

## **Marine Biopolymers Ltd (MBL) proposal to mechanically harvest kelp in the west of Scotland**

### **Background**

1. Under the *Marine (Scotland) Act 2010*, vehicle and vessel based seaweed removal from the seabed requires a marine licence.
2. There is currently seaweed harvesting activity at varying scales in Scotland.
3. This is the first time the proposed seaweed harvesting method is an activity considered to be a 'licensable marine activity' in terms of the *Marine (Scotland) Act 2010*
4. MBL (the applicant) approached MS-LOT with a proposal to commercially harvest kelp from the seabed some years ago. MS-LOT advised MBL that a marine licence application would need to be supported by a report of an environmental assessment.
5. Kelp is a Priority Marine Feature (PMF), protected by Policy 9 of Scotland's National Marine Plan - activity must not result in significant impact on the national status of a PMF.
6. MBL has submitted a scoping report which forms part of the overall licence application process. The report (to *scope* the content of an environmental assessment) maintains the company's desire to see a single application that will cover a very large area off the West coast of Scotland (Butt of Lewis to south Mull).
7. MS LOT has been in regular dialogue with MBL providing guidance on licensing process. MS LOT advice to MBL has consistently been for MBL to submit a number of applications for smaller areas rather than one application covering a large area. This would make it achievable to consider the environmental implications and ensure licensing process is manageable. MS-LOT has also advised MBL to engage with local stakeholders / interested parties as early in the process as possible.
8. The subject of the current publicity is MBL's scoping report which constitutes part of pre-application stage. No formal marine licence application has yet been made to MS-LOT.

### **Press Lines used to date**

9. "Anyone wishing to carry out mechanised removal of seaweed from the seabed needs a marine licence from Marine Scotland, on behalf of Scottish Ministers and will also need to work with Crown Estate Scotland.
10. The scoping report, which was submitted to Marine Scotland, is a pre-application stage during which the environmental aspects which require to be assessed as part of the licensing process are agreed.
11. Marine Scotland will consult fully on any forthcoming application and environmental assessments. Scottish Ministers will then make a determination on a licence application, taking into account the effects on the environment and other uses of the sea."

### **Consultation**

12. Consultation to seek advice to include in MBL's environmental assessments began 26 July 2018, was emailed to stakeholders, published on the MS webpages and publicised through Twitter (given the geographic extent the licence area sought by MBL) to achieve a suitable level of public engagement at this stage of the pre-application process in line with the public participation requirements on signatories to the Aarhus Convention on Access to Information, Public Participation in Decision-making and Access to Justice in Environmental Matters.
13. [http://marine.gov.scot/sites/default/files/r3007\\_wild\\_seaweed\\_harvesting\\_scoping\\_report\\_17july2018lr\\_0.pdf](http://marine.gov.scot/sites/default/files/r3007_wild_seaweed_harvesting_scoping_report_17july2018lr_0.pdf)
14. This is not consultation on an application but on the scope of the assessments needed— However, by Friday early pm, there are an unprecedented 1750 representations. The majority are not scoping advice but objections from members of the public and community groups, but also from fisheries representatives. Representations are likely to continue.
15. MSPs and various newspapers have been copied into several of the representations.

### **Next steps**

16. When the consultation on MBL's Scoping report ends (25<sup>th</sup> Aug 2018, extended until 31<sup>st</sup> for some who have requested), MS-LOT will compile the representations into a scoping advice letter to assist MBL in preparation of their assessments.

Cabinet Secretary for Rural Affairs, Food and Environment  
Deputy First Minister

## **COMMERCIAL SEAWEED HARVESTING IN SCOTLAND: MBL**

### **Purpose**

To update you on the issues arising for one company keen to exploit wild stocks of seaweed and clarify the consenting mechanism in the absence of a clear regulatory framework. This should be read in conjunction with the more general advice on seaweed harvesting ██████████ submission also of today's date.

### **Priority**

**Urgent.** The developers (MBL) seek clarity on the process for securing a consent to harvest seaweed and have said that early progress is essential for their operations in Scotland.

