

Written evidence submitted by the European Marine Energy Centre Limited (EMEC) (SPF0020)

Scotland and the Shared Prosperity Fund

Executive Summary

EMEC welcomes the opportunity to respond to this timely consultation. By way of summary:

- EMEC has extensive experience in the delivery of the ERDF's Interreg projects. We lead **5 Interreg projects** with a combined budget of **€71M** under our management.
- We have developed sophisticated project management tools to efficiently deliver this work programme. EMEC's FORESEA project was **recognised for excellence by the European Commission** at its 2019 EU Sustainable Energy Week awards.
- In the last two years, **81% of funding** secured by EMEC for R&D (primarily focused on "Demonstration") has been **inward investment** from EU/international programmes, with over £7.3M from competitively won ERDF programmes.
- The key focus of ERDF is 'experimentation' and 'market uptake'. This has led us to push ocean energy and **diversify** into new arenas such as green hydrogen and energy systems, whilst building international networks and exporting our expertise globally.
- In replacement of ERDF, there is an opportunity through the UKSPF to **'level-up'** regions across the UK. This includes pushing the UK's R&D knowledge base towards market uptake. EMEC's economic impact is a prime example of the potential to level up coastal and peripheral communities.
- The **Interreg** programme has been particularly successful for EMEC, making up **84%, or £17.4M** of our £21M EU-awarded funds between 2016-2020. The value of Interreg also lay in its drive for **cross-border collaboration**. Following the UK decision not to participate, there is a risk that the collaborative partnerships formed will be lost, as will the shared learnings, economies of scale and supply chain networks.
- Without **clarity** around UKSPF objectives, fund management and programmes, organisations will find it extremely **complex to plan** for future development objectives. It will be particularly challenging for IRT (Innovation, Research and Technology) organisations, such as EMEC, given the risk-prone, uncertain nature of our work.
- Learning from ERDF and specifically, Interreg funds, there is an opportunity for the UKSPF to bolster **regional-focused programmes** playing to **sectoral strengths**; driving **more demonstration**, or market uptake to improve the UK's ability to **commercialise** its research leadership; introduce flexibility and coherence with private sector finance structures; and develop programmes which encourage and reap in benefits of cross-border collaboration.
- The **EMEC case study**, spanning marine energy, green hydrogen and energy systems sectors within the R&D landscape, clearly demonstrates the value of regionally managed, ERDF funding over the last decade. Our case study is particularly well-placed to illustrate the value of grant funding in our sectors given the current climate of **green recovery, decarbonisation** and **levelling-up** objectives.

My industry colleagues and I would welcome the opportunity to meet you and Committee colleagues to discuss our views further. In the meantime, should you have any questions, please do not hesitate to contact Neil Kermode, Managing Director.

Introduction

EMEC was founded in 2003 in Orkney, Scotland and is the only accredited wave and tidal test centre for marine renewable energy in the world. More marine energy devices have been tested at EMEC than at any other single site in the world: EMEC has hosted 20 wave and tidal energy clients (with 32 marine energy devices) spanning 11 countries.

EMEC operations have developed significantly through the years as we've gained unprecedented experience in demonstrating ocean energy technologies. Today we're also pioneering the development of a green hydrogen economy in Orkney, having set up a hydrogen production plant onshore in 2016, next to our tidal energy substation. Since then, we continue to be involved in a portfolio of green hydrogen projects, from aviation to distilling; and have additionally expanded into wider clean energy systems, including hosting Microsoft's subsea data centre at our facilities, and leading the pioneering [ReFLEX Orkney project](#) to develop an integrated energy system in Orkney.

1. Context – The value of EU funding: EMEC Case Study

1.1 EMEC development and project expansion through EU funding

- 1.1.1 EMEC welcomes the announcements made over the last year regarding the UK Shared Prosperity Fund (UKSPF), particularly given the instrumental role that EU funding has had in our development, and the tangible economic and industry impacts of this funding to date.
- 1.1.2 Established in 2003, EMEC is a not-for-profit company limited by guarantee, and we have been financially independent since 2011. £36M was invested over 5 phases of development in establishing our facilities, from a range of funders including ERDF. To date, EMEC has generated £306M total GVA contribution to the UK economy.
- 1.1.3 More recently, since EMEC began recording external funding in 2016, approximately 62% of external project funding has been EU grant funding, totalling £21M. In contrast, UK government and/or grant funding in the same 2016-2020 period totalled 22% or, approximately £7.5M (Figure 1). These figures clearly illustrate the invaluable role that EU grant funding has played in the socioeconomic impact of EMEC across the UK.

