

Written submission from Subsea Cables UK

Submission on behalf of Subsea Cables UK, the not-for-profit industry body for subsea cables in the UK, and should be attributed to Subsea Cables UK.

The author is Tony Fisk, Chair of the Technical & Regulatory Sub Group and a subsea cable consultant as well as Commercial Director of Pelagian Ltd, a specialist consultancy to the subsea cable industry worldwide.

Currently Marine Planning is top of the agenda for SCUk and for this Sub Group which is composed of members of SCUk drawn from all areas.

Further to very useful, productive and open discussions with Marine Scotland in regard to the Scottish National Marine Plan preparation and the subsea cables content therein, we (SCUK) feel there are still some modest improvements that could be made to the text in order to increase clarity and usefulness to the reader.

The submission shows the changes we would propose for the consideration of the committee.

The key for us is to end up with text that supports both the sector and the Scottish plan while remaining aligned for all UK waters to avoid disparity across the boundaries.

We have opted to focus only on the chapter directly relevant to us, to ensure that information and guidance given, and the direction of this section of the Marine plan is in line with current industry best practice and reflects the most likely future direction. This is in order to provide a positive and appropriately controlled subsea cable sector for Scotland and the industry in the years ahead.

It is important that the Marine plan achieves an appropriate balance across seabed sector users, and we feel that with these changes implemented, the cables chapter will achieve that goal. As the text stands, there is greater risk of the influence of other sectors resulting in a cables chapter that constrains cables while providing a lower level of support for the sector compared to other chapters in the plan.

We are looking for successful co-existence rather than trying push other sectors back, which is why we have limited our feedback to this chapter of the plan. We trust MS to balance matters across the plan rather than us trying to dictate to other sectors in the chapters relevant to them.

We trust that our feedback will be seen in this positive perspective and its intentions will be well received.

Submarine Cables

Objectives and policies for this sector should be read subject to those set out in Chapters 3 and 4 of this Plan. It is recognised that not all of the objectives can necessarily be achieved directly through the marine planning system, but they are considered important context for planning and decision making.

Objectives

- Protect submarine cables whilst achieving successful seabed user co-existence.
- Achieve the highest possible quality and safety standards and reduce risks to all seabed users and the marine environment.
- Support the development of a Digital Fibre Network, connecting Scotland's rural and island communities and contributing to world-class connectivity across Scotland.
- Safeguard and promote the global communications network.
- Support the generation, distribution and optimisation of electricity from traditional and renewable sources to Scotland, UK and beyond.

Key references

- Submarine cables and offshore renewable energy installations proximity study.
- Subsea cables Industry Best Practice.
- Scotland's Marine Atlas: Information for the National Marine Plan.
- Chapter 5: Productive / Telecommunication Cables Pages 184 – 185.
- and Renewable Energy and Power Cables sections Pages 164 – 165.
- National Marine Plan interactive (NMPi). Productive / Renewable Energy and Cables section.

Part 1: Background and context

Submarine cables are vital to the world's power, information and international telecommunications infrastructure, creating offshore power grid, interconnectors, and communication and broadband provisions. The internet revolution and e-commerce has seen unprecedented growth in international telecommunication cables whilst the development of marine and offshore renewables and the drive for improved interconnection has increased the need to use the marine area.

Over 95% of international telecommunication is by submarine cable and approximately 40% of all the UK's active international cables are on the Scottish seabed¹. An international cable network passes north and south of Shetland connecting North America to Europe. These cables do not make a landfall in Scotland. Other cables connect mainland Scotland to Shetland, Orkney, Northern Ireland, the Faroe Islands and oil and gas fields (Map 12).

¹ Scotland's Marine Atlas: Information for the National Marine Plan. 2011. Chapter 5
<http://www.scotland.gov.uk/Publications/2011/03/16182005/76>

Submarine renewable power cables are subject to licensing controls anywhere within 0-200 nautical miles. International power interconnectors and international telecommunication cables are also subject to licensing controls. Cables are laid on the seabed and are routinely buried, where the possibility of impact by other activities exists and where seabed conditions are suitable, i.e. where there may be shallow gradients and softer sediments. For telecoms cables, this cable burial is carried out down to water depths of 1500m or more for protection and safety purposes. Renewable power export and array cables are typically in water depths of no more than 50m to 60m currently to though this may increase in the future. However not all cables can be buried or should be buried for a variety of reasons

Part 2: Key issues for marine planning

Supporting economically productive activities

Submarine power and telecommunications cables are of national and international economic importance and support the growth sectors of energy and creative industries (as part of digital), identified in the Government's Economic Strategy.