### **Seaweed- a Scottish Resource**

Seaweed is a significant resource for Scotland, very important environmentally and historically but harvested at a small scale at present. There is considerable potential for growth and development of its exploitation and use, which is particularly welcome for island and coastal communities. The main opportunities have been in securing high added value from the exploitation of small quantities of high quality niche product (for example Mara), and in the cultivation of seaweed (including multi-trophic aquaculture).

However, seaweeds play an important role in supporting marine biodiversity by providing widespread and complex habitats and niches for a large number of marine species at important life stages. Wild seaweed harvesting activities may have widespread implications for marine ecosystems and may also affect ecosystem services. The following impacts of seaweed removal could have serious environmental consequences:

- loss of important habitat for a range of plants and animals, from primary producers to higher trophic levels (higher predators) alongside loss of direct and indirect food sources. loss of nursery grounds for juvenile fish and invertebrates , with possible consequences for higher trophic levels and therefore commercial fish stock.
- loss of the physical modification effects of seaweed. Kelp beds are known to play an important role in wave damping, which can reduce coastal erosion and flooding events.
- loss of carbon sink provided by seaweed species.

### **MBL New Scottish Kelp Industry**

MBL (Marine Biopolymers) was established in 2009 with the aim of becoming a leader in the extraction of natural polymers from seaweed. MBL is based near Ayr and the people involved have strong links with Kelco, formerly a leading company in seaweed exploitation, particularly in California.

MBL has requested a consent for the mechanical extraction of kelp seaweed in Scottish waters. The company says it has a new process for extracting alginate from kelp which is 4 times faster than conventional processes. It proposes to mechanically harvest kelp from the Inner Hebrides (now proposed to be Gigha and Tiree, with a factory in Argyll. (Until 2014 the plan was to harvest from the Western Isles with a factory at Lochboisdale). The intention is to harvest seaweed on a 5 year cycle, harvesting 4000 tonnes in year 1 growing to 40,000 tonnes in year 5. MBL claim that the extraction process means that the product would be high quality, leading in time to its use in higher value products.

### **Legal Aspects Of Seaweed Harvesting**

The Marine (Scotland) Act 2010 introduced a licensing regime to regulate activity in the Scottish marine area. However this does not include seaweed harvesting. As mechanical harvesting (and other commercial scale harvesting) could have significant impacts on the environment and potential on other marine users, our view is that such projects should require a marine licence. We have therefore proposed to undertake a Strategic Environmental Assessment which would underpin the development of a regulatory framework ( [REDACTED] submission of 3 November.) To bring seaweed harvesting into the licensing regime would require at least affirmative order regulations, once a framework had been determined.

### **MBL Current Seaweed Harvesting Proposal**

Although exploitation of wild seaweed as proposed by MBL is not regulated by any existing regime, a lease from the Crown Estate is required and the process for obtaining a lease is informed by advice from SNH. That is also the situation for other Scottish seaweed harvesters, such as Mara and the Hebrideen Seaweed Company.

There is therefore no licence application from MBL but they are working on a harvesting plan and have had discussions with SNH over the last few years. SNH has confirmed they are working well with MBL but that they have not had detailed site specific discussions. The Crown Estate has said they have had little contact over the last year. From my discussion with the company, I consider that although they are committed to sustainability, they are underestimating the challenges of securing a licence for very large quantities of extraction and the level of scrutiny they are likely to encounter.

MBL are seeking a licence to ensure that any investment is protected. If they cannot guarantee a stable supply of seaweed it is unlikely the project will attract investment. We believe that MBL see a Marine Licence in combination with the Crown Estate lease as key elements of a formal system that could give them guaranteed access or exclusivity.

### **Licensing Commercial Seaweed Harvesting**

As noted above commercial scale harvesting of seaweed has potentially significant implications. Licensing a new industry, extracting large quantities of seaweed is therefore unlikely to be straightforward.

There can also be expected to be strong views from islands and community interests about granting access to "their" seaweed resource. We understand that seaweed

harvesting is a hot issue in Ireland at the moment with a number of commercial licence applications stalled, and new legislation awaited.

Norwegian experience demonstrates a sustainable mechanised substantial kelp industry is possible although there are environmental issues. Norway harvests mechanically about 160,000 tonnes of kelp a year. Opening up of new growing areas involves two to three years of trials to check on regrowing rates before licences are granted. An overview of the Norwegian management regime is provided at Annex A- and this may well provide elements of a model which could be followed.

