From:
Sent:
To:
Subject:
11 September 2018 14:38
FW: MBL Reports

10

## From:

Sent: 11 June 2018 12:45
To:
Cc: 4 ?
Subject: RE: MBL Reports

I am sure that will be fine but can you letmman directly if Walter confirms he is attending.

From: $\square$
Sent: 11 June 2018 12:42
To:tmum
Subject: RE: MBL Reports
 in Aberdeen
I will confirm once has confirmed he is able to attend
Kindest regards
ander

## 

Sent: 11 June 2018 10:16

Subject: Fw: MBL Reports
Hentory
Can you let me know who is attending please. And note the proposed time.
Sent from my BlackBerry 10 smartphone.
From:
Sent: Monday, 11 June 2018 09:35
To:


Can we arrange for 1400 ? Also, will MBL's consultants be there to present the scoping report?

Thanks

## 

Sent: 08 June 2018 13:10

Senior Policy Officer / Marine Planning \& Strategy / Marine Scotland / The Scottish Government

www.gov.scot/Topics/marine marinescotland MAPS NMIPi http://maps.marine.gov.scot

## From: Mmmennomen

Sent: 08 June 2018 12:44

Subject: FW: MBL Reports

Please the request from MBL. They confirm next Tuesday suits them
4n,
Sent from my BlackBerry 10 smartphone.


## Good afternoon

We are all happy to do the $12^{\text {th }}$ in Aberdeen
Could we ask for the sake of flights and trains can we do any time between 11:30 and 17:00hrs
num is flying from Southampton we will come from Ayrshire
Kindest regards


MARMME WPGLYMEFE


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From:
Sent: 07 June 2018 10:47
To:
Subject: RE: MBL Reports

MS LOT are arranging a meeting for next Tuesday (12 th) in Aberdeen for the initial discussion about the MBL proposal.

I have let Sandy know but am following up with you in case he misses it. Time has not been set yet but this is a heads up to earmark the date.

I will keep you posted when I hear more.

$\mathrm{Tel}+44(\mathrm{O}) \mathrm{H}_{-1}$
$\mathrm{mTel}+44\left(\mathrm{C}_{\mathrm{m}}^{\mathrm{N}} \mathrm{m}\right.$

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Dh'fhaodadh gum bi teachdaireachd sam bith bho Riaghaltas na h-Alba air a chlàradh neo air a sgrüdadh äirson dearbhadh gu bheil an siostam ag obair gu h-èifeachdach neo airson adhbhar laghail eile. Dh'fhaodadh nach eil beachdan anns a' phost-d seo co-ionann ri beachdan Riaghaltas na h-Alba.

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\& by email:
$31^{\text {st }}$ July 2017

## Dear Minnay

Thank you for meeting with me recently in Victoria Quay. I greatly enjoyed speaking to you and your team and hearing about MBL's plans to harvest and bio-refine laminaria hyperborea in Scotland.

Your innovative proposal chimes well with the Scottish Government's top priority of growing the economy and it would help create much needed employment and investment in our rural economy.

I noted that you have already received strong support from Scotland's economic development agencies, Scottish Enterprise and Highlands and Islands Enterprise, and I know these agencies stand ready to provide further assistance as you take your project forward.

I was especially encouraged by your update about potential investment partners and I wish you every success with that. You made clear that as well as contributing to sustainable economic growth in Scotland your project would be compatible with environmental sustainability. I would like to assure you that Marine Scotland is keen to see this sort of initiative proceed and we will do what we can to support the development of a sustainable wild harvesting sector.

We fully recognise the economic potential within our wild seaweed resource and are committed to encouraging the development within Scotland of a sustainable, viable, wild harvesting industry as well as the downstream activities emanating from that including production of marine biopolymers.

This is a priority issue for us and we have recently appointed an experienced manager who will drive the development of the wild seaweed industry in Scotland and support those companies and individuals seeking to operate in this area.

As you know, this work has begun and a major exercise is already underway mapping the locations and quantities of kelp around Scotland, identifying areas of substantial availability, Victoria Quay, Edinburgh EH6 6QQ www.gov.scot

considering in more depth some of the most suitable areas for harvesting and assessing potential yields. This work is specifically designed to help developers understand the requirements of Marine Scotland's wild harvesting Marine Licencing process and, in particular, to help them meet these requirements by providing vital data and assessment of the impact of harvesting in in key kelp areas. The output and guidance from this initiative will be available later this year and will certainly help MBL with its application for a Marine Licence.

Regulators in Scotland are statutorily obliged to contribute to achieving sustainable economic growth where they can. Our Marine Licencing system is rightly thorough but is also fair and transparent and proportionate. Of course, we cannot give an absolute guarantee that a licence will be awarded to any applicant but Marine Scotland does have a proven track record of working closely and supportively with applicants to try and secure positive outcomes, including licences for industry projects. Using this approach, we have already permitted a range of sensitive marine developments right round our coast.

Applicants who propose to harvest sustainably and sensitively, minimising or avoiding any significant environmental impact and recognising the impacts on other marine users and who follow the guidance Marine Scotland will provide, are likely to succeed

In closing, I would like to re-iterate that I felt our meeting was very positive and your proposal was explained in a very knowledgeable and cogent way. I look forward to seeing it develop.

The Cabinet Secretary for the Rural Economy and Connectivity has asked me to invite you to meet with him soon to update him personally on this innovative project. I will arrange for someone to make the necessary arrangements and allocate time in our diaries.



investor mpropian


From:
Sent:
To:
Cc:
Subject:
Attachments:
02 September 2016 11:53
MS and adviser comments on 'discussion draft' - 2 September 2016
ms and adviser comment-seaweedharvest-2-9-16.pdf


Please find a letter containing comments, minutes and draft process (which you have previously seen). The hard copy is in the post.

Kind regards


Sent: 26 August 2016 11:41
To: (MARLAB)
Cc:
Subject: RE: follow up actions from MBL MSLOT meeting

Hi ?
Thanks for the minutes. Any idea when we can see the comments from SEPA, SNH and MSS as per action point one? Thanks,


Sent: 26 August 2016 11:27
To:
Cc:


Subject: RE: follow up actions from MBL MSLOT meeting

Please find minutes attached.

Kind regards

## From: mailto:

Sent: 26 August 2016 10:19

## To: B (MARLAB)

Subject: RE: follow up actions from MBL MSLOT meeting

Any chance of getting the minutes and comments you were going to send?
Thanks very much,


## From:

Thanks for coming up to Aberdeen to meet with the Licensing Team on Tuesday. I think it was helpful to understand the proposal and hopefully for you to understand the licensing process and the needs for information to support applications.

We took minutes and they will be sent on to you when completed, so too the comments received on the Discussion Draft document you sent for comment. This will be sent once the remaining consultees provide some comment, which most have done quickly given the timeframe. When we send this we will give you written advice process on our process.

We discussed some documents and said we'd provide some links.
The draft SEA is attached. This covers the broad range of topics that you should cover for any site specific scope of assessment.
Also attached is a link to a list of other projects. These have gone through a formal EIA process and so will show good examples of the type of report expected to accompany a request for a scoping opinion.
http://www.gov.scot/Topics/marine/Licensing/marine/scoping
The timeline and process map attached was discussed. It is meant for renewables projects but will give the overview of the licensing timeframes.

Also discussed was that, whilst your project did not fall within the prescribed classes, it would be appropriate for some form of pre-app consultation and that this could follow the Pre-application consultation regulations found at http://www.legislation.gov.uk/ssi/2013/286/made and guidance at http://www.gov.scot/Topics/marine/Licensing/marine/guidance/preappconsult

The draft SPAs can be found athttp://www.snh.gov.uk/protecting-scotlands-nature/protected-areas/proposed-marine-spas/ and will need consideration in your proposals.

