by the steering group based on the confirmed talk topics and designed to engage participants with the themes highlighted in the presentations (recorded talks).

One question was used in both breakout sessions: *Rights and industrialisation of the seas v climate emergency and SDGs*? It was recognised as an unexplored area that would justify extended discussion. A supplementary question: *By 2050 what is success for our seas is it: economic, communities and environment?* This was discussed by some of the groups and was reflected in a poll question for the participants.

2.0 Introduction

This report is an overview of **Passport to the Oceans of the Future: Delivering marine energy with science linked to policy.** A joint workshop organised by MASTS Marine Planning and Governance Forum, EIMR and Marine Scotland, 27th May 2021. In particular, it captures the discussions in the breakout sessions. The scribes did an excellent job in providing this and each has adopted their own style. This includes verbatim notes of discussions, summary boxes and provision of additional information.

2.1 Attendance and participation

There were 199 registrations for the event. The registration process invited questions to be submitted and these were relayed to the relevant speakers and chairs to be incorporated into the event.

On Thursday 27th May 2021 at 1.30pm 100 logged on. It was noted that participants joined from China, Europe, including the West of Ireland, many parts of the UK and all parts of Scotland. This enriched the nature of the questions and enhanced our discussions. A feature of the online discussion, which was vibrant throughout, was that although questions were often sparked by a talk topic, answers were provided by other participants in the side bar. This collegiate approach moved the discussions forward and focused the Q&A sessions.

Attendance reduced after the Q&A and the second round of presentations. One breakout session had just 4 participants for their second session and therefore their discussions are not recoded in this report. The smaller group (40-50), however, did largely stay with the workshop until it concluded.

The workshop was attended by a wide range of participants: academics from across the UK, plus universities overseas, JNCC, Scottish Government, including Marine Scotland Science, Nature Scot, representatives from industry : fishing and energy and ENGOs including , the Scottish Wildlife Trust RSPB and Scottish Environment Link.

2.2 Technical issues and delivery

One speaker was undertaking field work and couldn't connect on the day. We relayed questions to him by email and answers were provided and transferred to the side bar. One speaker had opted for live delivery and another was required to do so due to technical reasons. Other speakers had various technical issues with recording and uploading and we really appreciate all the effort that went in this form of presentation.

2.3 Poll Questions

Three Poll questions were used to engage the online audience at intervals throughout the workshop and to helped provide a context for the discussions. The questions were:

1. Where are you?
    a. Scotland
    b. Rest of UK
    c. Europe

2. Are you aware of Scotland's National Marine Plan Review?
    a. No
    b. Yes
    c. Yes and read it

3. Chose top 3 you would prioritise to achieve 'success' for our seas by 2050
    a. Biodiversity
    b. SDGs
    c. Blue Growth
    d. Natural capital solutions
    e. Marine energy

2.4 Idea Boxes

The report also has 5 idea boxes. These are summaries of key points from the workshop. They provide:

- insight to the vision for the workshop,
- ideas and questions that emerged during it
- links to other research and knowledge exchange events.

2.5 Programme

13:30 – 13:35	**Welcome and Introduction:** Anne-Michelle Slater
13:35 – 13:55	**What is the scientific route for marine renewable energy to 2050?** 1. Athanasios Kolios, Strathclyde: The capacity of the oceans to deliver energy via offshore technology 2. Bill Austin, St Andrews: Blue carbon 3. Cathy Tilbrook, Head of Sustainable Coasts and Seas, NatureScot: Planning for biodiversity and recovery in our seas
14:00 – 14:10	**Q&A – chair:** Ian Davies, Marine Scotland
14:10 – 14:30	1. Paul Tett & George Charalambides, SAMS: Co-Location 2. Sandy Kerr, Heriot Watt: Blue Economy 3. Beth Scott, Aberdeen: Why we need a REAL Ecosystem Approach
14:30 – 14:40	**Q&A – chair:** Ian Davies, Marine Scotland
14:40 – 15:05	**Discussion session 1: The role of science and effective engagement to policy**
15:05 – 15:15	*Break*
15:15 – 15:35	**The marine renewable energy governance landscape to 2050: what is the role of policy?** 1. Damon Hewitt, Marine Scotland: Scottish Marine Plan 2. Rachel Shucksmith, Shetland Isles: Implementing Regional Marine Planning 3. Kirsty Wright, Marine Scotland collation: Fishing and Offshore wind
15:35 – 15:45	**Q&A – chair:** Lucy Greenhill, Howell Marine Consulting
15:45 – 16:05	1. Inne Withouck, NAFC: Planning for Marine Planning: a framework assisting spatial decision support for siting offshore renewable energy 2. Catherine Kelham, RSPB Senior Marine Conservation Planner: investment in nature from offshore wind and other technology to help manage our seas. 3. Eirik Finseras, Bergen: Designing a refined legal framework for the licensing of offshore windfarms in the North Sea basin
16:05 – 16:15	**Q&A – Chair:** Lucy Greenhill, Howell Marine Consulting
16:15 – 16:40	**Discussion session 2: Holistic governance for marine renewable energy**
16:40 – 16:45	*Break*
16:45 – 16:50	**EIMR 2020 Conference Prizes** 1. Best Student presentation 2. Best creative use of the online presentation format 3. Most ground breaking research to solve an industry problem
16:50 – 17:20	**Summary and feedback**
17:20 – 17:30	**Closing and next steps: Anne-Michelle Slater**

2.6 Workshop organisation and facilitation

The presentations were chaired by Dr Ian Davies (Marine Scotland) and Dr Lucy Greenhill (Howell Marine Consulting)

The project steering group facilitated the breakout sessions. We are grateful to others who also lead sessions, often at short notice. This included Millicent Ele, University of Aberdeen, Sinead Sheridan, NatureScot, Tim Stojanovic, University of St Andrews, and Eddy Wifa: University of Aberdeen.

We are extremely grateful to all the scribes:

- James Chapman, University of Aberdeen
- Emma Defew, MASTS
- Corallie Hunt, University of St Andrews
- Zoe Hutchison, Marine Scotland and University of St Andrew's
- Finlay Kerr, UHI
- Laurence Teillet, University of Aberdeen
- Inne Withouck, NAFC Marine Centre UHI

Enormous thanks to Hannah-Ladd Jones (MASTS) who provided administrative and technical support.

