

# Heriot-Watt University visit to Nagasaki University, Nov 2023 : Report to MASTS

Dr Simon Waldman, Heriot-Watt University (ICIT), Jan 2024

## Background

Representatives from Nagasaki University visited Heriot-Watt's Orkney campus, facilitated by MASTS, in August 2023. During and following that visit a number of areas of mutual research interest were identified, and MASTS was able to provide funding to allow Dr Simon Waldman to conduct a reciprocal visit in November 2023.

The objectives of the visit were,

- To understand the current status of offshore wind and tidal energy in Japan, in both a commercial and industrial context
- To build relationships with the relevant research group at Nagasaki University in both of these areas, and continue discussions about future projects.

## Visit

Six working days were spent in Japan, hosted by researchers from Nagasaki University and a representative from the Nagasaki commercial cluster. While there we visited two offshore wind farms in Akita Prefecture, and a floating wind farm – as well as the site of Japanese tidal development to date – in the Goto Islands of Nagasaki Prefecture.

A great deal of insight was gained into the current state of offshore wind in Japan. It is in early days, with relatively small amounts installed thus far, but there are plans for very rapid acceleration in the years and decades to come. One area of unexpected learning was around the historical system of fishing rights in Japan, which may have significant implications for the large-scale deployment of marine energy systems. The Goto Islands may also provide an interesting comparison to Scottish island groups on the topic of ferries : this is a “live” issue in Scotland at the moment, and Goto has taken a different approach to provision.

While in Nagasaki Dr Waldman was able to discuss future research collaborations with members of the Engineering department, and also to meet representatives of Kyuden Mirai Energy, a major local marine renewable energy developer. Dr Waldman gave a guest lecture to masters students studying Renewable Energy, and met with a student who is considering postgraduate study in Scotland. There are hopes of exchanging research students in the future.



*Dr Waldman with his Nagasaki hosts at the Akita Offshore Wind project*



*Noshiro Port, Akita Prefecture, currently under expansion for offshore wind construction use. One of the first offshore wind farms in Japan can be seen in the background.*



*Offshore wind farm under construction using spar buoy type foundations, Goto Islands, Nagasaki Prefecture*

## Outcomes

- Plans for “quick win” collaborative work about improving methods for regional-scale tidal energy modelling.
- Outlines of a number of potential larger projects relating to both tidal energy and offshore wind, to develop for future funding calls e.g. JSPS, UKRI Global Partnerships Seedcorn funding, etc.
- Lapsed, nascent, and new relationships greatly strengthened, such that further discussions can continue at a distance.

## Summary of expenditure

Item	Cost
Flights (including internal from Akita to Nagasaki)	£2380.33
Hotels	£658.91
Return jetfoil between Nagasaki and Goto City	£94.72
Minor travel & subsistence	£135.49
<b>TOTAL</b>	<b>£3269.45</b>