Orkney International Science Festival (OISF) and Orkney Renewable Energy Forum (OREF) Energy Challenge: **2021 The Blyth Challenge**

This challenge is to design, make from recycled materials and test a device that will capture wind energy for some defined purpose.

Any number of adults or children can work together on one project. All entries (individual or teams) must be submitted by an adult (18yrs and over) who will act as the main point of contact and be responsible for the safety of under 18s taking part in the challenge.

The following requirements need to be fulfilled:

1) The device must fit inside a cube with two metres per side and must have at least two orthogonal dimensions greater than 250mm.

2) The purpose of the device must be dynamic, using the energy contained in the wind. Static or artistic presentations alone will not be sufficient although diagrams and posters may provide explanatory details.

Examples of a dynamic purpose are:

- Producing mechanical motion for entertainment, advertising, or driving another clearly purposeful mechanical device, such as a paper crusher.
- Pumping of fluids using pressure or suction.
- Generating electrical current to energise another device, such as a battery or a lamp. In this case the voltage must be DC and not exceed 12 Volts. The power level should be nominally less than 20 Watts. Any battery used must be rated at less than 5Ah.

3) The device must be substantially constructed from previously used materials.

Examples of previously used materials are:

- Packaging materials such as cardboard, HDPE milk bottles, polystyrene foam, fabrics such as old clothes, bed sheets, dish towels, polythene sheets.
- Waste plastic components from discarded toys, domestic appliances.
- Metals, such as steel sheets, bars and tubes, ball bearings, springs.
- Wood, like garden furniture, kitchen cabinets, fence posts.
- Electric wiring from old appliances.

Exceptions to this are:
Glues, nails and screws, thread, sticky tape, paint, rubber bands,
3D printed parts from recycled plastic filament.

4) Entrants are responsible for their own health and safety and must ensure that they are aware of any potential risks and take all sensible precautions.

5) Entrants must submit a video recording of their device in operation (no longer than 2 minutes) including an audio description of:

a) the device purpose
b) design process
c) materials used
d) construction process
e) test results
f) what you have learned from the challenge

to blythchallenge@gmail.com via https://wetransfer.com no later than 18/10/21