Growth of the marine and offshore renewable energy sector will increase demand for upgrade and improvements to the power grid. A strategic plan for grid will be developed by the Scottish Government to ensure sustainable development of submarine power cables to support the offshore wind and offshore renewables sector.

The sector also underpins the Scottish Government's digital strategy – Scotland's Digital Future² which will see rural and island communities in the Highlands and Islands benefit from the roll out of high-speed broadband. Such investment in broadband infrastructure as part of the digital strategy is intended to bring economic and social benefits to many isolated communities and encourage growth in related jobs.

Interactions with other users

Growth in the cable industry and other marine sectors increases the risk of potential damage to cables and further interactions with other users, for example competition for space with oil and gas pipelines, fishing and shipping. A joined-up approach to development and activity will be needed to protect cables whilst promoting co-existence. Key interactions of relevance to marine planning include:

Marine and Offshore Renewables: Interconnector and electricity power cables are integral to the successful delivery of offshore and marine renewable energy. A planned approach to the development of grid will provide the most efficient connections taking account of environmental and economic factors and other users.

² Scotland's Digital Future: A Strategy for Scotland. Scottish Government. 2011. <http://www.scotland.gov.uk/Publications/2011/03/04162416/0>

[Suggested changes in the paragraph below in bold and scored out text]

Fishing Activity: There is a risk of adverse interaction between seabed cables and fishing activity and this increases as activity levels rise. Submarine cables can cause **localised** obstruction to fishing practices **in some circumstances and while** fouling a cable can be extremely hazardous to fishing vessels **and the cable itself, whilst** ~~and~~ Damage to submarine cables is expensive to repair and can cause disruption to power distribution and international telecommunications at a national **and international** level. Submarine cables should be buried, where feasible, or suitably protected, to reduce conflict with other users and prevent damage to cables. **Some cables may need to be laid without any burial or additional protection in some instances. Cable burial is a case by case consideration due to the variables that influence it.**

Engagement with affected stakeholders is supported to ensure appropriate awareness of the risks and consequences.

The fishing sector can gain access to accurate and comprehensive information on NMPi on the majority of submarine cables within UK waters held by Kingfisher under the KIS- ORCA³ (Kingfisher Information Service – Offshore Renewable & Cable Awareness) project. This project provides free cable awareness charts; electronic route position lists and digital information for chart plotters to fishing vessels and legitimate marine stakeholders. Key fishing organisations and stakeholders are working with the sector to promote this project and assist with the local distribution of the data.

Living within environmental limits

Cable installation and operation of submarine cables, if suitably routed, cause minimal impacts on the marine historic and natural environment. Cable installation projects are subjected to considerable route engineering and conflicts mitigation from the outset, to minimise the risks in regard to sensitive habitats and other similar environmental constraints. Other potential impacts include:

[Suggested changes in the bullet point below in bold]

- During cable installation, **temporary, localised and very small** sediment plumes may be generated **(generally much smaller effect than sediment plumes generated by winter storms in shallow waters for example)**. Potential risks to sensitive species can be further mitigated by planning the timing and direction of installation operations to minimise concerns.
- Electromagnetic fields especially those from High Voltage Direct Current (HVDC) electrical power transmission cables may have some effects on electro- and magneto-sensitive species. Although research on potential impacts is ongoing, the current indication is effects could be minimal. High Voltage Alternating Current (HVAC) cables, where the fields are constantly changing, are thought to pose lower concerns. The potential for

³ Kingfisher Information Service – Offshore Renewable & Cable Awareness <http://www.kis-orca.eu/>