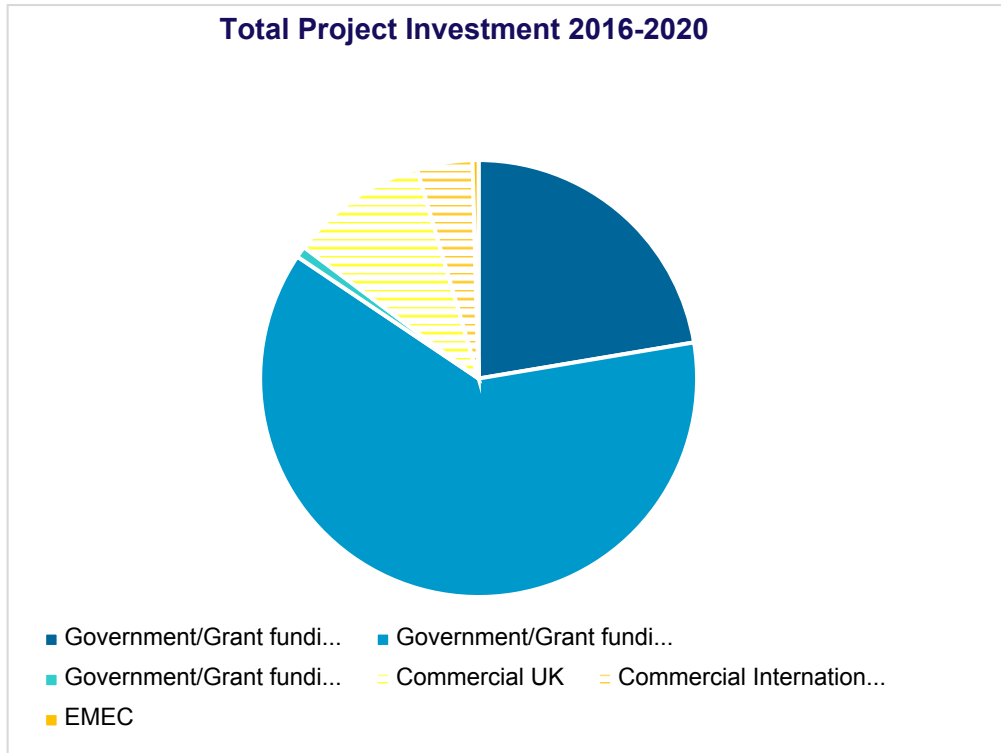


Figure 1. Total Project Investment, 2016-2020

- 1.1.4 EU grant funding through programmes such as Interreg, contained within ERDF, or Horizon 2020 have been determinant in our ability to attract an array of technology developers onto our test site and provide them with a variety of device development services, from testing and monitoring to power performance assessments, amongst others (in points 1.7 – 1.8 below). Interreg funding has also underpinned EMEC’s world-leading work on the development of green hydrogen technologies in the UK. These opportunities have not only had direct impact on sectoral and local economic development but are also driving the entire industry to the next level.
- 1.1.5 In this respect, Orbital’s O2 supply chain map (Figure 2) is illustrative of the strength of our national marine energy supply chain, and its spread across all UK regions, aligned with UK levelling up objectives. The industry has, up until now, grown largely due to the ongoing support from ERDF (and Horizon 2020). We suggest that the UKSPF evaluate and integrate the continuation of these tangible outcomes into its objectives.

