

## Mara Seaweed Ltd

### St Andrews Bay Seaweed Farm Scotland's National Marine Plan – General Planning Principles



#### Details

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#### Updates

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## Scotland's National Marine Plan – General Planning Principles

The Scottish Government supports the sustainable growth of the seaweed cultivation sector as a means to diversify the aquaculture sector. Mara Seaweed Ltd has studied Scotland's National Marine Plan and has reviewed the General Planning Principles. Below is their understanding of those principles.

**GEN 1 General planning principle:** There is a presumption in favour of sustainable development and use of the marine environment when consistent with the policies and objectives of this Plan.

**Mara Response** – Seaweed Cultivation, although a globally well-developed industry is only an emerging activity in Scotland with only a few small to medium farms in operation. Seaweed Cultivation has the potential to offer an organic and environmentally regenerative additional industry to the Scottish coastal and rural economy, not a replacement of already hard-pressed sectors. The proposed site of this farm has been chosen with care to ensure the smallest impact on other users of the marine environment. The proposed Seaweed Farm will be constructed from corrosion free, low maintenance materials, will have a light if not negligible possible impact on the environment. Seaweed requires only sunlight as an input and produces no waste output. This is perfectly in line with the aim of sustainable development of the planning principles.

**GEN 2 Economic benefit:** Sustainable development and use which provides economic benefit to Scottish communities is encouraged when consistent with the objectives and policies of this Plan.

**Mara Response** –

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**GEN 3 Social benefit:** Sustainable development and use which provides social benefits is encouraged when consistent with the objectives and policies of this Plan.

**Mara Response** – Mara will recruit from the local community to use the existing seamanship skills, vessels and harbours of the Fife coast. Seaweed Cultivation is a winter crop and may give a valuable additional income to small vessels, to visit the site, take samples and monitor the crop growth on calm days in a period of the year where their creels may remain ashore due to uncertain weather patterns, or fit in with fishing operations to haul what creels they have laid. This may provide enough of a boost to some local boats who would otherwise struggle. This will allow the retention of local skills and provide a future working harmony between the traditional creel activity in the area and this new additional marine industry. At each end of this is the deployment of seaweed line (Oct/Nov) and (Jan/Feb) and the harvesting of the matured seaweed plants (late Mar to late May). This may provide seasonal employment for individuals, vessels and harbours alike, with quite intense vessel and shoreside activity required.

At a time of pressure on Scotland's coastal and fishing communities, whether driven by political or environmental change or from spiralling costs of doing business, Mara anticipates that this demand for skilled, local labour will contribute to safeguarding the character and skills maintained over the generations by these seafaring communities.

**GEN 4 Co-existence:** Proposals which enable coexistence with other development sectors and activities within the Scottish marine area are encouraged in planning and decision making processes, when consistent with policies and objectives of this Plan.

**Mara Response** – As the first major aquaculture site on the East Coast of Scotland, Mara is aware that this will be a new experience to Statutory Bodies and Stakeholders alike. Mara has been closely consulting with all the diverse stakeholder groups from the earliest concept phases of this project. The proposed site in St Andrews Bay was chosen for this Seaweed Cultivation farm project as it is away from rocky reefs and muddy seabed, the favoured location for lobster and nephrop creel and trawl fisheries. It is far enough from shore to lessen the aesthetic impact of the Fife coast as well as being at a distance beyond the usual travel of pleasure craft, windsurfers and other watersports. The transit lanes from the major port of Dundee to construct and service new windfarms being built off the Firth of Forth to the south are clear to the east of the site. The site will be marked by flashing yellow special marks at its outer edges or any other special arrangement to be considered by the NLB and MCGA in this application process. The site is within reach of the ports and harbours of the East Neuk of Fife and Mara intend to use the crews, vessels and shore facilities to operate their proposed farm.

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As stated elsewhere in this document, this will bring economic and social benefits to the communities of the area.

**GEN 5 Climate change:** Marine planners and decision makers must act in the way best calculated to mitigate, and adapt to, climate change.