Most of the research interest in seaweed in Scotland recent years has been in cultivation rather than wild harvesting and therefore we do not have a good evidence base upon which to make decisions. Data on stocks is available but is from the 1940s and 1950s and data of this age would not be considered suitable for any other form of environmental permitting regulation. Also we do not have detailed site specific studies and trials which would be a reasonable expectation to underpin large scale exploitation.

### **The Way Forward**

In our view the best way forward is to take a **strategic approach to developing a new licensing regime** for seaweed harvesting, through a Strategic Environmental Assessment, which would identify the extent of the need for new controls, followed by legislation, including any transitional arrangements necessary.

While it is an option, we would be concerned about any approach which allowed **commercial scale extraction, without a licence**. That could make it difficult to manage the environmental consequences particularly if other operators followed suit, and would not provide transparency, scrutiny and ultimately enforcement.

However the length of time which it will take to complete the SEA and establish a new legislative framework is causing at least this one firm (MBL) difficulties. While there are a number of regulatory risks, if we can agree a **“proof of concept” type approach** with MBL, we may be able to work with them using their initial activity to test a new regulatory approach. We consider this could allow us to control the activity, but also allow MBL to test their approach. While there could be criticisms of preferential support for one company carrying out a controversial activity, that can be weighed against the opportunity to ensure that there was a strong science base underpinning a potential new industry.

We would need to consider the resourcing of this against other marine licensing issues.

### **Recommendation**

**If ministers wish to prioritise support for seaweed harvesting**, agree we open detailed discussions with MBL to understand what proof of concept work they will undertake and how we might run this in parallel with the SEA process.



## Annex A

### Summary of Norwegian Regulations on harvest of seabed algae

Harvesting of kelp at depths deeper than 20 m is forbidden, and at less than 20 m depth it is forbidden to harvest kelp unless permitted by regional regulations. Open fields are regulated for harvest by regional regulations for kelp harvesting. Areas are opened for harvest every 5<sup>th</sup> year. New fields can be opened if the harvester can document that harvest is sustainable. Boats must be registered in Fishery Directorate register for kelp harvesting. The harvester has to pay tax for landings and the equipment used for harvest has to be adapted to the activity. Specific regional regulations for harvesting kelp exist in Sør-Trøndelag, Møre og Romsdal, Sogn og Fjordane, Hordaland and Rogaland.

Harvesting plans for *L. hyperborea* are made for five years in a row, and are continued if the regrowth of kelp is good and the harvest is sustainable. Practically it means they are continued if no stakeholder objections or negative results are reported in the annual survey

#### Records required by harvesters.

The harvesters are required to keep journals that give the time, location and tonnage of harvested kelp, and yearly report these data to the Fisheries Directorate. Tonnage is reported in wet weight. The Fisheries Directorate, regional and central, records and publishes statistical data.

#### Control of activity.

The Fisheries Directorate is in charge of control and supervision of the harvesting activity, and the Norwegian Coast Guard does unannounced checks of boats where harvesting journals can be examined. Since 2004 the Institute of Marine Research has the responsibility to perform yearly survey of the harvesting fields and control areas to assess the impact of harvest on populations of *L. hyperborea* between Rogaland and Sør-Trøndelag (instructed by the FKD). Video transects are used to assess the removal grade and regrowth, as well as the coverage and density of kelp, plant height, recruitment, species composition, epiphytes, number of sea urchins and fish. Trawling can be terminated if results are negative.

#### Opening of new areas for harvest.

The Fisheries Directorate evaluates requests to open new areas for harvest. The process takes several years because survey and test trawling in the specific area is required to decide if harvesting is sustainable. The decision to open a new area for harvest is based upon a long term survey done by the Institute of Marine Research. The status of sea urchins in the specific area, bird protection areas, conflicts with fishermen, the local community opinion and access to raw material for industry is also taken into consideration. The applicant has to document that trawling has no negative impact on the local ecosystem, as well as proposed quantities for harvest amount and areas for harvest. There is no exact cost of obtaining a license, but the cost of the survey before opening new areas for harvest is shared between the industry, regulators and Institute of Marine Research. The opening of a new area for trawling permits harvest of a maximum amount of *L. hyperborea* in a specific area, in a defined period of time of one year.

