**Areas of interest**
We very much appreciate the opportunity to give evidence before the committee. As an energy technology company, our responses will be directed primarily at the economic aspects post-2014, with particular reference to two areas: the development of new technology and overall energy policy.

**About Aquamarine Power**
Aquamarine Power is a wave energy company, with head offices in Edinburgh and further operations in Northern Ireland and Orkney.

In 2009 the company successfully deployed its flagship technology, known as ‘Oyster’, at the European Marine Energy Centre (EMEC), in Orkney. The company is currently testing its second full scale device – Oyster 800, also at EMEC, and the machine has successfully survived three winters at sea. Aquamarine Power’s goal is to develop commercial Oyster wave farms around the world.

The company has two marine energy leases – a 200MW site in Orkney, being developed in partnership with utility SSE, and a 40MW site off Lewis in the Western Isles. This site is fully consented, making it the world’s largest fully permitted wave energy site.

Oyster is designed to capture the energy found in nearshore waves and convert it into clean usable electricity. It uses a simple hinged flap connected to the seabed at around 10 metre depth. Each passing wave moves the flap which drives hydraulic pistons to deliver high pressure water via a pipeline to an onshore turbine which generates electricity. Multiple Oyster devices will be deployed in wave farms typically of 100MW or more.

Aquamarine Power offers a site development service to support the growth of Oyster and other technologies. The company’s innovative computer modelling system allows it to identify and develop the best sites for wave energy production around the globe.

**Economic focus**

**Support for the main targeted sectors and activities**
The current and previous Scottish Governments have been extremely supportive of the marine energy sector and have put in place a number of flagship policies which have enabled Scotland to take a genuine global leadership position in wave and tidal technologies.

These policies have included the establishment or EMEC more than a decade ago, the introduction of world-leading tariffs (ROCs) for wave and tidal technologies, the implementation by the Scottish Government’s Marine Energy Group of a road map to chart the future steps of the industry and the establishment of Marine Scotland as a one-stop shop for marine consents.
Together they have provided a suite of long-term, cohesive policy measures with clear goals, underpinned by strong and consistent political support – exactly the type of clear, long-term framework required to foster inward investment and long-term economic growth.

A number of independent studies have underlined the significant long-term growth potential offered to Scotland by a thriving ocean energy sector. Aquamarine Power has itself spend more than £5 million directly in the Orkney economy and works with more than 40 local firms. An independent methodology calculated our 40MW Lewis wave farm – which was fully consented by the Scottish Government in 2013 – could generate between 98 and 200 jobs during construction and inject up to £9 million a year into the Western Isles and wider Highland economy.

Industry challenges
However there are a number of challenges to the wave and tidal energy sector. These include:

- the significant private sector investment required to develop technologies,
- a government supported investment environment that will encourage private investment into the industry,
- the requirement for grant support for early projects,
- the need for long-term supportive tariffs, and
- a need to build grid infrastructure to Scottish islands.

With tariffs, the Scottish Government until recently had the power to set the level of support available via Renewable Obligations in Scotland. This was a very effective policy instrument which helped underpin Scotland’s leading position in marine renewables. This power has now been removed by the new UK Electricity Act and has been replaced by a UK-wide ‘contract for difference’. Future visibility of contracts for marine energy are now only offered during the current ‘levy control’ period, which lasts until March 2017. We believe this is off-putting to potential investors who will require visibility of a long-term market post-2020 in order to invest the significant £millions the sector requires.

With respect to building grid infrastructure to Scottish islands – the key institutions are Ofgem, National Grid, SSE, the Department of Energy and Climate Change and the Scottish Government. This is a very complex area, but in essence the transmission operator (SSE) needs to prove to the regulator Ofgem that any grid infrastructure built to Scottish islands will be used, and will not become what is termed a ‘stranded asset’. However at present it is not possible to prove a needs case – the current support regime, as outlined above, only gives visibility of the tariff available for projects built by 2017, but any grid infrastructure will not be completed until 2019. This is a conundrum which the Scottish Government has repeatedly endeavoured to overcome. However, without a substantive shift in approach by Ofgem, or a significant intervention by DECC, it is hard to see how grid infrastructure to Scottish islands will be built.

These two examples both illustrate the complexity of energy policy, and the reliance of Scotland’s world leading wave and tidal sector on policy set at a UK and a
Scottish level. It is clear the current and previous Scottish Government have been unequivocal in their support of marine energy and have used whatever policy levers are at their disposal to foster industry growth.

There has at the same time been significant support from the UK Government and institutions, through grants and tariffs, but we would contend the UK Government is less cohesive in its approach to marine energy – as the examples outlined above illustrate.

Level playing field
On a similar vein, we do not believe there is a level playing field for low carbon energy in the UK. Although the current debate is very much framed around the cost to the consumer, the UK Government seems prepared to support some forms of energy – namely nuclear – which are by any measure far more expensive than onshore wind, and potentially as expensive as early stage technologies including marine energy. At the same time they seem prepared to back fracking for gas, although it is not yet clear if there are substantive reserves in the UK, and which has so far proved far more unpopular than onshore wind.

We would suggest that in recent years, the current and previous Scottish Governments have been far more consistent in their long-term support for a variety of energy types – including oil and gas – and this creates a better environment for inward investments in energy projects that the at times opposing policies being pursued at Westminster.

Trade, investment and exports
Investors in any industry require stable, long-term policies. As per the previous answer, the Scottish Government has to date offered a very clear picture to potential investors of the long-term aspirations for Scotland’s renewable and hydrocarbon energy sectors.

We believe the export potential for our technology is tremendous. We estimate there is a 64 gigawatt global market for Oyster technology, with a value over £190 billion.

Management of natural assets
Scotland possesses some of the very best wind, wave and tidal resources in Europe, together with significant oil and gas reserves, and it makes sense to exploit these natural resources wherever possible.

Infrastructure planning and economic development
The Scottish Government has been very clear in pursuit of the economic opportunities these resources bring, through the establishment of the Marine Energy Group referred to previously and also through initiatives such as the National Renewables Infrastructure Plan and more recently through the establishment of an oil and gas taskforce to maximise the economic benefits of the offshore wind and the oil, gas and decommissioning sectors respectively.

Martin McAdam, Chief Executive Officer, Aquamarine Power
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