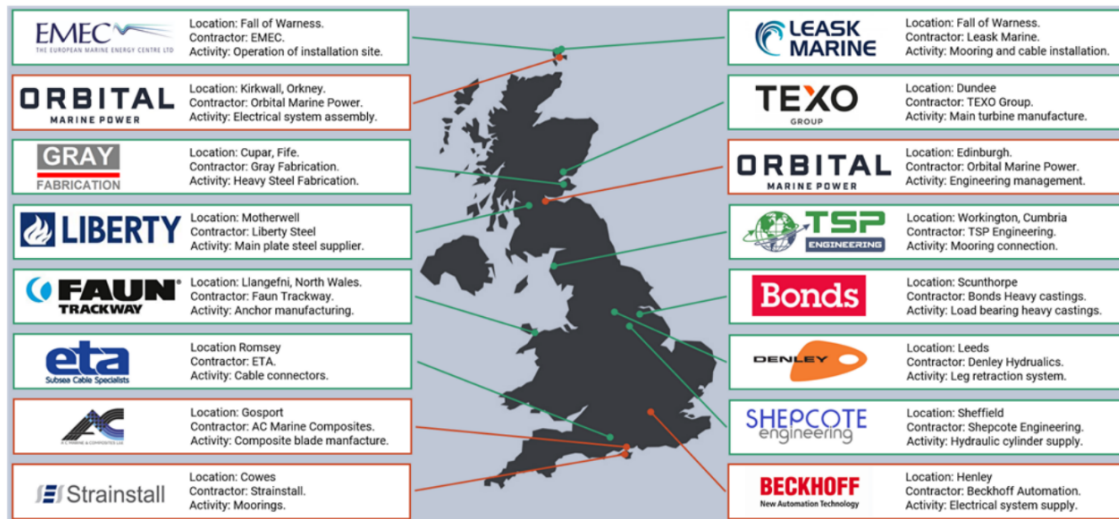


Figure 2. Orbital Marine Power O2 supply chain map¹

1.1.6 Interreg has played a particularly important role in our ability to grow with tangible local and national impacts, and especially at international scale, given the programme’s cross-border collaboration focus. The programme made up 84%, or £17.4M of the £21M EU- awarded funds that EMEC successfully won between 2016-2020.

1.1.7 We have noticed the impact of such ERDF programmes clearly within our own organisation. Our International WaTERS network, for instance, a global network of open-water test sites set up by EMEC in 2013, gained unprecedented support and involvement through EMEC’s participation in, and leadership of the FORESEA and Ocean DEMO projects respectively. Thus, contributing to the creation of new partnerships, enhancing knowledge sharing and cross-industry collaboration, two crucial pillars of moving towards R&D commercialisation², as identified by the UK industry group, AIRTO.

- **FORESEA:** (Funding Ocean Renewable Energy through Strategic European Action) is an €11M Interreg North West Europe project, helping bring offshore renewable energy technologies to the market by providing free access to North-West Europe’s world-leading network of test centres. 30 technologies have successfully deployed at European test centres with FORESEA support. €74M of private finance was leveraged due to FORESEA.
- **Ocean DEMO:** The €13M programme builds on FORESEA to provide support to developers of marine renewable technologies, specifically targeting multi-machine ocean energy installations. This will allow developers to move closer to market by demonstrating their technologies at full commercial scale. To date, 30 developers in the pipeline are or will be supported by Ocean DEMO.

¹ <https://committees.parliament.uk/writtenevidence/19035/pdf/>

² <https://www.airto.co.uk/wp-content/uploads/2020/03/AIRTO-More-D-Position-Statement-31-MARCH-2020-web.pdf>

1.1.8 Moreover, ERDF programmes have enabled EMEC and other innovation organisations to act as SME ‘incubators’, offering developers at early TRL stages an opportunity to push research into demonstrable applications. These programmes have complementarity with SME uptake support through testing and demonstration programmes such as FORESEA and Ocean DEMO when at later TRL stages.

- [MEA](#): The Marine Energy Alliance (MEA) is a 4-year European Territorial Cooperation project with a total budget of €6 million, supported by Interreg North West Europe, who provide €3.6 million of ERDF funding. The aim of MEA is to progress the technical and commercial maturity level of early-stage (TRL 3 – 4) marine energy technology companies with the overall goal of reducing the risk of device failure.
- [OESA](#): Ocean Energy Scale-up Alliance (OESA) is a 3-year project with a total budget of €6.2M and is supported by the Interreg North Sea Region Programme through €3.1M of ERDF funding. The project aims to: develop, evaluate and promote a transnational scale-up offer; deploy four scaled-up ocean energy pilots and increase stakeholder engagement to optimise conditions for future deployments.

1.1.9 Furthermore, EU grant funding has had a critical role to play in our ability to diversify and bolster clean technologies such as green hydrogen, through demonstration projects that have pioneered forms of green hydrogen production and application, as well as the initial integration of energy system innovations into our portfolio.