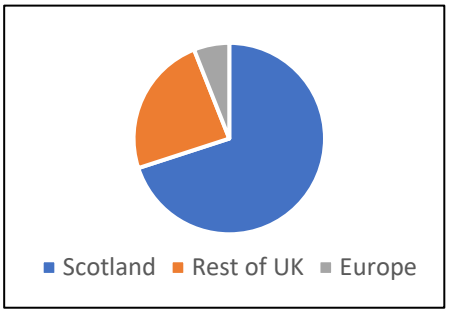
3.0 Workshop report

3.1 Chair's Introduction

The workshop was chaired by Anne-Michelle Slater, University of Aberdeen. She welcomed everyone and noted the high turnout of people joining the online event. The overarching aim of exploring the delivery of marine renewable energy with science linked to policy was emphasised. A focus on discussion and making connections was noted before the first poll was conducted.

3.2 Poll 1: Where are you calling from?

a. Scotland: 70%
b. Rest of UK: 24%
c. Europe: 6%



3.3 IDEAS BOX 1: Context and overview of workshop aims

The emphasis on marine systems as conservation targets, and at same time as sites of sustainable economic activity, is an increasingly important theme in Scotland and globally. The EU is investing in the Blue Economy, while economic development in Scotland's seas is seen as a key route to increasing the wellbeing of Scotland's people. Probably the most obvious and immediate growth area is marine renewable energy. Scotland pioneered aspects of wind, wave and tidal energy. The recent auction for wind energy development sites south of the border produced stunning levels of interest from serious project developers, reflected in the very significant sums offered for lease areas. Recent press reports suggest that the ScotWind leasing round in Scotland will also have spectacular outcomes. We are truly entering a new era in the use of our seas. Marine renewables have potential to lead the drive to decarbonise energy production. The seas can therefore reduce the climate change pressure on the planet, and help to buffer the impact of current concentrations and future emissions of CO_2.

However, economic development has to be sustainable, to respect conservation targets and objectives, and to operate under social licence. Impacts need to be understood across natural, social and economic sciences and managed for the benefit of all. The breadth of the problem is considerable and is faced daily by licensing teams and policy developers. We need to provide them with good quality cross- and inter-disciplinary science to inform their decisions.

It is essential that the breadth of the relevant considerations is understood, grasped, and delivery is made to match the complexity of the questions. The prospectus for this conference recognised the problem. The questions posed were broad, as were the themes of the discussion sessions. However, although we were treated to a series of informed and interesting presentations, they generally felt, to me, far narrower in scope than the subjects of the sessions. They provide a small number of pieces for a large jigsaw, but how they fitted into the jigsaw was often not clear. It is difficult to do so when we may not be clear on the image and ultimate size of the jigsaw. Is the problem that the questions that need to be answered are too large to fit into the scale of a typical ESR research project? Are we too bound by our traditional disciplines and specialisms within them? Do ESRs today inevitably study at the feet of highly specialised single-discipline masters? Are we therefore not producing ESRs who can contribute effectively in the cross-disciplinary fields that are needed to deliver the full potential of marine systems?

We are at the threshold of a new era of marine renewable energy. The marine community needs to be ready and equipped to deliver it.

3.4 Recorded talks, session 1: What is the scientific route to marine renewable energy to 2050?

1. ***The capacity of the oceans to delivery energy via offshore technology***, Athanasios Kolios, University of Strathclyde.
2. ***Blue carbon,*** William Austin, St Andrew's University
3. ***Planning for biodiversity and recovery of our seas*****,** Cathy Tilbrook, NatureScot

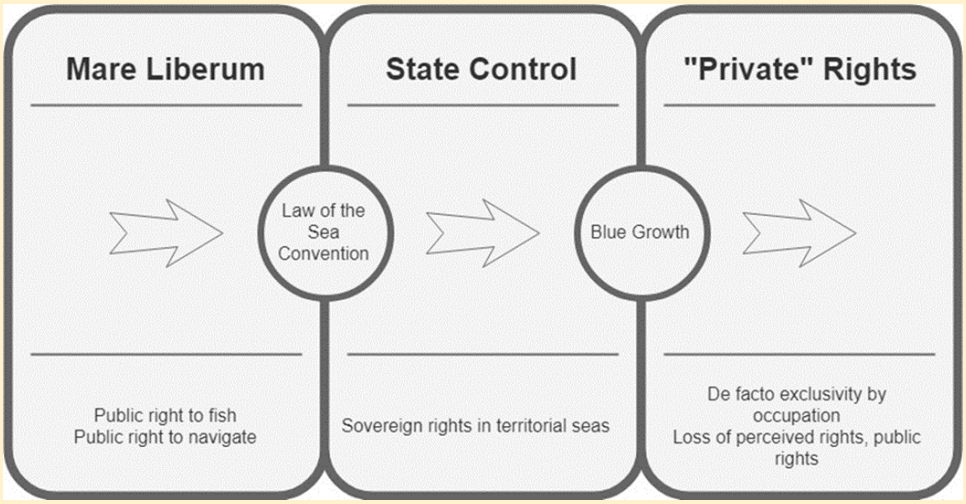
Watch the video here

3.5 Recorded talks, session 2: What is the scientific route to marine renewable energy to 2050?

4. ***Colocation*****,** George Charalambides and Paul Tett, SAMS
5. ***Making Property at Sea*****,** Sandy Kerr, Heriot Watt University
6. ***Why we need a REAL ecosystem approach*****,** Beth Scott, University of Aberdeen

Watch the video here

3.6 IDEAS BOX 2: Making Property at Sea, Dr Sandy Kerr



The historical development of property rights on land is complex. In medieval Europe sovereign powers assumed absolute rights in land, which were eventually transferred to individuals. During the 20th century private property became synonymous with economic growth and market efficiency. So much so that, following the dissolution of the USSR, western financial support, was contingent on the privatization of land. In 2007, China introduced laws allowing private ownership of land. On land, the dominance of private, over public, rights is near absolute.

The productive capacity of markets is irrefutable. However, market failures can result in major social and environmental costs. Market driven deforestation and intensive agriculture, drive climate change, biodiversity loss, flooding and desertification. The historic dispossession of indigenous lands is widely regarded as a breach of human rights; and the concentration of landownership in the hands of a few is acknowledged as a social bad. In Scotland 50% of land is owned by approximately 400 people. However, unpicking historic injustices is never easy and attempts to redistribute land rights may be countered by legal action, and claims for compensation. Equally, failure to act is a frequent cause of civil unrest and even violence.