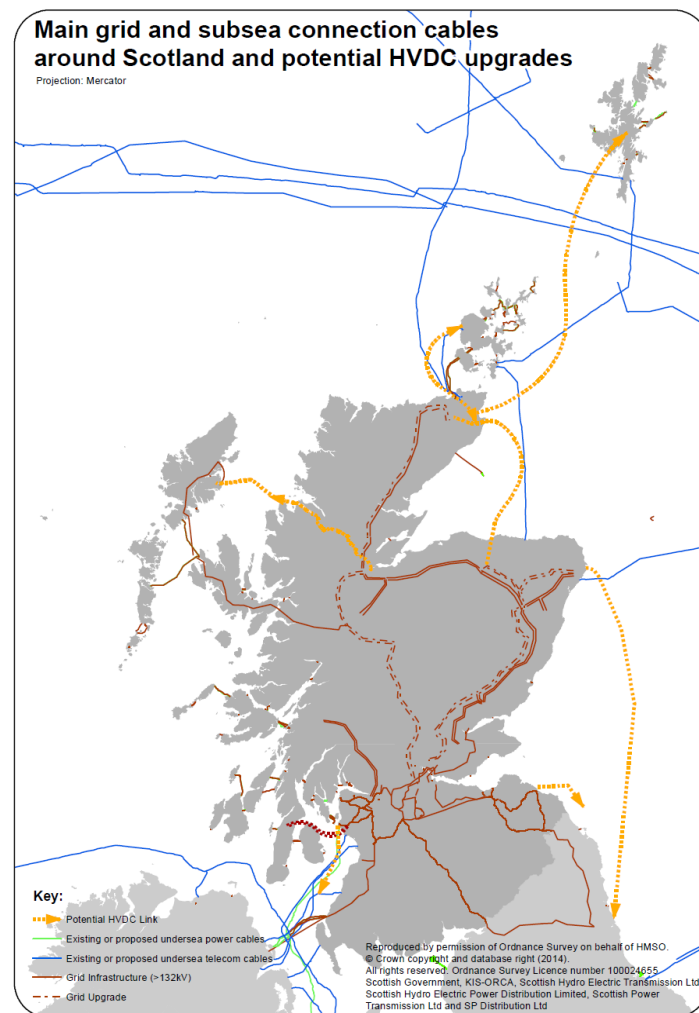
electromagnetic field impact is significantly reduced through burial of cables and further mitigated by modern cable design.

CLIMATE CHANGE

[Suggested changes in the paragraph below in bold and scored out text]

Climate change and associated sea level rise is expected to increase the incidences of coastal flooding and erosion which may have limited implications for the landfall of cables in the near-term. Changes in sedimentation and increase in currents due to climate change may change depositional regimes leading to **potentially increased risks of exposure of previously** ~~risks of exposure of previously~~ **potential for change in the condition of initially** buried cables.

Cable system life is around 25 years for telecommunications and approximately 50 years for power cables. Potential changes in storminess as a result of climate change may require more resilient infrastructure. However, prudent cable system planning and engineering normally mitigates these risks wherever possible at the project outset, as these factors are already a part of the standard consideration applied to cable planning. Risks are more likely to occur where the landing site for a cable is specifically constrained to a less-favourable site for other overriding reasons.



Part 3: Marine planning policies

[Suggested changes in the paragraph below in bold and scored out text]

CABLES 1: Cable and **network** owners should engage with decision makers at the early planning stage to notify of any intention to lay, ~~repair~~ or replace cables before routes are selected and agreed. When making proposals, cable and network owners and marine users should evidence that they have taken a joined-up approach to development and activity to minimise impacts, where possible, on the marine historic and natural environment, the assets, infrastructures and other users. Appropriate and proportionate environmental consideration and risk assessments should be provided which may include cable protection measures and mitigation plans. **Cable repair activity is covered by existing national and international legislation and generally an emergency response to cable damage undertaken at short notice.**

CABLES 2: The following factors will be taken into account on a case by case basis when reaching decisions regarding submarine cable development and activities:

- Cables should be suitably routed to provide sufficient requirements for installation and cable protection.
- New cables should implement methods to minimise impacts on the environment, seabed and other users, where operationally possible and in accordance with relevant industry practice.
- Cables should be buried to maximise protection where there are safety or seabed stability risks and to reduce conflict with other marine users and to protect the assets and infrastructure.
- Where burial is demonstrated not to be feasible, cables may be suitably protected through recognised and approved measures (such as rock or mattress placement or cable armouring) where practicable and cost-effective and as risk assessment direct.
- Consideration of the need to reinstate the seabed, undertake post-lay surveys and monitoring and carry out remedial action where required.

CABLES 3: A risk-based approach should be applied by network owners and decision makers to the removal of redundant submarine cables, with consideration given to cables being left in situ where this would minimise impacts on the marine historic and natural environment and other users.

CABLES 4: When selecting locations for land-fall of power and telecommunications equipment and cabling, developers and decision makers should consider the policies pertaining to flooding and coastal protection in Chapter 4, and align with those in Scottish Planning Policy and Local Development Plans.

Regional Policy:

Regional marine plans should consider identifying suitable areas for land fall of submarine cables and integrate with spatial priorities for submarine cables within Local Development Plans.

Part 4: The future

Submarine cables are an important part of our national infrastructure and will be vital for the foreseeable future.

The Scottish Government supports the development of network infrastructure in the right places. New research and strategies will be undertaken to improve knowledge of the interactions between submarine cables and other activities. For example, as lead partner in the Irish-Scottish Links on Energy Study (alongside authorities in Ireland and Northern Ireland), the Scottish Government will seek to develop a spatial plan for an offshore electricity network that both supports development and ensures that impacts on other activities are fully understood and minimised. This process will include the opportunities for all such sectors to put forward views and information as part of a robust consultation.