**Mara Response** – Seaweed Cultivation only requires clean seawater and sunshine to produce the crop; absorbing CO<sub>2</sub> in the growing process at a rate that far exceeds land plants; growing at up to 50cms a day from January – June when it is harvested. As such there is little more required beyond the seeding at the beginning and harvesting at the end that require fossil fuels. There are no feed or chemical treatment inputs throughout the process. As the crop is grown in seawater there are no requirements for fresh water during this phase. To that end it is one of very few truly sustainable food sources, even if grown and consumed in high volumes.

The potential role for seaweed as a key component in combatting or mitigating climate change is increasingly being studied and understood and is highly significant. As one of the fastest growing crops on the planet seaweed takes both carbon and nitrates out of the water. By removing nitrates seaweed can act to deacidify our oceans, and some portion of the seaweed (estimates are in the range of 30%) of the biomass will break away from the seaweed over its growing cycle and eventually fall to the seabed sequestering the carbon it has captured.

Mara's first intent is to use seaweed as a food; here it has a further carbon mitigation role by replacing in whole or in part meat and intensively land grown crops on the plate, removing the proportion of carbon emissions in the meal that would otherwise have been present. Other sustainable uses of seaweed being studied or implemented include reduction of methane emissions when used in cattle feed, use in replacing plastic with biopolymers and specifically used in bioremediation of certain marine habitats.

Mara has a program of electrification of their vehicles and already have electric cars. This will extend to electric vans for movement of harvest and equipment from shore to processing site. New processing facilities have been set up in Glenrothes, Fife, to be nearer the farm site and so reduce road miles from shorebase. These mitigation and adaptation measures will be monitored and calculated as part of Mara's ongoing internal Quality Control Management System.

**GEN 6 Historic environment:** Development and use of the marine environment should protect and, where appropriate, enhance heritage assets in a manner proportionate to their significance.

**Mara Response** – As the bulk of the proposed Seaweed Cultivation farm infrastructure will be subsurface, visual impacts will be kept to an absolute minimum. With only short periods of deployment and harvesting at the sites, we expect the lowest impacts possible will be felt on



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the local environment. One of the closest landfall shore facilities will be St Andrews Harbour. The harbour is of mediaeval origin, rebuilt in stone 1559, further rebuilding through the centuries and destruction from storms. Lock gates to channel river flow through the harbour, aiding the flushing of sediment and controlling flood water were added as early as 1787. New concrete piers were built in the early 1900s and new lock gates installed after severe damage to the harbour in a 1902 storm. In recent years, new damage to the lock gates has seen the encroachment of silting of the harbour entrance. Mara, as a new user to the harbour will share the facilities with existing harbour users and assist in its preservation and maintenance through harbour dues and membership of the Harbour Trust.

**GEN 7 Landscape/seascape:** Marine planners and decision makers should ensure that development and use of the marine environment take seascape, landscape and visual impacts into account.

**Mara Response** – The proposed Seaweed Farm will have the lowest possible profile and will be situated in remote waters away from the coast. Visual impact is kept to a minimum by the Seaweed Farm's low profile. Ironically the most visible thing will be Special Mark buoys placed to clearly mark the outer limits of the site for mariners.

**GEN 8 Coastal process and flooding:** Developments and activities in the marine environment should be resilient to coastal change and flooding, and not have unacceptable adverse impact on coastal processes or contribute to coastal flooding.

**Mara Response** – These proposed developments will have no impact on the Coastal Processes or Flooding. The site is situated 6nm offshore from the coast and in light shifting sand seabed. The anchors holding the farm will not block the movement of sand from its natural course. The servicing of the farm site will be from an established harbour and no new coastal developments will be made for the farm.

**GEN 9 Natural heritage:** Development and use of the marine environment must:

- (a) Comply with legal requirements for protected areas and protected species.
- (b) Not result in significant impact on the national status of Priority Marine Features.
- (c) Protect and, where appropriate, enhance the health of the marine area.

**Mara Response** – The area of the proposed Seaweed Farm lies in the 'Outer Firth of Forth and St Andrews Bay Complex SPA' (Special Protected Area) - <https://sitelink.nature.scot/site/10478>. The JNCC (Joint Nature Conservation Committee) comments "The Outer Firth of Forth and St Andrews Bay Complex is an extensive SPA off the south-east coast of Scotland. It stretches from Arbroath in the North to St Abb's Head in the South and encompasses the Firth of Forth, the outer Firth of Tay and St Andrews Bay. The waters in this SPA attract one of the largest and most diverse marine bird concentrations in Scotland and the site is classified for the protection of 21 seabird and waterbird species.