It is arguable that the enclosure of sea space is now following a similar path. Over the 20h century coastal nations steadily increased their claims over marine resources. Coastal states are now looking to new maritime activities (e.g. clean energy, scarce minerals, aquaculture, multi-use platforms) to deliver 'Blue Growth'. A distinguishing feature of these new industries, is their permanence. For example,

occupation of space by aquaculture and renewable energies is likely to be permanent. Blue Growth businesses naturally seek control over resources; while states seek to regulate. Permissions, or licence to operate, is generally required before development can take place. This is creating a patchwork of quasi-property rights, some of which are transferable. Experience on land suggests that this process will only accelerate.

Stakeholder engagement is acknowledged as a feature of good marine governance as planners try to balance competing interests. However, there is little public debate about, marine governance processes, or the transfer of rights from the public to private domains.

On land, enclosure and the creation of private property, has delivered economic growth. It has also generated environmental, social and cultural harms that will last for generations. Redressing these problems is a difficult and complex process. There is evidence that a similar process of enclosure is now underway in the marine environment. We are now at an important point in time where society can choose which marine rights its wants to give away and those it wishes to retain.

3.7 Breakout session 1*:* The role of science and effective engagement with policy

1. **<u>Can we square the triangle of net zero, marine energy and communities?</u>**

    - Community awareness and knowledge of the scale of change required is the greatest challenge. The size of marine space for energy projects is likely much bigger than communities often realise, showing maps and what the changes will actually look like, will raise awareness.
    - Equally, NIMBY attitudes and knowledge of negative impacts are still more prominent than positive outcomes from marine energy/net zero, "selling" these positive factors better would help the developments. For example, replacing industries of old, turbine blade manufacturing replacing ship building etc. Making sure the people that are impacted are also people that can benefit.
    - Full population is impacted, not just those by the coastline. Striking the balance across society, is part of the broader *Just transition* not just the marine question. The problem arises from the speed required to reach net-zero. Balance is key to meet the transition pressures but ensuring impacts on communities are well recognized and mitigated.

2. **<u>How dynamic is MSP as a governance system?</u>**

    - There is a lot of potential for MSP being a dynamic governance system – issues limiting this are to do with communication and engagement. Research looking at marine licensing shows that there are opportunities for people to be engaged in MSP but people don't necessarily know the opportunities are there.
    - The entry point for people is usually when applying for a marine license after the decisions have already been made about what the licensing allows / use of space etc.
    - Experience of marine planning work is that the governance system is dynamic and seeks to carry out consultation at all levels of marine planning.
    - Some issues with a disconnect between the bottom-up consultations in regional marine planning with top-down licensing managed by Marine Scotland.
    - Regional Marine Planning Partnerships in Scotland are all about engaging local stakeholders. Appears to have been different experiences between Shetland and Clyde, but very different areas. Most people live on the coast and not at sea but a large and diverse group to engage.
    - Think more about Integrated Coastal Zone Management – Loch Etive case study was very successful: https://masts.ac.uk/research_projects/loch-etive-case-study/
    - Why have we moved away from ICZM toward MSP, which is more algorithmic and less about community engagement?
    - Distinction to be made between licensing and plan making. Delegation of regional marine planning given to marine planning partnerships however licensing is taken care of by Marine

Scotland. Decentralisation of plan-making but National Marine Plan is very top-down. Does this prevent regional marine plans from adopting the local feedback?

- Some areas of consideration around:
  - Resources – provision of local teams is resource-intensive;
  - Local governance – section 12 of Marine Act – local governance acts – islands councils to take forward local planning.
  - What is the capacity of local organisations to take on statutory legislation?
- Strong emphasis on the important role of professional facilitators in engaging local communities – could these be publicly-funded? Could provide an essential conduit into the processes of planning for local community who may not know that it exists.
- Community education was a service in Scotland – provided and trained community facilitators in community governance. Has depleted over the last 10 years.
- Fishing community representatives are outspoken (vocal) but feel disempowered – issues around language translation between policy/academics and fishing community.
- Perhaps the 17 events around the coastline wasn't enough but can we learn lessons about engaging people locally during these events. E.g. for regional marine plans. Are there other ways to get into communities and really find out what people want?

Summary points:

- MSP has potential to be dynamic
- <u>But</u> still issues around communications and engagement with local / regional communities who can feel disempowered by lack of early engagement early in the process
- Bring back ICZM into planning
- A role for publicly-funded marine community facilitators / Community education as a way of training facilitators in community governance?

3. **<u>Rights and industrialisation of the seas v climate emergency and SDGs?</u>**

- More insights into coexistence of technologies and different industries are need to fully understand how best these can work together, however before that the definition of ownership needs carefully considered and is intrinsically linked to the right to industrialization. Depending on your background and point of view of ownership definition, the right of government to use its authority to support the development of specific sectors may not be fully culturally supported. This is especially relevant to expansions beyond the EEZ into offshore waters.
- Industrialisation of the seas may not be in complete contradiction with the climate emergency: renewable energy industry will help in the fight against climate change
- We need to create bridges between different sectors, importance of interdisciplinarity highlighted
- Need to encourage diversity and inclusivity. Not only through public participation, but also through representation in companies and governments
- Education is an important point. The new, young workforce may bring a change of values
  - The pandemic was also mentioned as possible driver for mindset change
- Spatial planning was hinted at as an important tool: the right industry at the right place will maximise benefits when it comes to ecosystem services
- Importance of law and litigation highlighted. E.g.: recent litigation against Shell – what results will it bring in the long run? https://www.bbc.co.uk/news/world-europe-57257982
- System of licensing for renewable energy at sea discussed. Bidding may create a monopoly for big and wealthy companies
- Can pressure on companies encourage them to reach net-zero?