Could you please remind me of the aspect you wanted from Historic Scotland so we can find out for you?
Hope this helps and l'll get the minutes and consultee responses to you.
Regards


From:
Sent:
To:
Cc:
Subject:
Attachments:


RE: Samples for key investor
Report to CES \& SNH.pdf

## Good morning namand

Please find the compiled report on the dives in Argyll to collect and process Laminaria hyperborea between May 2017 and May 2018.
Hopefully we have given as clear and explanation as required!
Thank you to both organisations for being very understanding and allowing us to collect raw material from Scottish waters to allow us to say that the material would be a typical of West Coast Laminaria hyperborea.

Kindest regards


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Subject: RE: Samples for key investor

## Thanks

Kind regards

## www.crownestatescotland.com

@crownestatescot

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Sent: 30 July 2018 12:26


Subject: RE: Samples for key investor

## Hi

I will bring our records up to date from the dives and share once compiled
We did successfully make samples from each batch and these have produced high quality pharma grade product.
These were independently verified by our formulator and proved to be higher value than the current market leader and bodes well for the Scottish resource.
Kindest regards


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Morning

At our meeting a couple of weeks back you mentioned having successfully obtained the seaweed samples referred to in the correspondence below, if I understood correctly?
If that is indeed the case could you please supply the details agreed below. I'm not sure whether you have already done so but l couldn't find any record so in that event could you please re-send.
Many thanks

Kind regards

## 

Aquaculture Operations Manager

## Crown Estate Scotland (Interim Management)

www.crownestatescotland.com

## @crownestatescot

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## From

Sent: 16 May 2017 16:39


Subject: RE: Samples for key investor

$\mathrm{mTel}+44(\mathrm{C}$

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## Good afternoon

I am of coarse very pleased with your decision and will happily comply with the terms of the sampling process and produce a harvesting report at the end of the sample process.
I will speak to our harvest team and prepare to deploy on the 22 nd or $23^{\text {rd }}$ of May dependant on diving team availability.

Will keep you informed on progress with our success with the sampling and sample preparation to our investor



Further to you mail below and attached request to take seaweed samples for product testing.

Firstly on the 'Licence to Survey' matter. I have to admit I'm not quite sure what you're referring to - it may be a more general sampling consent regime associated with some of our marine renewable energy business proposals, or possibly infrastructure.

It is not something I recognise as applying to Crown Estate Scotland, but happy to check if you can point me to the reference webpage.

On the matter of the sampling request, I have discussed this with at and we agree to your proposal on the following basis;

1. The agreement is for capped volumes of 120 kg on each of four recorded occasions
2. Location of removal to be recorded via GPS as WGS84 co-odinates each time and made available to ourselves and SNH.
3. Weight and no of plants constituting each sampling to be recorded and made similarly available (including whether whole plant removal or just part).
4. Information to be submitted in the form of a harvest report at the end of the sampling exercise.
5. This agreement is made without prejudice to any other requested agreement for any further sampling or other harvesting rights at this or other locations

If you are content to proceed on this basis please confirm by return e-mail copying in Tracey Begg
Kind regards

Aquaculture Operations Manager

Crown Estate Scotland (Interim Management)
Please note that my email has recently changed and is now alex.adrian@crownestatescotland.com

www.crownestatescotland.com
@crownestatescot

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From: [mailto:
Sent: Friday, May 12, 2017 1:22 PM


Cc:
Subject: Samples for key investor

## 

Having spoken to am sending you a request to be allowed to harvest sufficient quantity of seaweed to allow continuance of sampling a potential serious investor.
I look forward to your support on this matter and happy to provide further information

## Kindest regards

MBL
MAFINE BIDBOLYMERS


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To Crown Estates Scotland


Date 06/08/2018

## Re Harvesting of Laminaria hyperborea by Divers for test sample production.

## Dear

This is a report into the harvesting of Laminaria hyperborea from the entrance to Loch Feochan Argyll between May 2017 and May 2018. We would like to thank CES and SNH for permission to do this as it has allowed MBL to provide high quality samples to potential end use customers and to an Investment group based in Germany.

## Summary

After consultation with Crown Estate Scotland and Marine Scotland policy team and SNH, MBL was permitted to harvest Laminaria hyperborea off the West Coast of Scotland on four consecutive occasions from May 2017 to May 2018 to remove enough material to process into Pharma grade ultra-low viscosity product to meet and match a potential large-scale pharma application. The method of harvesting was by diver.

All plants removed were processed within 24 hours of Harvesting
The amount removed from each location is detailed below within the report.
The product made on the four occasions although varied, met and exceeded the test comparator outperforming the existing product in formulations by an outside agency who requested we produce these samples to prove that we had a potential global winning product.

The products produced from the trials was one application of many that MBL is pursuing with customers for its products and that the reason we needed this particular weed was that, following successful small-scale tests over the past 2 years, we were required to make larger scale product from several batches to demonstrate reproducibility. These tests were very successful and have also been shared with MBL's potential investor. As a result, MBL is under intense pressure from its

[^2]potential pharma customers and the investor to accelerate its commercialisation; these customers have their own commercialisation plans for the introduction of their new pharma products into the marketplace and, if MBL cannot meet their timeline, they will have to source the product from the current market leader (MBL's rival) and this opportunity could be lost to MBL (and Scotland).

After the success of the samples supplied to date it is vitally important for MBL to maintain momentum with these and other potential customers. This will require further and larger samples therefore more trial raw material to be collected during Year 0 of MBL's full-scale application currently being progressed at scoping report stage.

## Modus operandi and terms of agreement

The Harvesting of the weed was conducted using approved diving team contracted to Muckairn Mussels who arranged for each of the four dives. Accurate positioning was recorded for all dives and is presented for each site excavated.

Conditional Agreement made with Alex Adrian of CES on $16^{\text {th }}$ May 2017
"On the matter of the sampling request, I have discussed this with and we agree to your proposal on the following basis;

1. The agreement is for capped volumes of 120 kg on each of four recorded occasions
2. Location of removal to be recorded via GPS as WGS84 co-odinites each time and made available to ourselves and SNH.
3. Weight and no of plants constituting each sampling to be recorded and made similarly available (including whether whole plant removal or just part).
4. Information to be submitted in the form of a harvest report at the end of the sampling exercise.
5. This agreement is made without prejudice to any other requested agreement for any further sampling or other harvesting rights at this or other locations"

MBL agreed to the terms and conditions applied and believe they have met the terms with the exception that the weight of weed removed by the divers exceeded the agreed limit due to the difficulty of estimating weight under water when removing bags of weeds and the cumulative figure not known until weed recovered from the sea at the end of the dive session.
The permitted amount was $4 \times 120 \mathrm{~kg} /$ dive $=480 \mathrm{~kg}$.
Actual amount recovered $=538$
Excess to agreed amount 12\%
No weed was wasted because of these trials with all the biomass being processed into product for test.

[^3]Results of Trials including dates of dives, location of dive, weight of weed and number of plants removed from dive location either as whole or part plants.

The dive sites were accessed from the Pier at Ardoran Marine using a boat belonging to the dive team


Location of Dive sites

Site 1


The sites correspond to the coordinates provided by the dive team

[^4]
## Dive 1: -

## Date May 22 ${ }^{\text {nd }}, 2017$

## Co-ordinates N 56.21.203 W 5.31.990 depth 5 m

Weight of Plants Removed 142 kg i of which 18 specimen plants weighting 27 kg were complete (Frond / stem / Holdfast) with 115 kg of Stem only (no frond or holdfast) representing 193 plants

The total number of plants removed by this dive was

1. 9 plants $>5$ years Full Plant wgt of $1.96 \mathrm{~kg} /$ plant
2. 9 plants $<5$ years Full Plant wgt of $1.13 \mathrm{~kg} /$ plant
3. 193 plants stem only average wgt of $.597 \mathrm{~kg} /$ stem rod
4. Total plant removed 211 plants

The data from the full plants allowed us to estimate the \% of each fraction
Plants greater than 5 years 39\% Stem 43\% Frond 18\% Holdfast Plants less than 5 years 29\% Stem 51\% Frond 20\% Holdfast.