- [ITEG](#): Integrating Tidal Energy to the European Grid (ITEG) will develop and validate an integrated tidal energy and hydrogen production solution for clean energy generation to be demonstrated in Orkney. It is a €12M Interreg project, led by EMEC. Additionally, ITEG sets out to drive down the cost of pre-commercial demonstration for ocean energy. Throughout the project, ITEG will aim to maintain 20 direct jobs and 40 indirect jobs, adopt 3 applied low carbon technologies, reduce GHG by an estimated 3000 tonnes, produce an additional capacity of 2MW of renewable energy and develop the cooperation of research institutions with 15 enterprises.

1.1.10 These projects have placed EMEC, Orkney, Scotland and the UK as a whole on the innovation map in the space of marine energy and green hydrogen, particularly across Europe and beyond. Hence, creating economic and commercial opportunities for partnerships, and socioeconomic development beyond specific projects.

1.2 EMEC: Economic impact at local and national levels with EU funding

1.2.1 For the past 17 years, EMEC has had tangible positive economic impact at local, regional and national levels. Since 2016 we have annually commissioned an external review of our cumulative impact. Our latest figures on funding sources and on local and national economic benefits clearly illustrate firstly, the tangible economic effects stemming from EMEC’s activity; and secondly, the key role that EU funding has had to play on our activity, and hence on driving these effects.

- 1.2.2 Figure 1 in the section above clearly depicts how the bulk of EMEC's funding has stemmed from EU grant and government funding, and hence so has our organisation's local and national socioeconomic impact.
- 1.2.3 The latest commissioned Economic Impact Assessment covered the financial years 2017/18, 2018/19 and EMEC's cumulative impact from 2003 to 2019. It was estimated that EMEC's total economic impacts (including operational plus wider economic impacts) had the following effect³:
- In the Orkney Islands, a cumulative benefit of £108.4M GVA, and 1,824 FTE job years (or, around 182 FTEs in Orkney⁴)
 - In the Highlands & Islands, £127.4M GVA and 2,153 FTE job years (215 FTEs)
 - In Scotland, £230M GVA and 3,479 FTE job years (348 FTEs)
 - In the UK, £306.3M GVA and 4,517 FTE job years (452 FTEs).
- 1.2.4 Through EMEC, ERDF funding has therefore been highly successful at delivering a **place-based regional development strategy**. The roles at EMEC are highly skilled, and as a result the average earnings per job at EMEC (£27,600) are 8% higher than the Orkney average (£25,600). Moreover, since 2003, UK cumulative supply chain spending impact to 2019 was £11.6M GVA and totalled 111 FTE job years.
- 1.2.5 These tangible, direct effects stem from funding available to EMEC incoming (primarily) from the EU; and directly drive core UK goals, including the provision of quality, skilled jobs in peripheral and island communities; particularly in net zero industries; and the development of UK supply chains in key decarbonisation sectors, to ensure UK competitiveness, export leadership and high local content.
- 1.2.6 Moreover, R&D, particularly "Demonstration" is a crucial pillar of the UK's objective to move away from being a "science superpower" to become a "science and innovation superpower" one whose innovation talent stays in the UK to commercially develop and exploit its research, something the UK has traditionally been poor at⁵. At EMEC, our core focus is R&D, and demonstration our essence. Between 2017 and 2019, 81% of our R&D funding was inward investment, with over £7.3 million from EU sources.

2. Announcements made by the UK Government in the 2020 Spending Review for the delivery of the Shared Prosperity Fund in Scotland

2.1 EMEC welcomes the announcements made by the UK government in the 2020 Spending Review for the delivery of the UKSPF, particularly the understanding that UK-wide funding will at least match current EU receipts.

2.2 However, increased clarity is required on how the funding will be administered, evaluated, shared across projects, industry areas and development priorities, and across

³ The report is available upon request.

⁴ Assuming that a permanent FTE lasts at least 10 years the total equivalent permanent jobs to date supported.

⁵ <https://www.airto.co.uk/wp-content/uploads/2020/03/AIRTO-More-D-Position-Statement-31-MARCH-2020-web.pdf>

regions and localities. Moreover, greater clarity over how programme funds will be managed is also required (Interreg's Joint Secretariat usually use less than 5% of the funds for management and the EU would put this out to tender, for instance).