- Problems with the concept of "net-zero". Compensation may be dangerous if projects are rushed, especially in the marine sector. Some projects may be a waste of money or even have negative impacts in the end. Need additional research
- COP26 might bring answers

4. <u>What support for coexistence should be provided by science?</u>

- No effective framework for ocean energy so far
- Need more research to be able to quantitatively say what sorts of environmental issues (esp. impacts on ecosystems) are associated with the development of marine energy
- Need to better understand linkages between ecosystems and trade-offs. How can cumulative impacts affect ecosystems? Thresholds and tipping points must be better studied and understood. Incredibly difficult to understand interactions
- Still incredibly difficult for scientists and policy-makers to acquire data, understand it, interpret it and share it. What data should we ask industries to acquire and share? How not to overburden them?
- May lack the mechanistic to understand linkages. Are the tools we have in the moment enough to reach our goals or do we need to rethink how we research?
- We are in the ocean decade (UN): will probably encourage investment in ocean science (discussed: no budget to it, but may leverage national funds). New projects will probably be initiated in the coming years to better understand the above points
- Lots to be learned from other countries. E.g.: the Netherlands have a different system for investment in marine science – can we learn from it?; Scotland is not as space-limited as other countries such as Belgium for instance, so we may learn from its experience on how to deal with an increasingly crowded sea. However, size of the ocean territory may not be proportional to its potential for blue growth

5. <u>Is the ecosystem approach compatible with high growth in marine energy?</u>

- Is sustainability compatible with high growth?
- If going to live by the plan, need a holistic approach to include all chapters. Should all possible uses of an ocean area be on the table at the start? Different areas are useful in different ways.
- Failure to take an Ecosystem approach is a risk – a failure of responsibility to look at individual developments – need a different way of thinking, esp when scale of activities is going to affect ecosystems
- Technology cannot exist on own. Ecosystem approach needs to be 11ecognized. Think about positive effects – what ecosystems are being produced by areas of renewables, that are perhaps closed to other activities. Balance and hybrid systems are key, but no one right answer, so best possible solution.
- Natural capital, biomass, carbon all needs to be taken into account when looking at policies.
- We should learn from mistakes made with aquaculture. Whilst TCE owned it, their priority was to make money. TCES can look at socio-economics and other factors, still a look way from looking at it holistically.
- No scientific proof of new communities developing on windfarms? Problems with succession (e.g mussel faeces causing anoxic sediments). Need more evidence/data to allow discussions to take place.
- Ecosystem approach is needed, and previously focused on short term impacts. Need to look longer term, as changes are often much more gradual and we don't understand the linkages or have the models. Don't understand synergistic/antagonistic effects etc.
- Collation of industry data in a single portal is needed, esp for cumulative effects. Germany has standard system and database – UK to learn from them. Gov't took 5 years to put the underpinning work in place, but then industry pays.
- Pro-ecosystem approach, but will it end up being a slow bureaucratic system? Will the public stand for that?
- Cost of data collection – who pays? Developers? Gov't? Mixed model?

- Various environmental cycles we don't fully understand over long time scales
- Sharing of data is key – a licence to operate
- Could The Crown Estate ask developers to pay rent? Needs to be less competitive around data sharing.
- Is a land based mindset actually appropriate for the sea?
- We cannot stop development waiting for the perfect model, especially when things adapt over time.
- Do we need a risk based approach that is based on not having all the data?

Summary points:

- Large agreement that we need an ecosystem approach because there is a need for all issues (everyone at the table) to be debated – and that should be earlier than later in the process. Ecosystem approaches allow longer term views that contain positive as well as negative effects can be 'costed in different ways: natural capital, population change and carbon equivalents. Failure to do so will introduce high risk in continuing sustainable use of oceans. However, as ecosystems are complex, will this need increase risk of slowing down policy agreement. –

- A cumulative environmental approach (CEA) that is risk based discussed. Noted that risk needs to be looked at in a focused way – risk of what or risk to which species or risk to which aspect of functioning of marine ecosystem….

- To help speed up – need an increase in data gathering and sharing and perhaps Crown Estate Scotland should include a payment for the study of environmental effects and data has to be shared.

6. What questions do marine policy pose for science?

- How can science fill very specific data gaps, e.g. where OWF are, where fish migrate to, where the key feeding grounds are, generally working with local scientists as much as possible, also providing the strong evidence base for the marine policies to be based on.
  - answer is likely quite different if talking strategic v local or regional policy – for strategic policy – policy makers asking for rules of thumbs but can be tricky and often lead to generalisations on complex topics.
- Regional plan has to conform with national guidance e.g. NMP which is the rule of thumb approach – strategic can be quite vague/wooly but if you want to develop something more locally/regionally you might not align with the strategic national plan but it's what would work at the level – scales are important and may restrict relevance.
- What is occurring to quantify the actual impacts – real data needs to inform the science and impacts which then inform the policies
- What would you want science to do before the development? Large changes are implied, is this shown elsewhere and if so, what was the pre-development data like and is it a fair comparison
  - Policy cannot function without science – we need sound evidence, the two should run hand in hand. Often get scientific studies that are essentially nice science but what can we do with it? We need communication about what is needed so that science can inform the correct question
  - We need science communicators and policy communicators so that we get the information that is needed (and these might be different to scientists or policy people?)
  - Changes, resilience etc relies on data, it may not be data that we have, that is a global issue
  - Often not aware of what science can do to answer questions, need people to bridge the gap
  - Often questions will be asked that are complex or not feasible to ask and answer with science – communication between science and policy people is very important (BRIDGE – agreed)

- Some people do bridge the gap or span in the roles they have – often information is reported in scientific journals etc. which may be a bit inaccessible – time for reading is often an issue – need abstract of abstract of abstract – just give me the bottom line (AGREED).

7. How can science contribute to a holistic approach to marine governance?

Science

- Agreement with what was said during Beth Scott's presentation, that we need to get the science together
- Science – does this also include social science?

At what stage should science contribute?

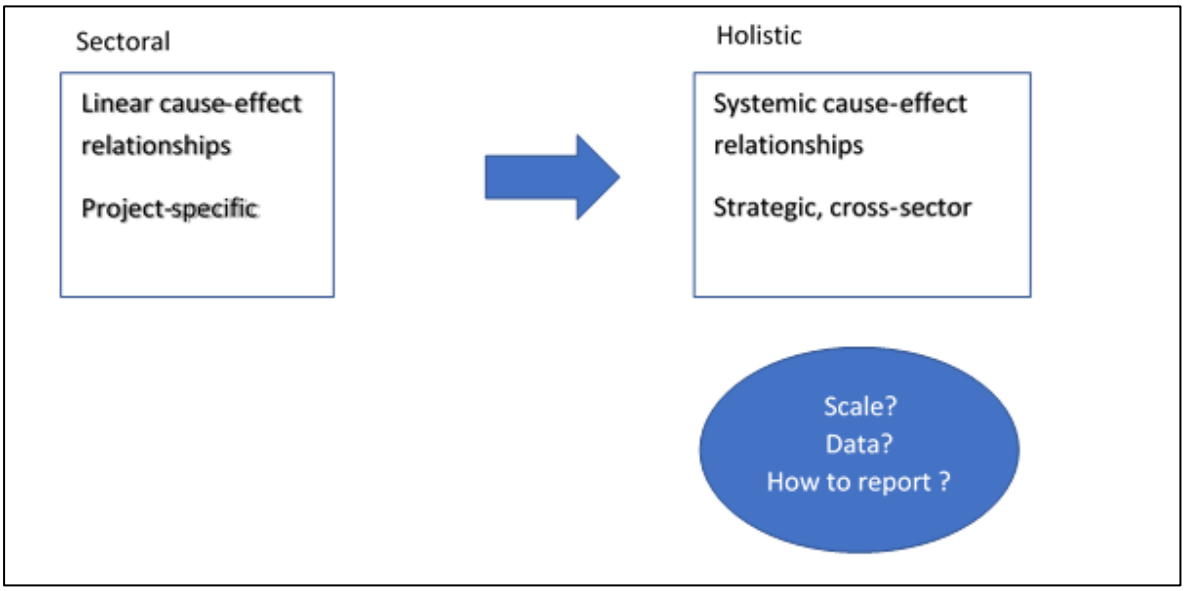
- All stages – e.g. at pre-application stage for the baseline, during the development stage for the monitoring, and at the post-construction phase