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The farm site also lies close to (5nm), but not within, the Firth of Tay and Eden Estuary SPA - <https://sitelink.nature.scot/site/8501> and the Firth of Tay and Eden Estuary SAC (Special Area of Conservation) - <https://sitelink.nature.scot/site/8257>. These designations protect the estuarine habitats of shifting sandbanks, mudflats and reedbeds that are home to large numbers of resident, passage and seasonal nesting or roosting wetland birds and home to harbour seals. The Eden Estuary is also a Local Nature Reserve.

The Abertay Sands, a sandy spit that is formed at the southern entrance to the Firth of Tay from Tentsmuir Point is a Geological Conservation Review Site and a National Nature Reserve - <https://sitelink.nature.scot/site/9203>. None of Mara's activities will affect these designations.

### (a) Comply with legal requirements for protected areas and protected species.

Mara will endeavour to comply morally and legally with all legislation set to protect the many protected status habitats and species in the area. Mara believe the seaweed industry will be a truly organic, regenerative industry and will work closely with Nature Scot and others to ensure they achieve this.

### (b) Not result in significant impact on the national status of Priority Marine Features.

The proposed farm site is clear of Rocky Reefs, which is a priority marine feature and a target area for creel fisheries. There are no biogenic reefs recorded at the site (eg *Sabellaria spinulosa*) with the substrate fine shifting sand. EUNIS habitat classification A5.1 sublittoral coarse sand & A5.2 sublittoral sand (depending on the detail level of the map): BGS Offshore, Marine Sediment, Sand – anchors and subsurface structures will be set on soft sediment, clear of any rocky reefs. A helical screw anchor system will require shorter lines, have a smaller area footprint and less seabed than conventional heavy block anchor systems.

### (c) Protect and, where appropriate, enhance the health of the marine area.

Seaweed Cultivation requires only sunlight as an input. We will use no chemicals and any litter/debris will be taken ashore and disposed of responsibly.

**GEN 10 Invasive non-native species:** Opportunities to reduce the introduction of invasive non-native species to a minimum or proactively improve the practice of existing activity should be taken when decisions are being made.

**Mara Response** – All vessels, equipment and personnel will strictly follow current Biosecurity plans already in place. The Seaweed species being cultivated are native and are found locally on rocky foreshores and harbours. Seaweed seed collected for cultivation will be collected from close to the farm site. Culturing of the seaweed seed will be done in clinical laboratory conditions.

**GEN 11 Marine litter:** Developers, users and those accessing the marine environment must take measures to address marine litter where appropriate. Reduction of litter must be taken into account by decision makers.



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**Mara Response** – Any waste generated from the project will be disposed of ashore through local, certified commercial waste disposal. All ropes and equipment will be stored ashore during fallow periods of the farm (May to Oct). And all cleaning of ropes and equipment will be done ashore. There are no Special Waste requirements envisaged.

**GEN 12 Water quality and resource:** Developments and activities should not result in a deterioration of the quality of waters to which the Water Framework Directive, Marine Strategy Framework Directive or other related Directives apply.

**Mara Response** – There are no fresh water needs or waste water created from the seaweed cultivation. The growing seaweed at the proposed farm site will take up nutrients, especially nitrates from the water moving through the site. This will improve the water quality in the coastal zone by reducing nutrient loading that can lead to algal blooms in summer.

**GEN 13 Noise:** Development and use in the marine environment should avoid significant adverse effects of man-made noise and vibration, especially on species sensitive to such effects.

**Mara Response** – We envisage no additional noise pollution from this project. There will be no generator platforms left on the proposed farm site. The marker lights for navigation are solar/battery powered. The vessel activity will be kept to a minimum and be an insignificant increase to existing vessel movements. The landing of harvest into local ports will use existing facilities and blend in with the expected noises of working harbours.

**GEN 14 Air quality:** Development and use of the marine environment should not result in the deterioration of air quality and should not breach any statutory air quality limits.