Comment: - There is a considerable difference with frond stem ratio in plants <5years neither met the control


[^5][^6]
## Dive No 2

Date $30^{\text {th }}$ July 2017

## Co-ordinates N 56.21.341 W 5.32. 171

Weight of plants removed 136 kg of which 20 complete specimen plants weighed 39.8 kg . 96.2 kg of 'Stem only' representing 134 plants with average wgt of $890 \mathrm{gms} /$ stem

Total plants removed by the dive was 154 plants

1. 10 plants greater than 5 years old weighed 22.89 kg with stem wgt of 939 gms / plant
2. 10 plants lesser than 5 years old weighed 16.96 kk with stem wgt of $749 \mathrm{gms} /$ plant
3. 134 plants stem only with 844 gms / plant
4. Total plant removal 154 plants

The data from the complete plants allowed us to assess the \% of each fraction
Plants less than 5 years $41 \%$ Stem $15 \%$ holdfast $45 \%$ Frond average wgt of plant 1.696 kg Plants greater than 5 years $44 \%$ Stem $16 \%$ Holdfast $42 \%$ Frond average wgt of plant 2.289 kg

Comment:-
The divers estimate of plant age has improved since the previous dive.
There was less of a difference in fraction between the $>5$ and the $<5$ years and the quality of the weed was good for all weed collected.


## Dive No 3

Date $7^{\text {th }}$ May 2018

## Co-ordinates 2 location N 56.21.215 W5.31.979 and N56.20.960 W5.31.985

Weight of plants removed 120 kg of which 18 complete specimen plants which weighted 25.9 kg considerable less than trial 2 (July 2017) The remaining wgt was 94.1 kg made up of 239 plants. The total number of plants removed 257 plants

1. 9 plants $4-5$ years old weighed at 13.17 kg with stem weight of $606 \mathrm{gms} /$ plant
2. 9 plants less than 4 years weighed at 12.73 kg with stem weight of $181 \mathrm{gms} /$ plant
3. 239 plants stem only 393 gms per plant
4. Total plant removal 257 plants

The plants that were $4-5$ years old $41 \%$ stem $45 \%$ Frond and $16 \%$ HF The plants that were less than 4 years old $15 \%$ stem $76 \%$ Frond and $12 \%$ Holdfast

Comment. The dive team used was different to previous trials and were not as selective as previous team and plants were smaller in size. Dive 3 Recovery Fraction
10 specimen plants


## Dive No 4

## Date $28^{\text {th }}$ May 2018

## Co-ordinates N 56.21.098 W 5.32.632

Weight of plants removed 140 kg of which 11 complete plants weight at 12.65 kg . average (stem wgt 617gms/plant)
Remaining 127 kg made up of 206 Stem only plants with an average weight per stem of 617 gms The total number of plants removed was 217 plants

The sample plants were $4-5$ years old $54 \%$ Stem $34 \%$ Frond and $13 \%$ Holdfast which is the best fraction split from all 4 trials.


## Learnings and Conclusions

The average size of the plants that were greater than 5 years was 1.72 kg for all 4 trials this was $33 \%$ heavier than those collected plants that were less than 5 years.

The epiphytic growth was markedly greater on plants greater than 5 years and accounted for $2 \%$ of the wet weight of the stem.

The number of plants removed from the total trial was 839 plants which weighted at $534 \mathrm{~kg} 12 \%$ higher than agreed due the difficulty of weighing the plants underwater and the collection of multiple bags recovered to the vessel.

Using Divers to recover product meant that we had a less precise cut-off of plant age

[^7]A mechanical rake is more discriminatory and offers a better cut-off point for harvesting.
Finally, the dives provided the much-needed material to produce the test samples and we have successfully used the biomass collected to produce high grade material tested for a pharma-based product which is our ultimate target market.

We have learned that diver supplied samples produce a poorer factional split than the plants collected from more exposed conditions using a mechanical harvest technique which we hope will be resolved shortly when MBL can legally harvest Laminaria from Scottish waters.

I would like to thank all involved in this process and hopefully it is a stepping stone to future sustainable use of this plentiful biomass.

Kindest regards


[^8]
## From:

Sent:
To:
Subject:
11 September 2018 14:26

FW: Marine Scotland Support for Wild Seaweed Harvesting

## From: <br> Sent: 09 July 2017 22:59 <br> To: 4

Subject: Re: Marine Scotland Support for Wild Seaweed Harvesting

Thanks,

Sent from my BlackBerry 10 smartphone.

## From:

Sent: Sunday, 9 July 2017 20:03
TO:
Reply To:
Subject: RE: Marine Scotland Support for Wild Seaweed Harvesting

## Thanks

Just back from 3 email free days and saw your message now; I'm out tomorrow morning so will send you something afterwards.

Best regards


From
Sent: 07 July 2017 19:35
To:
Subject: RE: Marine Scotland Support for Wild Seaweed Harvesting

I forwarded this to the Director's team.
As this is his first meeting with MBL could you please let me have a brief biographical note setting out who everyone is and their connection with the industry and MBL, please?

Just a line or two for each person would be enough.
Thanks

From:
Sent: 05 July 2017 08:03
To:
Subject: RE: Marine Scotland Support for Wild Seaweed Harvesting


I suggest we do a quick presentation on MBL to set the scene for the new director then we can discuss what needs to be done to make seaweed harvesting in Scotland a reality.

I'm very conscious of time delays in our diligence process so it would be very helpful if the letter could be produced in the meantime as it will be critical to allowing us to conclude the investment based on Scottish sourcing.



Sent: 27 June 2017 13:22


Subject: Marine Scotland Support for Wild Seaweed Harvesting

I refer to your e-mail of 1 June which advised us about a possible European investment in Marine Biopolymers Ltd and requested a letter of support from Marine Scotland to help secure that investment.

In our subsequent discussions and correspondence I explained we were having internal discussions at a senior level to consider your request. We had a discussion last week at which him to find out more about the recent developments at MBL and to explain first hand our commitment to, and support for, the development of a wild seaweed harvesting industry in Scotland.

I have been asked to invite you and MBL representatives to meet with him on 12 July at Victoria Quay at 13:30-15:00. If you think it would be helpful, we would be happy to meet with your investors too if they would like to attend.

I would be grateful if you could let me know who will be in your delegation so the Director's team can make the necessary security pass arrangements.


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Dh'fhaodadh gum bi teachdaireachd sam bith bho Riaghaltas na h-Alba air a chlàradh neo air a sgrùdadh airson dearbhadh gu bheil an siostam ag obair gu h-èifeachdach neo airson adhbhar laghail eile. Dh'fhaodadh nach eil beachdan anns a' phost-d seo co-ionann ri beachdan Riaghaltas na h-Alba.