- 2.3 The UK has the chance, with the creation of the UKSPF, to learn from the structure and management of ERDF programmes to build upon its successes, whilst improving and streamlining other characteristics. In EMEC's case study section above, we have highlighted the benefits of ERDF funding and different programmes; particularly, their socioeconomic impact across UK regions through their investment, in this case, in the marine energy industry; and their primary focus on cross-regional, national and transnational collaboration programmes.
- 2.4 Moving away from a 'soft policy' approach, in recent years Interreg has increasingly funded capital projects, which has had a positive impact on new market uptake, sectoral incubation and SME development. The UKSPF has an opportunity to play a key role in structuring local and regional economies by driving market uptake of new technologies to support innovative SMEs. To do so, we recommend the UKSPF learn from ERDF improvements by continuing to support capital projects.
- 2.5 Building on experiences from EU Cohesion Policy funding and industrial SME uptake of these programmes, we recommend that there is built in flexibility into the management of funding, which has a direct impact on businesses' cashflow. The differences in corporate structure and operation of public versus private companies must be considered in the design of the UKSPF. Strict adherence to public finance rules makes the path towards market uptake of technologies complicated, particularly for disruptive SMEs. There would be added benefit to the UKSPF if it introduced coherence and flexibility in funding claims to adapt to private sector timings, risks, and needs, versus focusing solely on public finance rules. Finance regulation around areas such as audits and eligible costs that consider normal financial practices of private stakeholders will result in the most effective use of funds and subsequent economic impact.
- 2.6 The UKSPF should recognise the critical role that IRT organisations (IRTOs) play in regional development and fund them accordingly. IRTO's such as EMEC are not the ultimate exploiters of investment made via cohesion funding, this falls to industry partners. IRTOs therefore face an option between taking on projects at a loss; or to receive further funding from industry or regional development partners to fund their participation. The financial burden this places on IRTOs is a major hindrance to the efficient delivery of projects. IRTOs should therefore receive 100% of their costs reimbursed via such projects.
- 2.7 The overhead rate provided on Interreg projects does not come near the cost recovery for IRTOs and should be raised substantially in the UKSPF. In Interreg projects, an overhead rate of 15% of staff costs is provided. This compares to 20% of staff costs on Innovation UK projects, 25% of eligible costs on Horizon Europe projects, and EMEC's own internal calculation of 52% of staff costs. EMEC recommends that, similar to Horizon Europe, an overhead rate takes into account all activities undertaken.
- 2.8 In order to ensure that greater public good is delivered through Interreg, non-profit entities such as government bodies and IRTOs are the only ones allowed to lead Interreg projects. This has proven an effective way to guide investment into key areas of public policy focus such as reducing climate emissions, skills development, and smart

specialisation. FORESEA's success, for instance, paved the way for greater Interreg NWE support of more EMEC-like IRTOs to support SMEs across a variety of industries. Given tangible positive outcomes, EMEC recommends that this approach is continued via the UKSPF.

2.9 Finally, we recommend that the UK make the UKSPF objectives publicly clear, to understand what the UKSPF aims to achieve across the UK economically, and in terms of innovation, social well-being, and decarbonisation.

3. Implications of the financial assistance powers in the Internal Market Bill

3.1 EMEC recognises the need to effectively manage and distribute the UKSPF such that it targets the necessary social, economic, innovation and development needs across UK regions.

3.2 In this context, there is a crucial necessity, opportunity and UK government commitment to 'level-up' regions across the UK, highlighted in the UK's announcement of the upcoming UK R&D Place Strategy⁶ and by the recognition that pushing R&D expertise towards "Demonstration" and commercialisation, will be a key driver in the socioeconomic development and international competitiveness of the UK as a whole.

3.3 Levelling up will benefit from taking advantage of the knowledge and expertise held within regional and local governments, as well as civil society organisations, of the socioeconomic characteristics, needs, challenges and opportunities in such regions.

3.4 The new financial assistance powers published in the Internal Market Bill are an initial commitment to where the SPF will be managed from. From our experience, the UK's devolution of territorial cooperation funds' management to regional administrations has been efficient and effective both at tackling relevant regional sectors and needs.

3.5 Following positive experiences and outcomes of devolved administrations' management of ERDF, there is room to consider the value of regional and local autonomy in the distribution of UKSPF funding across regional and local priorities.

3.6 There is risk that an increased distance between development fund management and the regions it is set to impact will have adverse consequences or effects, making inefficient use of the resources available, targeting misplaced priorities and of greater risk still, leaving key individuals, communities or critical issues behind.

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