**Mara Response** – We envisage no impact on local air quality from this project.

**GEN 15 Planning alignment A:** Marine and terrestrial plans should align to support marine and land-based components required by development and seek to facilitate appropriate access to the shore and sea.

**Mara Response** – Algal Farms do not require planning permission under T&C Planning as finfish and shellfish aquaculture does. Mara will be using existing shore infrastructure to land harvests and service the site, so no additional development is needed at the shore side. The deployment and harvest season of the proposed seaweed farm is short (4 to 6 weeks in total) and will require only a few vehicles to move the harvest on to processing, posing a low additional burden to local roads and residents.

**GEN 16 Planning alignment B:** Marine plans should align and comply where possible with other statutory plans and should consider objectives and policies of relevant non-statutory plans where appropriate to do so.

**Mara Response** – As GEN 15 above.



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**GEN 17 Fairness:** All marine interests will be treated with fairness and in a transparent manner when decisions are being made in the marine environment.

**Mara Response** – Seaweed Cultivation is a lower impact on other marine users than the traditional shellfish and finfish cultivation. With no feed requirements there will be few vessel movements. With no feed or faecal matter falling into the surrounding water and onto the seabed, no effects beyond the farm site will be felt. The only impact will be the seabed area lost to the farm footprint itself. Mara has chosen the proposed site with the lowest impact on existing fisheries in mind. It has undertaken an extensive discussion with as many Stakeholders as could be reached to discuss the potential impacts of the site chosen. All Statutory Consultees and Stakeholders have been given due notice of the plans through the appropriate Pre-Application Process set out by Marine Scotland. All the contacts made and their responses given (and any mitigation taken) are detailed in a Pre-Application Report submitted along with this document and others as part of the Application process.

**GEN 18 Engagement:** Early and effective engagement should be undertaken with the general public and all interested stakeholders to facilitate planning and consenting processes.

**Mara Response** – Local engagement has been ongoing for over a year as 2 previous sites were discussed and abandoned by Mara at the request of local fishermen as they posed to create a loss of good fishing ground. The proposed site now chosen has been advertised across the Fife area through local press, emails, posters and face to face meeting from the very beginning of the Pre-Application Process. Mara are very conscious of the pressures faced by the local/inshore fisheries and wish to engage with them throughout this licensing process and beyond, into operation of the site. Mara see the inshore vessels, their crews and the local harbours as key to the successful operation of their farm site. Mara are part of the Fife Community and as such seek Community stakeholder support throughout.

**GEN 19 Sound evidence:** Decision making in the marine environment will be based on sound scientific and socio-economic evidence.

**Mara Response** – Although seaweed cultivation is in its infancy in Scotland, the structures and techniques used at the Mara site are proven versions of commercial scale farms installed at other commercial operators' sites and Scottish Association for Marine Science (SAMS) over the last 7 years on the West Coast of Scotland, mainly in Argyll. SAMS were instrumental in producing Feasibility Studies for the wider seaweed cultivation industry and will be retained as partners and be consulted for their advanced scientific knowledge in this emerging field. Mara are close collaborators with other seaweed cultivation companies and regularly exchange ideas and improvements with them. This cooperative behaviour is a driving force of this sector. Mara is a well-established firm that has been sustainably harvesting seaweed from the Fife Coast for 13 years and processing the harvest into a well known and respected product.



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**GEN 20 Adaptive management:** Adaptive management practices should take account of new data and information in decision making, informing future decisions and future iterations of policy.

**Mara Response** – Robust management of the project will be undertaken by staff with decades of experience of the seaweed industry. Close links with research and development from local and international sources are followed to ensure the latest ideas are considered when deploying, harvesting or processing seaweeds. New equipment and techniques are regularly researched to increase efficiency and safety in Mara's working practices.

**GEN 21 Cumulative impacts:** Cumulative impacts affecting the ecosystem of the marine plan area should be addressed in decision making and plan implementation.

**Mara Response** – Seaweed Cultivation is unique in this area. There will be no cumulative negative effects of this project. The consumption of nitrates in the water by the growing seaweed are an ecosystem benefit to the local environment.