The availability of data for science

- Data collected for monitoring should be more readily available, industry should collaborate with academia for data collection, confidentiality agreements are a barrier
- BUT science is more than just data collection, need theory, hypothesis testing, modelling

Holistic

- We seem to be moving to a more strategic, cross-sector and holistic approach now, before it was more project-specific
- Important to consider is scale – what scales are ecological questions relevant at?

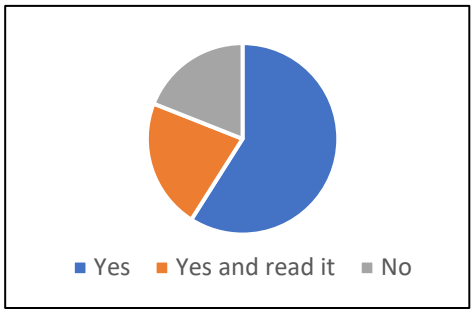


Governance

- Governance can mean different things, it can refer to transparency in the decision-making process, accountability, and actors involved. There are multiple types of marine governance
- It's a complex thing to put boundaries around, and can mean politics but also legislation, but is also influenced by NGOs and industries
- Governance is also different in different countries, for example the deploy and monitor approach adopted in Scotland is a good approach (see Guidance document)

3.8 Poll 2: Are you aware of Scotland's National Marine Plan Review?

a. No:19%
b. Yes: 59%
c. Yes and read it: 22%



3.9 Recorded talks, session 3: The Marine Renewable energy governance landscape to 2050: what is the role of policy?

1. ***Scottish Marine Plan Review*****,** Damon Hewitt, Marine Scotland
2. ***Implementing Regional Marine Planning*****,** Rachel Shucksmith NAFC, Shetland Isles
3. ***Colocation: fishing and offshore wind energy*****,** Kirsty Wright , Marine Scotland

Q&A

Watch the video here

3.10 IDEAS BOX 3

The Fisheries and Offshore Wind presentation sparked a range of questions before and during the workshop. Kirsty Wright, Marine Scotland summarises them below.

Fisheries and Offshore Wind: Workshop Questions and Answers

Four themes that ran across the points raised:

1. Fisheries stakeholder engagement and consultation,
2. Good practice guidance for fisheries and offshore wind working together
3. Marine Spatial Planning (MSP)
4. Fisheries interactions with cables.

The answers highlighted work that Marine Scotland is already addressing, for example in terms of fisheries stakeholder engagement and consultation, Marine Scotland engage with the fishing industry at an early stage of planning and developments when matters can be adapted to incorporate coexistence in both planning and licensing process.
Marine Scotland-Licensing Operations Team (MS-LOT) encourage developers to engage with the fishing industry in advance of applications. Fishing stakeholders are also part of Commercial Fisheries Working Groups and other forums such as FLOWW where they can provide direct input to developers. MS-LOT direct developers towards FLOWW good practice guidance for offshore developers working together with the fishing industry.

Turbine spacing and windfarm configuration is a key evidence gap in Marine Scotland's Scottish Marine Energy Research Programme (ScotMER) see link here: Marine renewable energy: Science and research – gov.scot (www.gov.scot). More information will assist with investigating coexistence and fisheries displacement for MSP.

Cable routes are being considered in terms of the ability to fish within windfarms. Marine Scotland recommend that cables are buried where possible to avoid any negative interactions with fishing and where burial is not possible, cable protection measures are recommended. The National Marine Plan also recommends cable burial to maximise protection of the cable and reduce conflict with other marine users. Marine Scotland is working with developers and fisheries stakeholders on 'overtrawlability' trials to minimise the risk, as much as possible, of fishing gear being snagged on cable protection measures.

3.11 Recorded talks, session 4: The Marine Renewable energy governance landscape to 2050: what is the role of policy?

1. ***Planning for Marine Planning: a framework assisting spatial decision support for siting offshore wind,*** Inne Withouck, NAFC Marine Centre UHI.
2. ***Investment in Nature from offshore wind and other technology to manage our seas,*** Catherine Kelman, RSPB.
3. ***Designing a refined legal framework for the licensing of offshore windfarms in the North Sea basin,*** Eirik Fineras, University of Bergen

Watch the video here

3.12 IDEAS BOX 4: Eirik Finserås PhD candidate, University of Bergen, Norway

`Designing a Refined Legal Framework for the Licensing of Offshore Windfarms in the North Sea Basin`

My presentation drew attention to the complex dynamics of evolving technology, public perception and changes to habitats which may take place during the lifetime of a windfarm. As such, any EIA-related regulation must necessarily make room for flexible mechanisms which can allow for subsequent change or extensions to existing windparks without necessarily triggering a new obligation to conduct a further EIA. In investigating potential legal avenues for such flexible mechanisms, it had become apparent in my first year of research that they were by-and-large not present. I made such assumptions based on the limited jurisprudence I had found on the specific matter of changes and extensions to existing EIA developments.