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Meeting with Marine Biopolymers Ltd (MBL)
12 July 2017 VQ
Marine Scotland

gave a brief update of recent work designed to help the development of wild harvesting generally, by means of the kelp mapping project which is now underway, and our engagement with MBL.
was then invited to explain MBL's project. He provided a detailed and clear picture of the previous kelp industry in Scotland and the reasons for its demise and described how MBL proposed to re-introduce this industry based on highly innovative new technology and chemistry. The key points were as follows:

Background and process

- MBL received a SMART award from Scottish Government/ SE. This is very prestigious, indicating that the MBL process is so innovative it is a world first.
- MBL received further assistance to acquire premises and pilot plant in Ayr
- Originally planned integrated site near Oban but moved to hub and spoke approach involving local harvesting and initial processing to separate the alginate rich parts of the kelp making it stable and transportable
- The part processed material is then moved to a bio-refinery for finishing the product, high quality algenate and cellulose
- Keip will be gathered by Norwegian style "combs" dragged behind a vessel 0.5 metres above the sea bed so as to avoid younger kelp growth. It will be harvested in a similar way to Norway but MBL will not clear whole areas at a time. Instead they will harvest 2 metre strips, allowing plenty of fallow kelp for shelter and to support any flora and fauna in the kelp beds.
- Norway have been harvesting kelp for some 60 years and are now taking 180,000 tonnes. They are considering expanding the harvest
- MBL will need approximately 3,500 tonnes of wet seaweed in year one, rising to 50,000 tonnes in year 5 and from then on.
- A second vessel will then drag the harvested kelp to the local "spoke" treatment plant where it will be cleaned and stripped of its bark.
- The bark goes to animal feed and the stipes/stems are transported to the biorefinery. There they are chemically treated to separate alginate and cellulose.
- Deriving cellulose is the really innovative pert of the process as no formaldehyde is required in MBL's process. Both products are highly
valuable, with marine derived cellulose being worth more than that derived from wood.
- Alginate is used in pharmaceuticals (like Gaviscon) and for making dental impressions. It also has many uses in the food industry.
- From 3 initial products: bark, alginate and cellulose, MBL will move to 5 products over the next few years.
- Three very large pharmaceutical companies are interested in the MBL products but they need new plant to be able to produce the 100 tonnes of high quality alginate required for testing.

Potential Investment

- It has been tricky trying to source investment because the company is too big for early stage funders and those specialising in later stage can be reluctant to fund the building of new plant and premises.
- However there is now a very suitable potential investor. A European company that makes fibres using biopolymers. This investor offers MBL a route to market and also proposes to fund the plant and premises to maintain the whole project in Scotland.
- MBL are looking at sites in Irvine, an established chemicals centre, for the hub and in Crinan and Mallaig for the first spoke.
- MBL expect that it will take roughly a year to move from securing the investment this summer and building the premises and plant required to beginning to harvest wild kelp.
- The investors have completed the commercial element of due diligence and are currently looking at the legal elements.
- Investors are looking for assurances that MBL will have a licence to harvest Scottish kelp. MBL asked if MS could provide a letter of support. MBL were aware we could not give a cast iron guarantee but asked for a strong letter of support as they feel it will help to provide assurance to the investors.


## The Marine Licencing Process

- Following a meeting last August with MS-LOT, MBL were advised of the detailed requirement they would need to meet to support an application for a Marine Licence. They feel the requirements being placed on them are overbearing.
- This includes the requirement to have a separate licence for each harvest area, even though they are quite close together.
- MBL recognised that many of the requirements would be covered by the mapping and impact study we are now conducting but they still felt the requirements were too onerous given their proposed harvest was 50,000 tonnes out of a possible biomass of 10 million tonnes.

Conclusion
wound up the meeting by thanking the MBL delegation for a very helpful and interesting discussion. He reiterated his view that this was an exciting project
likely to help Scotland's economy on a variety of levels. He emphasised that Marine Scotland wants to encourage innovative projects such as this where it can be established that harvesting can be done sustainably and sensitively, minimising or avoiding potential environmental impact and recognising the impacts on other marine users. He also made clear that licencing requirements were intended to be proportionate and agreed to discuss this case with MS-LOT to understand better what their concerns were.

It was also agreed that Marine Scotland would consider a letter of support for MBL to help provide assurance for investors about our commitment to developing a wild harvesting industry in Scotland.
lalso agreed to visit the MBL. headquarters in Ayr to see first-hand how the harvesting and refining process works.

# Determination of MBL's Required Licence Area and Licensing Approach 


#### Abstract

This note has been prepared by ABPmer on behalf of MBL to inform discussions with MS-LOT at a meeting in June 2018. It sets out the approach adopted to the identification of the size of the marine licence area required to provide the sustainable wild harvesting of 30,000 tonnes wet weight p.a. of kelp Laminaria hypoborea. It also considers the most suitable approach to licensing this area.


## Determination of Required Marine Licence Area


#### Abstract

MBL has considered requirements both for a preferred option and for an alternative option. The development of these options has taken account of information on the distribution and abundance of L. hypoborea and key harvesting constraints. The preferred option is based on a low intensity harvesting regime that seeks to avoid causing significant environmental effects. The alternative option is based on a more intensive harvesting regime based on existing practices in Norway. This option would require a smaller licence area but with a slightly greater risk of causing significant environmental effects


## Preferred Marine Licence Area

Burrows \& Allen (2018) created modelled data layers for the distribution and density ( $\mathrm{kg} / \mathrm{m}^{2}$ ) of $L$. hypoborea around the Scottish coast. This included a digital data layer 'Biomass Scale 2 modified' which predicts the density of $L$. hypoborea in a series of $200 \mathrm{~m} \times 200 \mathrm{~m}$ grid cells based on model outputs and some validation data from surveys. The layer predicts densities ranging from 0 to around $15 \mathrm{~km} / \mathrm{m}^{2}$ wet weight. At higher predicted kelp densities, there is greater certainty of the presence of kelp than at lower predicted densities. Overall, the model is considered to underestimate kelp densities where it is present, particularly at higher densities - field observations indicate that densities in dense kelp beds are typically at least $10 \mathrm{~kg} / \mathrm{m}^{2}$ and up to $30 \mathrm{~kg} / \mathrm{m}^{2}$. In the absence of comprehensive survey data for the west coast of Scotland, the Burrows \& Allen (2018) model output layer 'Biomass Scale 2 modified' has been used as a basis for estimating the size of the licence area required to support a low intensity harvesting regime, based on the following assumptions:

- Harvesting efficiency of harvested areas is $50 \%$ (based on observed range of $40-70 \%$ in Norway);
- Harvesting only occurs over a maximum of $25 \%$ of a harvesting block in a calendar year; and
- Only 1 out of 5 harvesting blocks within a harvesting area is harvested in any calendar year.

On this basis, in order to achieve an annual harvest of 30,000 tonnes wet weight of $L$. hypoborea, the licence area would need to encompass a standing biomass of 1.2 million tonnes wet weight ( $30,000 \mathrm{tx}$ 2 (for harvesting efficiency) $\times 4$ (for proportion of block harvested) $\times 5$ (for blocks harvested p.a.)). The approximate area of the west coast of Scotland supporting this resource has been calculated based on the predicted densities of kelp within 'Biomass Scale 2 modified' model cells. For example, a model cell with a predicted kelp density of $5 \mathrm{~kg} / \mathrm{m}^{2}$ would contain a resource of $200,000 \mathrm{~kg}$ (or 200 tonnes) of kelp ( $200 \mathrm{~m} \times 200 \mathrm{~m} \times 5 \mathrm{~kg} / \mathrm{m}^{2}$ ). Given that harvesting of kelp at low density would not be worthwhile, all model cells with densities less than $5 \mathrm{~kg} / \mathrm{m}^{2}$ have been excluded from the analysis. Small areas of
resource (aggregations of $<5$ model cells with predicted densities of $5 \mathrm{~kg} / \mathrm{m}^{2}$ or more) have also been excluded from the analysis on the basis that they might contain insufficient resource to sustainably extract a 100 t load. Figure 1 shows the clusters of kelp resource meeting these criteria on the west coast of Scotland.