Source The Norwegian Seaweed Industry; Work Package 1&2, November 2012  
Bioforsk –Norwegian Institute for Agricultural and Environmental Research

[Redacted]

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**From:** [Redacted]  
**Sent:** 26 October 2017 10:07  
**To:** Cabinet Secretary for the Rural Economy and Connectivity  
**Cc:** [Redacted] Cabinet Secretary for the Environment, Climate Change and Land Reform; Director of Marine Scotland Mailbox; [Redacted]  
**Subject:** RE: HIE Wild Seaweed Harvesting project update

[Redacted]  
Thanks.

As I mentioned this morning, Scottish Enterprise has confirmed that the [Redacted] is still very much in the frame. [Redacted]

I would be happy to be involved in any discussions with [Redacted] if required.

[Redacted]

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**From:** [Redacted] **On Behalf Of** Cabinet Secretary for the Rural Economy and Connectivity  
**Sent:** 26 October 2017 09:57  
**To:** [Redacted]  
**Cc:** [Redacted] Cabinet Secretary for the Rural Economy and Connectivity; Cabinet Secretary for the Environment, Climate Change and Land Reform; Director of Marine Scotland Mailbox; [Redacted]  
**Subject:** HIE Wild Seaweed Harvesting project update

[Redacted]

Mr Ewing has noted with thanks and as discussed he would like to speak to [Redacted] on this.

[Redacted] will set up the call and we will confirm if you and/or [Redacted] is to be on the call.

Many thanks

[Redacted]

[Redacted] | Deputy Private Secretary to the Cabinet Secretary for the Rural Economy and Connectivity|

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**From:** [Redacted]  
**Sent:** 25 October 2017 16:08  
**To:** Cabinet Secretary for the Rural Economy and Connectivity; Cabinet Secretary for the Environment, Climate Change and Land Reform; Director of Marine Scotland Mailbox; [Redacted]  
**Cc:** [Redacted]  
**Subject:** HIE Wild Seaweed Harvesting project update

[Redacted]

This is just a brief note to provide Mr Ewing with an update about our engagement with the seaweed industry.

The Wild Seaweed Harvesting project is a priority study being undertaken for HIE by SAMS and is nearing completion with good progress across all three work streams. SAMS provide weekly update reports to HIE and these are copied to the Steering Committee for review.

We were advised yesterday of a slight delay in completing the kelp mapping work stream, due to bad weather hindering diving opportunities, but the final dive element is due to be undertaken this Friday.

The draft report will be with HIE by 3 November and the Steering Group, are ready to provide comments as a priority. HIE/SAMS then plan to release some initial feedback to the seaweed industry at the annual conference of the Scottish Seaweed Industry Association on 15 November in Oban. The final report is due to be with HIE on 8 December, slightly later than the original deadline of 30 November.

To help ensure industry understands and supports the progress being made on the project, I have regular meetings and discussions with SSIA's Walter Speirs and we both sit on the project Steering Committee. Mr Speirs has invited me to attend, as an observer, the SSIA AGM on 14 November and to attend their conference the next day.

This will give me an opportunity to meet with a wide range of seaweed stakeholders including some of the smaller artisanal seaweed harvesters, and hopefully to catch up with MBL to find out how their search for investors is progressing.

I will let you have a further update after the conference.

[Redacted]

[Redacted]

marine scotland:

Fisheries Division

Seaweed Industry Development Manager

[Redacted]

[Redacted]

**Cabinet Secretary for Rural Economy and Connectivity**  
**Cabinet Secretary for the Environment, Climate Change and Land Reform**

**WILD SEAWEED HARVESTING UPDATE**

**Purpose**

1. To provide an update on the latest developments relating to the wild harvesting of seaweed. In particular to advise that, the Wildweed report has now been completed, the SEA Environmental Report is published and the post-adoption statement is currently being drafted, and a Scottish company Marine Biopolymers Limited (MBL), has begun the process of applying for a Marine Licence to harvest kelp on the West coast.