Workshop participants introduced me to the concept of the Rochdale Envelope, originating from English judicial review cases in 1999 and 2000 to become the favoured industry practice in the UK. Participating and presenting in the workshop has therefore contributed significantly towards my current research. I am now investigating the legal validity of the Rochdale Envelope in a comparative perspective. I will attempt to not only examine the deficits of the approach, but also how these can potentially be improved to promote legal certainty in licensing procedures for offshore windfarms. Contact information: https://www.uib.no/en/persons/Eirik.Finseraas

3.13 Break out session 2: Holistic governance for marine renewable energy

1. **What does a 'Just Transition' mean, and how does the Just Transition framing change / affect the development of marine energy, including its' governance at national level**

   - The just transition will have significant impacts and challenges for the development of marine energy across the workforce, economy, natural environment and civic environment, community engagement & uptake and is underpinned by the political will and possibly to enact the vision.
   - Work to date may seem to be a little behind the scale and rate required to reach net zero, if it is to be done in a just way, as a just transition may require more thoughtful, slow, and expensive considerations if done correctly. This includes understanding the skills required and preparing for the new workforce, communicating, and engaging with communities and society to successfully make the transition.
   - Transition can have wider environmental impacts and wider impacts on livelihoods. For a just transition considering other industries is key and their interactions with the development of marine energy, specifically fisheries O&G, tourism.

2. **How to define 'coastal and fishing 'Community' in planning for effective marine energy development**

Would there be a difference in how this question is viewed across the UK? Is it country specific?

- One response: same across whole of UK
- Another: might be different for urban v. rural areas

How do we define who is part of a fishing community?

Potential defining characteristics:

- Scale
- Recreational/commercial
- National/international
- Per port/harbour based on data

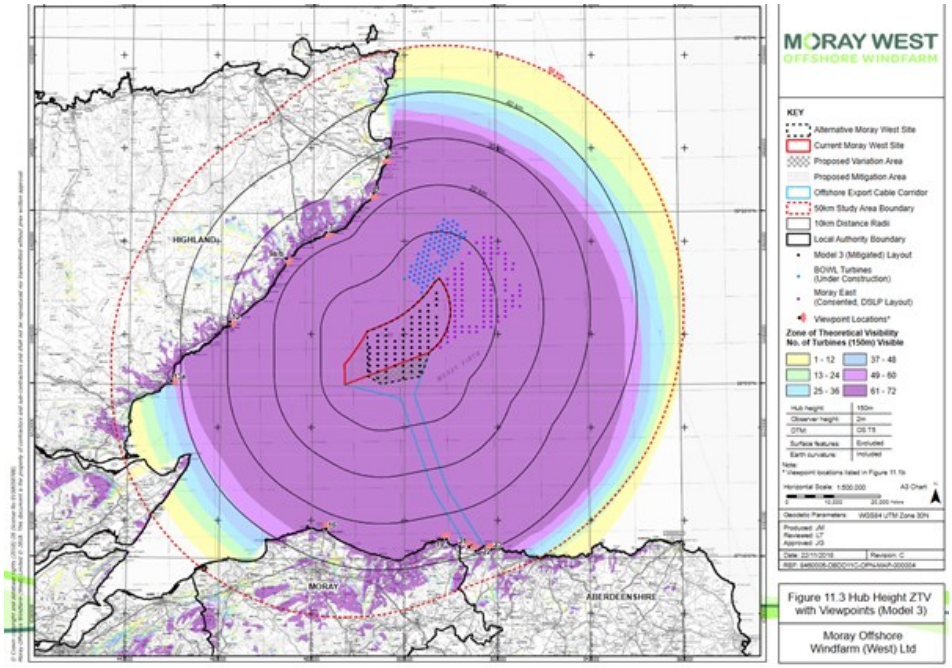
Who are you prioritising? E.g. big-scale fisheries v. small-scale local fisheries?

- Who should be consulted?
- Whose views are deemed to be more important?
- Different actors are involved at different stages in planning, for example individual fishers may be reached at public consultation events while fisheries representatives may be contacted at earlier stages
- Recreational fishing should also be considered as it also generates income and has social benefits

How far inland is coastal?

- Define degrees of 'coastalness', find out by engaging with 'potentially coastal' residents
- Role of planning in reducing visual impacts for coastal communities – line of sight to the sea, visual impact can be avoided by moving a development even just 500 m out of the line of sight of coastal residents

  Example of such an analysis:



Source: http://marine.gov.scot/datafiles/lot/Moray_West/Addendum/Volume%203%20-%20SLVIA%20Figures%20and%20Wirelines.pdf

- Definition coastal communities – discussion about objections to a development from respondents that had 'no connection' to the sea.

- The value of an area could be characterized using ecosystem services – to encompass economic value as well as the value of an area for walking your dog for example.
- The value of an area can also be linked to the places where products get exported to, for example linking the value of an area for lobster fishing to the export market for the caught lobsters in Spain.
- A distinction that can also be made is onshore and offshore sections of communities, for example the catching of fish happens offshore and its processing onshore.

3. <u>How to really link large scale marine renewable energy development and long term marine management ?</u>

- From an Orkney perspective, most of the large-scale proposals are just outside or may just come into the 12 nm boundary so main impact is just outside of waters but depended on how they get services or logistics, it may considered a significant influence on Orkney and/or link to mainland. Could be a significant economic or ecological impact or not. Grid connections are also important links to land.
- One of the biggest ways to link a large project and long term marine management? Linking MRE development to Marine management- is it about the management or the marine resource? The marine environment or marine ecosystem.
- Question seems a bit confusing. Is it more about e.g. SMEEF – encouraging investment from industry to contribute to restoration – is that a valid link
- Is it about long term management, we have a taste of marine management and other activities – how do we do it large scale and long term?
- Bulk of largescale developments will be outside of the jurisdiction. Would be up to Marine Scotland to determine. It would be up the developer and up to Marine Scotland to figure out how data could be collected.
- Would a Environmental Management Plan be presented by the developer? Yes, that would be done but over what time-frame? And what requirements put in the licence?
- Stronger link associated with leasing – it is a condition that they provide their monitoring information to feed into ScotMer and better learning from MRE sites not just monitoring for the sake of monitoring – improved approach to ensure learning from Scotland.
- What is the role of the stakeholders? To get the license, the stakeholders input needs to be taken into considerations. E.g. developer looking to modify or changing something – they can engage with the local . . . lost connection
- Who is going to make sure that the ecosystem approach is being delivered? It will be down to Marine Scotland to determine the licensing conditions. MS LOT would need to provide detail – can feed back on current outlook? Do they have a future outlook specifically on ensuring an ecosystem approach?