Figure 1. Clusters of Burrows \& Allen (2018) model grid cells meeting selection criteria on west coast of Scotland

The analysis indicated that within 150 km of Mallaig there were around 23,500 model grid cells meeting the criteria (clusters $>5$ cells with biomass $>5 \mathrm{~kg} / \mathrm{m}^{2}$ ) with an estimated standing biomass of 7 million tonnes

MBL recognises that there will be a number of locations where it may not be prudent to harvest kelp sustainably. It has therefore undertaken a high level constraints analysis to identify constraints that might preclude harvesting over significant areas of resource and thus might increase the area of kelp resources over which a licence might be required.

The main constraints considered comprised:

- Special Areas of Conservation (SAC) and Nature Conservation Marine Protected Areas (NCMPA) designated for the protection of kelp features
- Coastal Priority Marine Features (PMFs) ${ }^{1}$ :
- Blue mussel beds (subtidal only)
- Fan mussel aggregations Atrina fragilis
- Flame shell beds
- Horse mussel beds
- Maerl beds
- Maerl or coarse shell gravel with burrowing sea cucumbers
- Native oysters Ostrea edulis
- Northern sea fan and sponge communities
- Seagrass beds
- Serpulid aggregations

Maps of these constraints are provided in Figure 2.
Where model grid cells overlapped with these features they were excluded
Applying these constraints to the exploitable resource, resulted in a potentially available resource within 18,500 model grid cells containing an estimated standing biomass of 5.4 million tonnes, located within 342 clusters (Figure 3).

The constraints analysis also considered the presence of military firing ranges and danger areas. The only such area within the area of interest is between Raasay and Applecross (Danger Area - D710). Excluding this area would only have a very marginal impact on the available resource and has therefore been ignored for the purposes of defining a marine licence area.

[^9]

Figure 2. Map of (a) SACs and NC MPAs containing kelp features and (b) key PMFs within marine licence search area.


Figure 3. Available $L$. hypoborea resource on west coast of Scotland (clusters of 5 model

Based on this information, MBL considers it an appropriate marine licence application area that is expected to contain sufficient resource to meet its requirements. This is shown in Figure 4 and Table 1. For ease of definition, the licence area follows the MHWM of the coastline and a minimum number of straight lines linking the mainland and islands.

This area is estimated to include an available resource of around 2.5 million tonnes of $L$. hypoborea within 8,900 model grid cells, located within 204 clusters.


Figure 4.

Table 1. Co-ordinates for preferred marine licence area

|  | Co-ordinates |
| :---: | :---: |
| Lochinver to Vertex A | $58.155219-5.309781$ $58.178882-6.327791$ |
| Vertex A to Arnish Point | $58.178882-6.327791$ $58.191993-6.370677$ |
| Arnish Point to Rodel | Following Mean High Water Mark |
| Rodel to Crogary na Hoe | $\begin{array}{r} \hline 57.727679-6.967143 \\ 57.640283-7.063156 \\ \hline \end{array}$ |
| Crogary na Hoe to Beinn Sgàpar | Following Mean High Water Mark |
| Beinn Sgàpar to Loch nam Madadh | $57.607876-7.100151$ $57.593533-7.101143$ |
| Loch nam Madadh to Beinn Rodagraich | Following Mean High Water Mark |
| Beinn Rodagraich to Rubha Heallacro | $\begin{array}{ll} 57.470771 & -7.175326 \\ 57.306398 & -7.201177 \end{array}$ |
| Rubha Heallacro to Rubha Mealabhaig | Following Mean High Water Mark |
| Rubha Mealabhaig to <br> Beinn Stac | $\begin{aligned} & 57.096036-7.229907 \\ & 57.057345-7.281984 \end{aligned}$ |
| Beinn Stac to Beinn Stac | Following Mean High Water Mark |
| Beinn Stac to Rubha Bruairnis | $\begin{array}{r} 57.052583-7.292203 \\ 56.979492-7.378533 \\ \hline \end{array}$ |
| Rubha Bruairnis to Huilis Beag | Following Mean High Water Mark |
| Huilis Beag to Aird nan Capali | $\begin{aligned} & 56.909232-7.545988 \\ & 56.830925-7.627801 \\ & \hline \end{aligned}$ |
| Aird nan Capali to South Mingulay | Following Mean High Water Mark |
| South Mingulay to Vertex B | $56.796067-7.653443$ $56.785399-7.661637$ |
| Vertex B to Vertex C | $\begin{aligned} & 56.785399-7.661637 \\ & 56.38811-7.023197 \\ & \hline \end{aligned}$ |
| Vertex C to Vertex D | $\begin{aligned} & 56.38811-7.023197 \\ & 56.204213-6.334677 \end{aligned}$ |
| Vertex D to Vertex E | $\begin{aligned} & \hline 56.204213-6.334677 \\ & 56.271415-5.817347 \\ & \hline \end{aligned}$ |
| Vertex E to Vertex F | $56.271415-5.817347$ $56.335154-5.654088$ |
| Vertex F to Vertex G | $\begin{aligned} & 56.335154-5.654088 \\ & 56.43361-5.600823 \\ & \hline \end{aligned}$ |
| Vertex $G$ to Rubha an Ridire | $\begin{aligned} & 56.43361-5.600823 \\ & 56.497179-5.684788 \end{aligned}$ |
| Rubha an Ridire to Lochinver | Following Mean High Water Mark |

## Alternative Marine Licence Area

MBL has also considered an alternative marine licence area based on a more intensive harvesting regime similar to that employed in Norway. This would entail harvesting over the entirety of each harvesting block once every five years (instead of $25 \%$ as proposed in MBL's preferred option).

Such an approach would reduce the area over which a marine licence was required by a factor of 4 .
A possible alternative marine licence application for this option is shown in Figure 5 based on this assumption and applying the same constraints used to inform consideration of the preferred marine licence application area described above.

The alternative marine licence area would encompass the Isle of Skye and Tiree and could be split as two separate licences.

While this option results in a significantly smaller marine licence area, MBL recognises that it is slightly less sustainable than its preferred option. For this reason, MBL does not intend to progress this option.


Figure 5. Alternative marine licence area

Approach to Licensing

Commercial scale wild seaweed harvesting is a new activity in Scottish waters and careful consideration needs to be given to the approach to licensing.

To ensure that it can harvest the amount of kelp it requires sustainably, MBL needs a marine licence covering a large geographic area. This licence area comprises a large number of discrete areas that are potentially suitable for harvesting. Based on the proposed licence area and the criteria adopted to defining suitable resource areas, there are approximately 204 discrete areas within which harvesting might occur.

It is clearly not practical to licence each of these areas individually. MBL's strong preference is for it to be granted a single marine licence covering the entirety of the proposed licence area. While such a large licence area is unusual, it is considered to be the most efficient means of licensing this type of commercial scale harvesting. It is noted that elsewhere in the UK, marine licences have been issued covering very large geographical areas, for example, Environment Agency has a marine licence for the deposit of tracers covering a large number of locations form Hampshire to the Thames Estuary (Licence ref: L/2012/00198). Similarly, BAE Systems has a disposal licence covering much of Lyme Bay for the disposal of practice rounds, metoc balloons and bathythermographs during military exercises (Licence ref: L/2011/00334).

MBL proposes that harvesting within this licence area should be governed by the annual production of one or more harvesting plans. These plans will identify the specific harvesting blocks to be targeted and the areas within those blocks that will be harvested. The plans will be prepared based on prior survey to determine resource location and density and any known constraints that need to be avoided (e.g. locations of PMFs). The plans will take account of any seasonal restrictions. They will also take account of any recommendations from the Environmental Steering Group based on previous monitoring as a part of an overall adaptive management strategy. In the absence of previous monitoring, inevitable in early years, the ESG will make use of other studies they deem relevant, particularly those available from Norway, to guide their recommendations.

