

CIERP Trip Report: Scotland Renewable Energy Conference and the Orkney Islands

By Iain Addleton (Spring 2019)

During my two years at Fletcher, I've focused my studies on energy policy and business strategy. For my capstone, I pulled these two areas together to analyze the development of the Scottish offshore wind industry. I based my capstone research on Scotland for a couple reasons. First, the country has one of the most dynamic wind energy sectors in the world — notable accomplishments include the world's first [floating wind farm](#) and the world's [most powerful turbines](#) (as of April 2018). Many of the issues and controversies affecting offshore wind development in Scotland are beginning to emerge in other places as well, including Fletcher's home region of New England. Second, the financial and policy background of Scottish energy is fascinating — especially so in 2019, as the Brexit saga casts an ongoing shadow of uncertainty. On a more personal note, I was born in the Scottish highlands and spent part of my childhood on the Hebridean island of Islay.

While working on my capstone, I was lucky enough to receive funding from the Center for International Environment and Resource Policy ([CIERP](#)) and the Fletcher Educational Enrichment Fund ([FEEF](#)) to travel to Scotland. My trip was built around the [Scottish Renewable Energy Conference \(SREC\)](#) in Edinburgh and a trip to the [Orkney Islands](#), home to some of the most innovative [energy demonstration projects](#) in Europe.

I reached Edinburgh first and would spend three of my eight days in the Scottish capital. The conference venue was a twenty-minute walk away, and I was buffeted by gale-force winds during my first walk to the conference — not exactly fun, but a promising sign for the Scottish wind industry. The two-day conference itself was integral to my capstone research. One of the most interesting speakers was [Paul Wheelhouse](#), the Scottish Minister for Energy, Connectivity, and the Islands. Like many speakers, he didn't hold back when addressing Brexit. As a member of the Scottish National Party (SNP), his comments landed with extra weight given the possibility of the SNP holding a second independence referendum in the next few years.

The conference was also very helpful from a professional development standpoint. I had the chance to meet policymakers, academics, and private sector professionals. It was extremely useful to listen to people from such diverse backgrounds discuss the same issue from different angles — including Brexit, the performance of floating wind turbines, or the removal of onshore wind subsidies. We discussed everything from changing subsidy regimes to turbine technology to project finance to local siting regulations.

Each of these conversations helped sharpen my interest in the energy sector. More importantly, they helped me think about where I might end up as an energy professional with a graduate degree in policy. As someone who used graduate school to switch careers from the military into the energy world, I've spent a lot of time wondering where exactly I'll fit in. This conference helped me realize how valuable my policy background can be to what, on the surface, is a very technical industry.

The most important lesson I learned at SREC was the importance of relationships between different groups for project development and clean energy expansion. Even within an industry as specific as Scottish offshore wind, it's easy for groups to remain siloed and focused on their own areas of expertise. Attending SREC as a Fletcher student highlighted how valuable my experience at Fletcher has been for taking a multidisciplinary approach to asking questions, identifying blind spots, and making connections between different events and ideas.

After the conference, I grabbed a rental car and began the 260-mile drive to the Orkneys. After a long drive and an hour and half on a ferry, I reached my Orcadian base of Stromness. The Orkneys were ruled by Norway for nearly 700 years and still have a strong Viking connection. As one tour guide put it, "we only became part of Scotland 500 years ago, and it's too early to tell if that relationship will work out." Over the course of my three days, I visited the offices of the European Marine Energy Center ([EMEC](#)), the largest tidal test facility in the world. The EMEC provided a unique insight into the "how" of innovation, exemplifying the type of forum and support that energy entrepreneurs need. I also drove around the island to some of the tidal testing infrastructure — with some of the most rugged maritime conditions in the world, equipment that can survive in the Orkneys can survive just about anywhere.

When my time on Orkney was up, I took the ferry back to the mainland and returned to Edinburgh via the same beautiful drive. I stopped at a series of lighthouses, castles, seabird colonies, and historic fishing villages along the way. During my last few hours in Scotland, I walked around Tantallon Castle, surrounded on three sides by water and one of the most picturesque locations of my trip.

I'm very grateful to CIERP and FEEF for making such a unique learning opportunity possible. Their backing was especially meaningful during my last semester, and serves as a reminder of what a supportive and special place Fletcher has been for the last two years. This trip was one of the most memorable parts of my Fletcher experience, but it was far from the only time that the school helped me make the most of my time in graduate school. It helped me shape my capstone, but much more importantly was an effective way of starting my job search in the renewable energy world.



Former Scottish Secretary Michael Moore, one of many speakers at the conference who addressed the Brexit negotiations that served as a dramatic backdrop to the conference.



At the Scottish Renewable Energy Conference.



An onshore wind farm standing guard in the Scottish Highlands outside Thurso. It is actually unusual to see such a large wind farm in the highlands - you're much more likely to see individual small-scale turbines that are [community-owned](#). In addition to onshore wind, it is estimated that Scotland has [25% of Europe's offshore wind potential](#).



The 5,000-year-old Standing Stones of Stenness, one of several Neolithic sites on Orkney.



The view towards the grid-connected subsea [Billia Croo wave energy test site](#), one of several innovative wave and tidal power projects that make Orkney a unique location in the energy world.



The [Orkney Research and Innovation Campus](#), home to the EMEC, Aquatera, and Heriot Watt University's International Center for Island Technology.



In front of the Shapinsay Sound tidal energy site, where the EMEC has tested over 30 prototype and grid-connected devices. Orkney's tidal energy program has received headlines for [generating energy nearly continuously](#), even during harsh North Atlantic storms. Depending on conditions, these test sites can generate between [7-25% of energy demand](#) in the Orkneys.



The view to Orkney from Dunnet Head Lighthouse, the most northern point on mainland Britain. Although the Orkneys are only 16 kilometers from the mainland, they are separated by the Pentland Firth, which has some of the [strongest tides and fastest currents](#) in the world.



A cat guarding the [Steps of Whaligoe](#), which cut down the steep cliff to a natural harbor that served as an unloading point for Scottish fishing boats in the 18-19th centuries.



[Tantallon Castle](#) in East Lothian, just outside Edinburgh and surrounded on three sides by water.