4. <u>Is it still just too darn complicated? How to deliver marine renewable energy through effective use of science and policy, not just a box ticking exercise?</u>

- Can we remove any of the complication? Or do we just need to make it work?
- It is really complicated but we can't wait for the perfect scientific understanding? We need to develop this industry/economy. Use a least risk-based approach. On land, we had a similar debate, particularly around having a national approach. Very little guidance was given to local authorities which was not fair and shouldn't be repeated for marine.
- We cannot keep licencing one by one, assuming animals do not move. We must consider licencing multiple sites in ecological sensitive regions. We shouldn't assume the environment will be damaged and head straight to the compensation route.
- ScotMer and ORJIP have identified gaps which results in targeted research. Contrast and compare approach is good for fast learning. Need to be smarter about targeting the question and getting this research completed quickly. Funding sources are now coming along to answer these questions.

- Need a balanced approach. A global challenge that needs to be addressed locally. Nobody goes out to make mistakes, and how we respond to them and adopt and change is key as new knowledge comes available. Decisions need to be flexible.
- The complexity of the issue is a paradox. Want to mitigate climate change and ensure high level environmental protection, but the same procedures also limit development. Less of a paradox if the damage is reversible.
- Implementing perceived risk needs flexibility too as risk can change over time too. Continual monitoring is needed, but funding is a challenge!
- Compensatory measures shouldn't be left to the developers – perhaps gov't should define these so they can take into account the wider implications.
- EIA is interdisciplinary and hard to get funding for this decision making. If research could ask the practitioners to develop guidance towards an ecosystem approach and help develop some of the needed tools.
- Can we think within the parameters of environmental knowledge as the Rochdale envelope, not just the smaller extent of the development.

5. <u>What should marine governance look like by 2050?</u>

- We need to get it right because we don't get another chance but a huge risk achieving targets (e.g. for offshore wind, net-zero) at the potential expense of the environment (disturbance to habitats and species).
- Agreement that Marine Spatial Planning exercises should take into account policy requirements.
- From experience, seems to be a different between English and Scottish approaches to marine governance. For Marine governance to work it needs strong strategic direction. Scotland better than England at this because Scottish objectives / targets are clear and directed. E.g. this is what we need to do to meet our targets – rather than trying to appease all.
- E.g. wind power will displace fishing. Someone needs to make a decision – who is doing that?
- Fishing displacement is taken care of / accounted for in sectoral planning.
- <u>Big question – who or what is the sea for and who decides?</u> Question of ownership and responsibility. This decision affects us all but we are so far removed from what happens at sea.
- Offshore wind, a new sector and we can decide how to best develop it from the start – i.e. no legacy issues. However, it's an increasingly congested space.
- Suitability of a site is often weighed up against cost. Near-shore sites are cheaper than further offshore.
- MPAs – are they useful? Depends on the species being protected. Zoning approach better?
- Maybe we need to think about e.g. offshore wind farms as MPA - creation of new habitat types, fish overspill, protection of seabed from bottom towed fisheries. But what about noise? What effects to the ecosystem does new habitat create?
- Coordinated landfall of cables from all the offshore power!
- Re-purposing offshore structures to avoid disturbing the seabed / habitats created by decommissioning. Is this possible? Also, licensing for offshore structures includes a decommissioning aspect – ensure that these policies/licenses are 'living' to account for changes in thinking / based on evidence. E.g. how do you / should you decommission a structure which now has Annex I habitat growing on it?

Summary points:

- Marine governance must have a clear strategic approach and bold decisions must be taken.
- Marine planning is relatively new – started 20 years ago. Terrestrial planning still learning ~80 years old. Lessons must be shared.

3.14 Poll 3: Chose the top 3 you would prioritise to achieve 'success' for our seas by 2050

Results in priority order:

1. Biodiversity
2. SDGs
3. Climate change
4. Marine energy
5. Blue Growth
6. Natural capital solutions

3.15 Question answered by three of the break out groups in either first or second session and relates to poll question number 3.

By 2050 What is 'success' for our seas: economic, communities, environment?

Group A

Will depend across different sections of society. Community perspective: employment, livelihood, stopping climate change. Participatory is key. Scale is difficult.

Ben Wilson and Laurence Tilliet

- Need to develop the use of marine plans to have a vision of what we want our seas to look like in 2050
- Public participation is one of priorities: need to understand what local communities need, what the public wants to value
    - CCS can play a role, but not without communities' approval
    - Need a combination of bottom-up and top-down methods
- 2050 is not a relevant deadline. Citizens and decisions-makers are not able to understand this time interval: too far away, may encourage procrastination. Need an action plan for the next 10-20 years; 2030 may be a more relevant deadline. Need to think in our lifetime to trigger meaningful actions
- Need to enable some marine areas to recover: to cope with climate change, preserve biodiversity. Protecting marine areas enables us to preserve ecosystem services
    - Ecosystem services are controversial, a participant mentioned understanding their utility, but declared not being at ease with putting an economic value on ecosystems
- Need innovation & more research to increase co-location in marine areas

Group B

Different interpretations of success:

- Facilitate coexistence in the limited space available
- Facilitate recovery
- Not making things worse

Other discussion points:

- The risk of sustainability being a 'buzz word'
- Becoming carbon neutral should not come at any cost, it should be a balancing act
- The need for integration of social science and economics with natural sciences

Having renewable energy in practice but the impacts minimized:

- from tidal energy perspective . . . poor connection
- taking the emphasis off the developer for monitoring, focus on specific questions and reduce the financial burden
- are you giving more risk to the public
- may have a better impact on the climate change, lots of talk and hot topic – maybe we will have a better handle on the impact and be more informed
- any social success input – idea of just transition, sustainable future and balancing trade-offs, if we do that in a just way then we will be getting somewhere.

Group C

- Jobs for younger generation, clean energy driving our system, populations doing well and sustainable managed
- Maintaining a high level of human wellbeing

3.16 IDEAS BOX 5: Lucy Greenhill links the Passport workshop themes with other workshops with a similar focus

The recent Scottish Universities Insights Initiative (SUII) funded Project "Driving the transition to a resilient and inclusive future: the role of the ocean" (January – June 2021) focussed on exploring the interactions between the 'marine' and different policy areas, including the ocean / climate nexus, and sustainable seafood, and the role of science in understanding these interactions, supporting synergies and mitigating trade-offs. Through two workshops, we engaged the scientific and policy communities in order to inform policy that is coherent in addressing cross-cutting objectives such as the Just Transition, the Circular Economy and the Green Recovery, in the context of the UN SDGs. This supports the approach being taken by Marine Scotland in their development of the Blue Economy Action Plan (BEAP) which seeks to enable progress towards multiple objectives, social and ecological, guided by the National Performance Framework.