Kelp abundance and density vary considerably from year to year, reflecting variations in annual growth and the effects of storm damage. Kelp resource surveys therefore need to be undertaken [in spring] in the planned year of harvest to provide sufficient confidence in the location of exploitable resources.

This approach is similar to that adopted for marine aggregate licensing in England and Wales whereby aggregate companies are awarded marine licences subject to conditions relating to detailed surveys and the preparation of an extraction plan.

MBL. suggests that conditions are attached to its marine licence in relation to the preparation of harvesting plans, monitoring and reporting requirements and communication:

- Condition requiring detailed kelp resource characterisation surveys for a harvesting block prior to harvesting occurring - MBL would propose to undertake these surveys in the spring of the year in which harvesting will occur using acoustic methods and drop-down camera/video surveys
- Condition requiring ecological survey of harvesting block prior to harvesting proceeding - this would comprise:
- drop-down camera survey to identify kelp biotope and the possible presence of other PMFs
o additional baseline monitoring of representative harvesting areas to include grab sampling to collect kelp for holdfast and epiphyte analysis
- Condition relating to preparation of one or more harvesting plans each year for harvesting blocks within which harvesting is to take place. These plans will take account of:
- The location and density of kelp resource to seek to minimise the footprint of the harvested area
- Any exclusion areas identified on the basis of ecological surveys or other data sources
- Any seasonal restrictions to protect ecological features or avoid conflict with other marine users
- Any recommendations from the ESG based on review of the previous year's monitoring
- Condition relating to prior approval of harvesting plans before harvesting commences
- Condition relating to requirement to inform mariners and fishermen of planned harvesting schedules
- Condition relating to annual post-harvest monitoring within representative harvesting blocks to monitor impacts and recovery. This monitoring would include:
- Drop down camera/video survey to assess kelp recovery (density/size)
* Grab samples to assess holdfast and epiphyte communities
n Condition relating to submission of annual monitoring reports to MS-LOT for review by Environmental Steering Group


## References

Burrows M.T. \& Allen, C.J. (2018) Wild Seaweed Harvesting as a Diversification Opportunity for Fishermen: Kelp Atlas. A report by SRSL for HIE, pp. 406

Burrows M. T., Fox, C. J., Moore, P., Smale, D., Sotheran, I., Benson, A., Greenhill, L., Martino, S., Parker, A., Thompson, E., Allen, C. J. (2018). Wild Seaweed Harvesting as a Diversification Opportunity for Fishermen. A report by SRSL for HIE, pp. 171.
Wild Seaweed Harvesting Scoping Report - comment log
Comments provided by MS-LOT by email on 12 June 2018 on the Draft Front End Scoping Report sent to Marine Scotland on 6 June 2018.

| Comments from MS-LOT | Response/Action |
| :---: | :---: |
| The advice provided below is given in good faith to inform your intended scoping report. It is noted that the Preliminary Draft - Scoping Report, dated June 2018, does not include details on the descriptions of the existing environments for the topics covered and therefore it remains difficult to advise on the suitability of the assessment approaches identified. However, MS-LOT advice to MBL remains that suitable assessments should be carried out to provide details on baselines for kelp stocks and effects on the receptors identified and agreed through the scoping process. In this regard, MS-LOT advice to you remains that, considering the size of the MBL proposed area, undertaking meaningful assessments to support an application may be difficult for MBL to achieve. | The completed Scoping Report now includes baseline descriptions of the existing environment for all receptors/topics identified, based on desk-based review of available information. The Scoping report also highlights additional evidence/data sources to be consulted for the Environmental Report and where such evidence/data is likely to be supplemented by stakeholder consultation. <br> As detailed in the Scoping Report, the size of the Area of Search is a direct consequence of the very low intensity harvesting approach that MBL has suggested and which MS have indicated would be their preferred intensity of harvesting. <br> We propose that a robust assessment of any potential harvesting impacts can be achieved within a single Environmental Report based on the criteria (shown below) that will be used to identify harvesting areas and blocks and exclude any sensitive areas throughout the AoS: <br> Criteria for identifying harvest areas/blocks <br> - Stands of $L$. hyperborea over $5 \mathrm{~kg} / \mathrm{m}^{2}$ density on rocky habitat (based on the MS commissioned Burrows et al. 2018 report) <br> Criteria for excluding areas from harvesting activity <br> - Overlap with areas/receptors of proven/agreed sensitivity <br> Application of these criteria is designed to result in the identification of dense stands (monocultures) of L. hyperborea on rocky substrate throughout the AoS, that are likely to be suitable for harvest in the absence of sensitive receptors. On this basis, we proposed that a suitably robust impact assessment can be undertaken for the whole AoS given the similarity between potential harvesting areas. Potential local/regional variations in |


|  | physical parameters can be considered within the Environmental Report, particularly given ABPmer's expert knowledge of physical processes in this region. <br> Furthermore, as described in the Scoping Report, MBL will undertake in situ baseline assessments (surveys) of kelp stocks and other ecological receptors to validate the suitability of harvesting areas/blocks identified in the Environmental Report prior to any consented harvesting activity taking place. These surveys will add to any existing historical data on the proposed areas. Based on these surveys, where areas are not deemed suitable for harvesting to go ahead (e.g. if kelp density lower than anticipated or sensitive receptors identified, in line with pre-arranged criteria with MS) no harvesting will be undertaking and MBL will relinquish the licence to harvest those specific blocks. <br> MBL consider that under taking such in situ pre-harvest assessments (as part of their annual harvesting plan) immediately prior to initiating harvesting activity in any specific year, will ensure that the assessment of the suitability for those harvesting blocks will be based on the most current data possible with regard to both kelp stocks and other ecological receptors. |
| :---: | :---: |
| Your Preliminary Draft - Scoping Report states that MBL does not propose to gather further area specific environmental data to support a marine licence application, rather that you would rely on desk based study and existing data, leaving baseline studies and assessment of area specific environmental impacts until later. As advised previously, marine licence applications should be informed with good environmental assessment, and while this may include existing data and desk-based assessment, such approaches need to be able to properly address the potential effects of a proposal. The size of your proposed 'licence area' and your proposed approach to only provide desk based study or existing data and not provide area specific data may be suitable for certain receptors where existing data is suitable, but we highlight that this approach applied to all receptors, | As described above, we propose that a robust assessment of potential environmental impacts within the AoS can be undertaken based on the existing available evidence and data, due to the general ecological similarity (monoculture stands of L. hyperborea on rocky substratum) across potential harvest areas. <br> MBL proposes to undertake in situ assessments (surveys) as part of an annual harvesting plan. The purpose of these would be to verify the proposed harvest area/blocks suitability prior to any harvesting activity occurring with respect to required kelp density and lack of receptors proven/agreed to be sensitive to harvesting activity. This approach is specifically designed to ensure that harvesting is only undertaken in suitable locations, which should |