**Priority**

2. Routine.

**Background**

3. The Scottish Government 'Wild seaweed harvesting: strategic environmental assessment - environmental report', was published in 2016, with a public consultation held that closed in February 2017. A post adoption statement and next steps document are the next stages in the SEA process.
4. The SEA confirmed that '*significant adverse effects can occur as a result of large scale (i.e. industrial) mechanised harvesting of seaweeds (namely kelps and wracks)*' but also stated that '*Many of these effects are likely to be site specific and will depend on a range of factors, including the species to be harvested, the harvesting method, the amount taken, the timing (season) of harvest, the harvesting location and its environmental context, and the time allowed for regeneration prior to harvesting again.*'
5. In 2017, Highlands and Islands Enterprise commissioned a study 'Wild seaweed harvesting as a diversification opportunity for fishermen' to determine how much kelp was available, where key stocks were located, and diversification opportunities. The study (known as Wildweed) also set out the current licensing process and considered harvesting methods, environmental impacts and the viability of seaweed harvesting, taking into account the costs that might be involved.
6. The Wildweed Report was finalised in May 2018 and concluded that, although few surveys were undertaken, results from the modelling process show there is a large quantity of different species of seaweed, particularly laminaria hyperborea, available in Scottish waters and that harvesting could be undertaken in a sustainable manner with appropriate controls and monitoring. A more detailed



summary of the key findings is attached at Annex A along with a link to the full report.

7. MBL has been developing a system for processing kelp, producing a range of high value products, over the last 7 years or so [REDACTED]. The company has been discussing wild harvesting with Marine Scotland and the Crown Estate (now Crown Estate Scotland (CES)) for over 5 years without making any formal application to harvest seaweed.

8. [REDACTED]

9. MBL has now engaged a prominent environmental consultant, approached MSLOT with a preliminary Scoping Report based on his advice and data from the Wildweed Report, and indicated their intention to seek a Marine Licence under Part 4 of the Marine (Scotland) Act 2010 to harvest the kelp species, laminaria hyperborea around the West Coast. This is the first time such an activity has required a license from Scottish Ministers.

10. Officials met with the company to discuss the preliminary scoping report on 12th June 2018 and raised concerns over a number of areas including the scale of planned harvest and interaction with stakeholders. MBL are currently updating the Preliminary Scoping based on feedback from MSLOT including providing information on specific areas of harvest, environmental assessment, monitoring and stakeholder consultation.

11. In addition to a Marine Licence, the company also requires a lease from CES before any harvesting can take place. CES have indicated that they will need to offer a competitive process for seaweed harvesting leases. This will need to be an open and transparent process, including advertising the leasing opportunity or 'round', with CES aiming to maximise interest from the seaweed harvesting industry.

12. Any publicising of the opportunity by CES will need to recognise the commercial sensitivity around MBL's harvesting proposals and investment plans. [REDACTED]

[REDACTED] Marine Scotland are engaging with CES to consider how this new process might operate fairly in practice and the timescales that might be involve.

13. A more detailed report on our consideration of Wildweed recommendations, progress with the MBL application and discussions with CES will follow in due course.

### **Industry Input and Views**

14. The Scottish Seaweed Industry Association has been involved in the development of the Wildweed Report as a member of the Steering Committee and supports the

findings of that report. In 1995 Scotland was the world's leading producer of alginates and the SSIA also strongly supports the proposal by MBL to bring wild seaweed harvesting and alginate processing back to Scotland for the first time in 10 years.

## **Communications**

15. The Wildweed report is now on HIE's website.

## **Recommendation**

**15. We invite you to note:**

- **Publication of HIE's Wildweed Report and its findings, summarised at Annex A**
- **A Scottish Company, MBL, with world leading technology is interested in harvesting kelp and processing it into a range of high value products. It has secured investment agreements and is preparing a Scoping Report to support an application for a Marine Licence.**
- **MBL will be providing further information on specific areas of harvest, environmental assessment, monitoring and stakeholder consultation.**
- **It will be challenging for MBL to submit a Scoping Report, undertake sufficient, robust Public Consultation with interested stakeholders, submit a Marine Licence application, undergo public consultation, agree post consent plans etc. to allow 'access to seaweed' by October 2018 especially given that formal submissions are not expected until at least July 2018.**

[REDACTED]

**We will provide a further update on Wildweed considerations, progress with a potential Marine Licence application and discussions with CES in due course.**

[REDACTED]  
Marine Scotland  
Ext [REDACTED]  
27 June 2018

## **Key findings of the Wildweed Report Commissioned by HIE**

The following key findings are from the Executive Summary of the report.