The report of event 1 - "*Driving the transition to a resilient and inclusive future: the role of the ocean and policy coherence"* - is online here and the report of event 2 which was held on 15th June on "*Mobilising the science community in progressing towards a sustainable and inclusive ocean economy*" is being prepared and will be published online here. These reports summarise the insights and recommendations developed through the workshops, and example topics which relate to the discussions at the MASTS MPG Forum's Passport to the Oceans of the Future event include:

- The interlinkages between the ocean and climate in Scotland, including nature-based solutions, blue carbon and the Just Transition
- The need for science to support an ecosystem-based and integrated understanding, combining social and natural sciences
- The essential role of social science to understand implications for society, and particularly relevant to the Just Transition which centres on the implications of the energy transition for society at different scales.
- The importance of natural capital in providing a common metric for evaluating benefits and risks across different sectors and policy topics
- The role of science in providing data and evidence for informing indicators and measuring progress over time, informing an adaptive approach to the Blue Economy
- Innovation in governance is needed, including community-based models, to support local ownership and distribution of benefits including in a Just Transition, and the relevance of island-scale governance and empowerment in this regard.
- Insights into the role of marine planning, both the NMP and RMP in supporting understanding and balancing competing objectives at appropriate scale
- Exploration of the challenges at the science / policy interface and how these might be addressed (including training for both scientists and policy makers, secondments at ECR and senior scientist level, recognising the role of boundary organisations and knowledge brokers, including groups such as MASTS)
- The value of events and interactive workshops in supporting dialogue between different actors across the scientific and policy communities, including different types of scientists and representatives from across government departments as well as other stakeholders, in exploring the complex challenges of an inclusive and sustainable Blue Economy.

3.17 Chair's final thoughts

The workshop themes sparked real conversation about a relevant topic and its implications, albeit online. The format and style aimed to provide a 'live' conference feel and make connections across the disciplines and geographical locations.

Collectively the workshop and its outputs contributed to the wider debate and opportunities to find solutions to the delivery of marine renewable energy in processes that really do connect the latest science with policy formulation and implementation.

4.0 Outputs

There are 3 main outputs from the workshop.

1. All registrations were sent a link to the presentation recordings in June which was available for 2 weeks.
2. This report is a permanent record of the workshop available on the MASTS Planning and Governance website.
3. The presentations, breakout sessions and questions provide a focus and frame for the next MASTS Marine Planning and Governance workshop (2021)

5.0 Useful references

https://www.gov.scot/publications/transition-commission-national-mission-fairer-greener-scotland/pages/3/

Typologies of coastal localities in Scotland (149 Scottish coastal towns using the 2001/11 census with populations between 1000 and 50 000). P.Duffy/T.Stojanovic ESRC, Scot Gov. https://marine.gov.scot/information/scottish-coastal-localities-typology-2016

Weir, S. and Kerr, S. (2020) Enclosing the right to fish: A Q-study into fishers' attitudes to rights in Scottish fisheries. *Ocean and Coastal Management* 187,105116

Weir S and Kerr S (2019) Property, power and planning: Attitudes to spatial enclosure in Scottish seas. *Marine Policy*, Volume 108, October 2019, 103633

Appendix A: Break out sessions: questions, facilitators and scribes

Breakout Session 1

1. **Can we square the triangle of net zero, marine energy and communities?**
   Facilitator: Eddy Wifa, University of Aberdeen. Scribe: Finlay Kerr, Marine Scotland.

2. **How dynamic is MSP as a governance system?**
   Facilitator: Sinead Sheridan, Nature Scot. Scribe: Corallie Hunt, University of St Andrews.

3. **Rights and industrialisation of the seas v climate emergency and SDGs ?**
   Facilitator: Millicent Ele, University of Aberdeen. Scribe: James Chapman, University of Aberdeen.

4. **What support for coexistence should be provided by science?**
   Facilitator: Ben Wilson, SAMS. Scribe: Laurence Teillet, University of Aberdeen.

5. **Is the ecosystem approach compatible with high growth in marine energy?**
   Facilitator: Beth Scott, University of Aberdeen. Scribe: Emma Defew, MASTS.

6. **What questions do marine policy pose for science ?**
   Facilitator: Vincent Onyango, University of Dundee. Scribe: Zoe Hutchison, Marine Scotland and University of St Andrews.

7. **How can science contribute to a holistic approach to marine governance**
   Facilitator: Rachel Shucksmith, NAFC Marine Centre. Scribe: Inne Withouck, NAFC Marine Centre.

Breakout Session 2

1. **What does a 'Just Transition' mean, and how does the Just Transition framing change / affect the development of marine energy, including its' governance at national level?**
   Facilitator: Eddy Wifa, University of Aberdeen. Scribe: Finlay Kerr, Marine Scotland.

2. **How to define 'coastal and fishing 'Community' in planning for effective marine energy development**
   Facilitator: Rachel Shucksmith, NAFC Marine Centre. Scribe: Inne Withouck, NAFC Marine Centre.

3. **How to really link large scale marine renewable energy development and long term marine management?**
   Facilitator: Vincent Onyango, University of Dundee. Scribe: Zoe Hutchison, Marine Scotland and University of St Andrews.

4. **Is it still just too darn complicated? How to deliver marine renewable energy through effective use of science and policy, not just a box ticking exercise?**
   Facilitator: Tim Stojanovic, University of St Andrews. Scribe: Emma Defew, MASTS.

5. **What should marine governance look like by 2050?**
   Facilitator: Sinead Sheridan, Nature Scot. Scribe: Corallie Hunt, University of St Andrews.

All groups in breakout session 1 and 2 (if they had time)

By 2050 What is 'success' for our seas: economic, communities, environment?

Appendix B: Abbreviations

COP 26:	United Nations Conference of the Parties on Climate Change, November 2021
ECR:	Early Career Researcher
EIMR:	Environmental Interactions of Marine Renewables
ENGO:	Environmental Non-Governmental Organisation
EEZ:	Exclusive Economic Zone
ICZM:	Integrated Coastal Zone Management
MASTS:	Marine Alliance for Science and Technology Scotland
MRE:	Marine renewable energy
OFW:	Offshore floating wind
RSPB:	Royal Society for the Protection of Birds
SDG:	Sustainable Development Goals
UHI:	University of the Highlands and Islands