| such as details of kelp stocks and environmental receptors, may be a risk to such an application and, as previously advised, may result in high levels of objection from interested stakeholders. You are therefore advised to apply for smaller, more targeted, areas, with more specific locations and assessment provided in your application. | reassure stakeholders. <br> As noted above, the size of the AoS is a direct consequence of the very low intensity harvesting approach that MBL has suggested undertaking. If MBL adopted the harvesting regime used successfully elsewhere, especially in Norway, the area required would be only $25 \%$ of that requested |
| :---: | :---: |
| In your document 'Determination of MBL's required licence area and licensing approach' MBL put forward two areas, one larger area covering the Minch (Fig. 4) and an alternative, covering areas at Skye and Coll and Tiree (Fig. 5). The alternative areas seem more suitable for assessment in terms of scale of application. However, the proposed activity requires more in the way of spatial delineation. It is recognised that MBL currently does not have the data on the location of the kelp and that such data may be difficult to obtain in the short term. It is for this reason that the smaller scale and phased approach is recommended. This could be taken forward in clusters of harvesting areas in smaller licence areas. A phased approach would enable you to assess each area in turn and to gather suitable supporting information for each separate application. Such an approach follows that put forward in the Wildweed report. For ease of reference this is found at Section 5.2 of the report. | The Scoping Report does refer to an alternative option, which would involve focussing the harvesting of seaweed around Skye, Tiree and Coll. However, such a reduction in area would require a higher intensity of harvesting to provide the minimum resource required to achieve an economically viable business. As MBL (and MS-LOT, based on advice received to date) prefer low intensity harvesting, MBL have not provided any further spatial delineation of these alternative areas. <br> To ensure economic investment and economic viability the proposed enterprise requires specific harvest levels to be reached within 6 years. As such, MS-LOT's recommendation for MBL to apply for licences for smaller individual harvesting areas in a 'phased' manner would not give investors enough assurance to justify their up-front investment in harvesting equipment /vessels and an MBL processing plant. In these circumstances, their investment would likely relocate to a country where the supply and harvesting regime is already in place (Norway, Iceland or France). <br> However, the Scoping Report details how the volume of seaweed harvested would be gradually increased between years 1 to 6 of the business to facilitate the development and upscaling of the business. Combined with MBL's proposed approach of having 'adaptive management' of harvesting contained within the licence conditions (involving annual pre-harvesting plans to ensure the suitability of blocks within harvest areas, fallowing of blocks within harvest areas and post-harvesting monitoring to inform the annual pre-harvesting plan) the proposal as described in the Scoping Report does effectively constitute a phased approach to harvesting while also providing investors with the confidence to invest in Scotland. |


| For the avoidance of doubt, the point above relates to applying for more locations but in individually smaller areas while maintaining the lower percentage of harvest you have described as being suitable for the larger area. | This is MBL's intention. The Environmental Report will appraise potential harvesting areas and will focus the licence application(s) on the most sustainable harvest locations. |
| :---: | :---: |
| On the matter of the reintroduction of the holdfasts to the marine environment, MS-LOT has taken advice on OSPAR obligations and licensing requirements. Mere disposal of material not on the list of 'certain waste or other matter' in Annex II of the OSPAR Convention is prohibited. However, placement of matter for a purpose other than the mere disposal thereof is not considered to be dumping or subject to the prohibition. As you intend to return holdfasts, and the rocks attached, in order to facilitate the survival of invertebrates and return organic matter to the marine environment to provide a food source for various species, it is not considered that the prohibition is applicable. It would be a licensable activity however, and should be subject to an application. | Noted. |
| Following on from this, it appears that clarification from you around process for harvest needs to be clearly considered in order for stakeholders to make informed comment on your proposal. In addition to the spatial aspect raised above, another aspect that requires such clarification concerns the diversity in the environment in which any licensed harvest would take place. It is likely that significant quantities of other algal species would be removed from the seabed during operations and you should explain how this would be managed in terms of avoidance of harvesting non-target species and management of non-target species when you have harvested them. | Stakeholder engagement is planned to communicate MBL's proposed approach to harvesting i.e. the low intensity harvest they propose to undertake, the validation of the suitability of areas prior to any harvest and the avoidance of sensitive areas based on pre-harvesting surveys. <br> The Scoping Report details how the harvesting strategy will target monoculture stands of Laminaria hyperborea and that the presence of such monocultures will be confirmed via pre-harvesting surveys before any harvesting activities occur. This is specifically designed to ensure that removal of non-target seaweed species will be minimised. <br> There is the potential that removal of $L$. hyperborea will result in the removal of relatively small volumes ( $1-1.5 \%$ wet weight max) of epiphytic red algae attached to the target kelp species. Where this occurs, the epiphytic red algae will be retained and used, in the short term, in the agricultural industry. In the longer term, MBL would seek to utilise any incidental red algae harvested in the biorefinery process. In this way MBL seek to minimise any waste from |


|  | biological resources. |
| :---: | :---: |
| Comments from MSS | Response/Action |
| Marine Scotland Science (MSS) suggests that the "fish and shellfish" assessment requires to be more clearly articulated. MSS advises that it may be erroneous to assume an even distribution of juvenile cod across the whole west coast, as seems to have been assumed, because we know that juveniles are far from evenly distributed and, in fact, are more likely to be concentrated in shallow waters across a variety of habitats including kelp. MSS advise that more detail is needed on this issue prior to it being screened out of any environmental assessment process. | Impacts on fish and shellfish are included in the Scoping Report as requiring further detailed impact assessment in the Environmental Report. We will discuss the potential impacts with MSS in more detail during preparation of the Environmental Report. <br> MSS' comment on the distribution of juvenile cod is noted. The Environmental Report will consider in detail any potential impacts on important areas for fish and shellfish such as spawning and nursery grounds, using the best available evidence, supplemented by expert consultation where appropriate. The ER will then provide a detailed assessment of any potential impacts on mobile receptors including fish. |
| On the understanding that 'kelp removal in one harvesting block will not exceed $15 \%$ of the estimated biomass in one calendar year, representing $3 \%$ of the kelp resource in the entire harvesting area' MSS considers it is reasonable to accept that 'changes in kelp bed density due to harvesting will be within the natural variation of kelp density associated with storms and other natural events, where entire beds can be removed'. However, MBL still needs to demonstrate that areas are not impacted much more intensively either in time or space (e.g. by concentrating the harvesting effort on subsets of the 'harvesting blocks' or specific time periods). | MBL's proposed adaptive management approach (pre-harvesting surveys to verify suitability, followed by post-harvest monitoring, data from which will be used to inform and shape the subsequent annual harvesting plan) is designed to provide $M S$ and other regulators with the information that they are requesting in this comment. |
| It is also important for MBL to consider the cumulative effect of harvesting plus storms and other natural events, by considering the effect of natural events on kelp coverage changes. | Noted. Cumulative effects of harvesting activity and natural disturbance will be considered in the Environmental Report. This will be based on the best available evidence relating to natural disturbance/variation and supplemented by expert consultation where appropriate. We note that harvesting will be a less significant influence on biomass than removal by natural processes. Natural losses are around $34 \%$ annually, compared to harvesting removal of $15 \%$ in any given year with repeat harvesting not occurring for a period of around 5 years. |
| MSS note that Section 4.2.1 - physical environment - 'Description of the | The existing environmental baselines within the Scoping Report have now |


| existing environment' still needs to be drafted. Whilst Kelp will grow on hard substrates, where erosion and sediment transport issues are likely to be of minimal concern, it remains that changes to currents and waves as a result of large scale kelp removal, may impact nearby areas/substrates which may be more vulnerable to changes in the hydrodynamics. | been drafted. <br> The Scoping Report details how the likely impacts on coastal processes and habitats will be assessed in the Environmental Report. <br> Furthermore the Scoping Report describes how the Assessment methodology will identify 'sensitive' areas (including soft sediment habitats that may be vulnerable to changes in physical processes) and how such areas would be excluded from harvest areas within the annual harvest plan. |
| :---: | :---: |
| Concluding comments (from MS-LOT) | Response/Action |
| It remains Marine Scotland's Licensing Operation Team advice that spatial delineation of the proposed MBL activity is required in order to reasonably assess the impacts of this activity and that the scoping report should include details on what data is being used and what the assessment methodologies will be in order to properly consider the suitability of the proposed methodologies. Such considerations are the purpose of the 'scoping process'. Your decision to follow the scoping process is welcomed by MS-LOT at this stage and will be welcomed by advisers and stakeholders. The proposed activity is novel in terms of assessment of potential environmental effects. As such, MS-LOT, on behalf of Scottish Ministers, and our advisers, will require details on the activity, location and effects particular to those regions in line with previous advice given. | The completed Scoping Report now includes baseline descriptions of the existing environment and highlights additional evidence/data sources to be consulted for the Environmental Report and where such evidence/data is likely to be supplemented by stakeholder consultation. <br> The Scoping Report also describes how further spatial delineation of potential harvesting areas within the AOS will be determined within the Environmental Report. As described above, the areas that MBL wish to target are monocultures of $L$. hyperborea and that the potential harvesting areas will contain similar habitats/biotopes, on which the impacts of the proposed harvesting activity can be assessed. It is acknowledged that the range of habitats/biotopes and features in the vicinity of potential harvesting areas/blocks will differ and the environmental assessment process will identify and exclude any areas where significant effects are predicted. The Scoping Report also details the proposed approach to assessing each potential harvesting area. In this way the Environmental Report should be able to provide a robust assessment of the impacts of harvesting in specified areas of $L$. hypoborea on rocky substrates throughout the AOS, whilst adequately considering the likely regional conditions and environment. |