The seaweed industry has the potential to thrive and develop to support a range of businesses.

There are large stocks of kelp, and it is believed that they may be harvested with tolerable impacts to the natural environment. There is a lot of laminaria hyperborea in particular, up to 20 million tonnes of which 6.5 million tonnes are in harvestable densities.

The priority area for harvest would be the Minch and Inner Hebrides which hold over one third of our stock of suitable supplies but Outer Hebrides, Orkney, and Shetland are also suitable.

Wild harvesting may present an opportunity for fishermen to diversify reducing pressure on fish stocks and providing alternative income. It is not possible to set out an accurate cost of carrying out the studies and consultations required to fulfil the current pre-harvesting requirements but costs will be high and are unlikely to be feasible based on primary harvesting activity alone.

If the operation also involves processing or refining to achieve a high value product, then survey and monitoring costs might be acceptable as part of the entire operation. High value industries, including pharmaceuticals and food-grade manufacturing and processing, require high quality fresh seaweed that meets sustainability standards. This should justify, and make feasible, monitoring and management requirements that may seem unfeasible when compared to primary harvesting costs, but are as a percentage relatively low in comparison to the value of finished products.

Due to promising volumes and quality considerations for Laminaria in Scottish waters, the primary seaweed cost per tonne may be higher than less suitable international substitutes. Since the licence-holder is likely to be the buyer/processor, the internalisation of this cost within operations should be viable.

The feasibility of large scale harvesting has yet to be examined fully and there are knowledge gaps for sustainability of harvests, environmental impacts and the cost of securing the necessary permissions.

Efforts should be made to devise the lowest cost management and licensing regime possible to meet requirements, and allow applicants to judge if their supply chain model can support those costs.

The commercial viability of a harvesting enterprise will still depend on a common understanding of requirements between regulators and industry – this means clear, predictable expectations on what is acceptable and what is not. Regulators should give a clear framework of expectations and costs of management and monitoring.

We should follow the approach taken in Norway, where harvesting has been handled sustainably for 40 years. This involves harvesting in sectors and leaving fallow areas to allow regeneration. We should operate a 5 year harvesting cycle. Lease areas should be assigned to single operators.

Harvesting reduces the kelp beds and has an impact on associated biota. While kelp itself can recover in 4 years or so, full recovery of biota levels takes a bit longer.

We should follow the process for an EIA, including full constraints analysis for each proposed area, even where this is not required by regulations.

There are possible conflicts with other stakeholders including fisheries, tourism, fish farms, and marine renewables which need to be considered. However, most present commercial fishing activities are unlikely to be directly affected as mobile gears are not normally deployed in kelp beds, but potting could be affected in some locations if creels are deployed for lobsters in the kelp beds.

The issue of potential impacts on commercial fish stocks is likely to be of concern to stakeholders but currently, scientific evidence does not clearly demonstrate either certain negative impacts from kelp harvesting on fish stocks, or no measureable impact from harvesting activities on stocks. It is likely additional research is required to ascertain exactly what the consequences of harvesting on fish stocks would be. This is a complex task and the report recognises that this may be beyond the capacity of the licence holder.

Attention should be paid early on in the process to ensuring the full benefits of any activity are communicated to the local community stakeholders, possibly with direct benefits agreed.

*Laminaria hyperborea* is not presently cultivated in Scotland, and although experiments are being undertaken in this area, cultivation cannot at present be regarded as an alternative replacement to wild harvesting with respect to providing stocks of kelp to support large scale industry.

Here is a link to the full report.

<http://www.hie.co.uk/common/handlers/download-document.ashx?id=0336008d-db41-4b61-a9bd-6bfcbd31c876>

**Greg Allan**

Copy List:	For Action	For Comments	For Information		
			Portfolio Interest	Constit Interest	General Awareness

Director of Marine Scotland Allan Gibb Helena Gray Mike Palmer David Pratt Paul Haddon Mike Bland Matt Gubbins David Mallon Jim Watson Kate Higgins – SPAD David Miller - SPAD Communications Rural Economy & Environment Communications Greener	
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