From:
Sent:
11 September 2018 14:39
To:
Subject:
FW: Meeting agenda Aberdeen

11

## From

Sent: 11 June 2018 16:14


Subject: RE: Meeting agenda Aberdeen
Thanks I will have a look at these later. See you tomorrow.

From:
Sent: 11 June 2018 16:12
To:
CC:
Subject: Meeting agenda Aberdeen

Ahead of the meeting on Tuesday this is a copy of the slides that SH prepared.
We will present these at the meeting on Tuesday after? gives an overview of MBL and its aspirations.
. s most likely to give you a phone later today!
I have already sent the proposed agenda to Mike to allow him to modify if required.

- will be with us joining at Perth

Kindest regards and looking forward to Tuesday

This email has been scanned by the Symantec Email Security.cloud service.
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*******
This email has been received from an external party and has been swept for the presence of computer viruses.

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## From:

Sent:
To:
Cc:
Subject:

25 July 2018 10:05

MS Marine Licensing
Scoping Report and timeline

Hi

Thanks, we're following the EIA Regulations for process as this will keep it more clear for stakeholders as to what they are being consulted upon, which should make it a more efficient process. As such it's a 30 day consultation then the EIA regs state five weeks for us to issue an opinion. However, we appreciate that this will make it difficult for you to prepare your Environmental Appraisal Report and Application in time for your October timeframe, and we are not statutorily bound by these regs here, so we can share responses with you as the consultation closes and we will try to get the scoping advice out to you sooner. We can arrange to meet in that period.

In terms of a consultation on the application and your environmental appraisal report, we would consult for 30 days and then, depending on the outcome of that consultation, draw together a determination response.

The timeframe looks as follows:

## Consult on Scoping report 25 July to 24 August

MS-LOT prepare Scoping advice $28^{\text {th }}$ Sept (at the latest).
MBL carry out pre-application consultation and prepare Environmental Appraisal Report and Marine licence Application(s).
MS-LOT review Environmental Appraisal Report (1 week)
Consultation on Environmental Appraisal Report and application(s) 30 days
MS-LOT determination of application(s) - dependant on consultation responses.

It has been recognised through this process that some degree of Pre application consultation with potentially affected stakeholders and advisers would be beneficial and we note that you have drawn up draft letters to facilitate this. If you are following parallel provision as those in the Marine Licensing (Pre-application Consultation) (Scotland) Regulations 2013 (http://www.legislation.gov.uk/ssi/2013/286/made) you will need to factor when you go to stakeholders yourselves into your timeframes to best seek their involvement in a timely manner. We recommend looking at the Regulations in the link above as this will show how this process is usually carried out.

Please copy the MS marine licensing mailbox into all future correspondence.

Happy to discuss any aspect of the above.
Regards

From: [mailto
Sent: 23 July 2018 16:19
To: $\square$
Subject: RE: Scoping Report
$\mathrm{Hi} \square$
We crossed like ships in the night
I have just sent you the detail you requested.

$\mathrm{mTel}+44$ (O)

Email Disclaimer
The information contained in this email is intended solely for the addressee. Access to this email by anyone else is unauthorised. If you are not the intended recipient, any form of disclosure, reproduction, distribution or any action taken or refrained from in reliance on it, is prohibited and may be unlawful. Please notify the sender immediately. All statements of opinion or advice directed via this email to our customers or business contacts are subject to the terms and conditions of the business relationship concerned. The content of this email is not legally binding unless confirmed by letter or telefax. The sending of emails to us will not constitute compliance with any time limits or deadines.

## From:

Sent: 23 July 2018 16:14
To:
Subject: RE: Scoping Report

Dear

I acknowledge receipt of your Scoping report. Prior to MS-LOT sending this to our consultees to begin the process, please can you advise on your intention to engage with stakeholders? I note in the email below you refer to having drafted letters. I assume that this is for your own engagement with stakeholders.

MS-LOT will begin consultation with stakeholders on your scoping report in the near future. The consultation period is usually 30 days. Once the consultation is concluded, MS-LOT will co-ordinate a scoping response and provide you with this.

Happy to discuss on the number below if that would help.

Regards


Scottish Government | Marine Laboratory | 375 Victoria Road | Aberdeen | AB11 9DB

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Djrect Dial: 
Email:
Website: http://www.gov.scot/Topics/marine
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## Good afternoon

I enclose a low resolution version of the Scoping report to ensure it does not crash your e-mail servers If you require the High resolution format it is available from APBmer directly.

We believe we have a working document to aid the process of obtaining a marine license and we look forward to comments and resolution.
The narrative within the report has been agreed between MBL and our expert advisors ABPmer
We have also prepared communication letters for the stakeholders and national bodies which we will send as draft documents in a separate e-mail.

I have included all the actors who have been involved with the process and left it to your discretion to forward the scoping report to our cc list.

If you need further clarity please advise ASAP

Kindest Regards




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[^1]:    Legal disclaimer - important notice

[^2]:    Marine Biopolymers Limited Registered Number SC367807 Company Address:- Unit 54 Heathfield Industrial Estate, Boundary Road, Ayr KA8 9DJ. Tel $+44(0) 1292262680$, Mtel $+44(0) 7769628710$

[^3]:    Marine Biopolymers Limited Registered Number SC367807 Company Address:- Unit 54 Heathfield Industrial Estate, Boundary Road, Ayr KA8 90J. Tel $444(0) 1292262680$, Mtel $+44(0) 7769628710$

[^4]:    Marine Biopofymers Limited Registered Number SC367807 Company Address:- Unit 54 Heathfield Industrial Estate, Boundary Road, Ayr KA8 9DJ. Tel +44 (0) 1292262680 , Mitel +44 (0) 7769628710

[^5]:    'The estimation of weed weight proved to be difficult underwater so we exceeded the capped amount

[^6]:    Marine Biopolymers Limited Registered Number SC367807 Company Address:- Unit 54 Heathfield Industrial Estate, Boundary Road, Ayr KA8 9DJ. Tel $+44(0) 1292262680$, Mtel $+44(0) 7769628710$

[^7]:    Marine Biopolymers Limited Registered Number SC367807 Company Address:- Unit 54 Heathfield Industrial Estate, Boundary Road, Ayr KA8 9DJ. Tei $+44(0) 1292262680$, Mtel $+44(0) 7769628710$

[^8]:    Marine Biopolymers Limited Registered Number SC367807 Company Address:- Unit 54 Heathfield Industrial Estate, Boundary Road,
    Ayr KA8 9DJ. Tel $+44(0) 1292262680$, Mtel $+44(0) 7769628710$

[^9]:    ${ }^{1}$ It is noted that kelp is also identified as a PMF

