



ADVANCED

General Certificate of Education

20XX

Environmental Technology

**Unit 2: Additional Renewable Energy
Technologies**

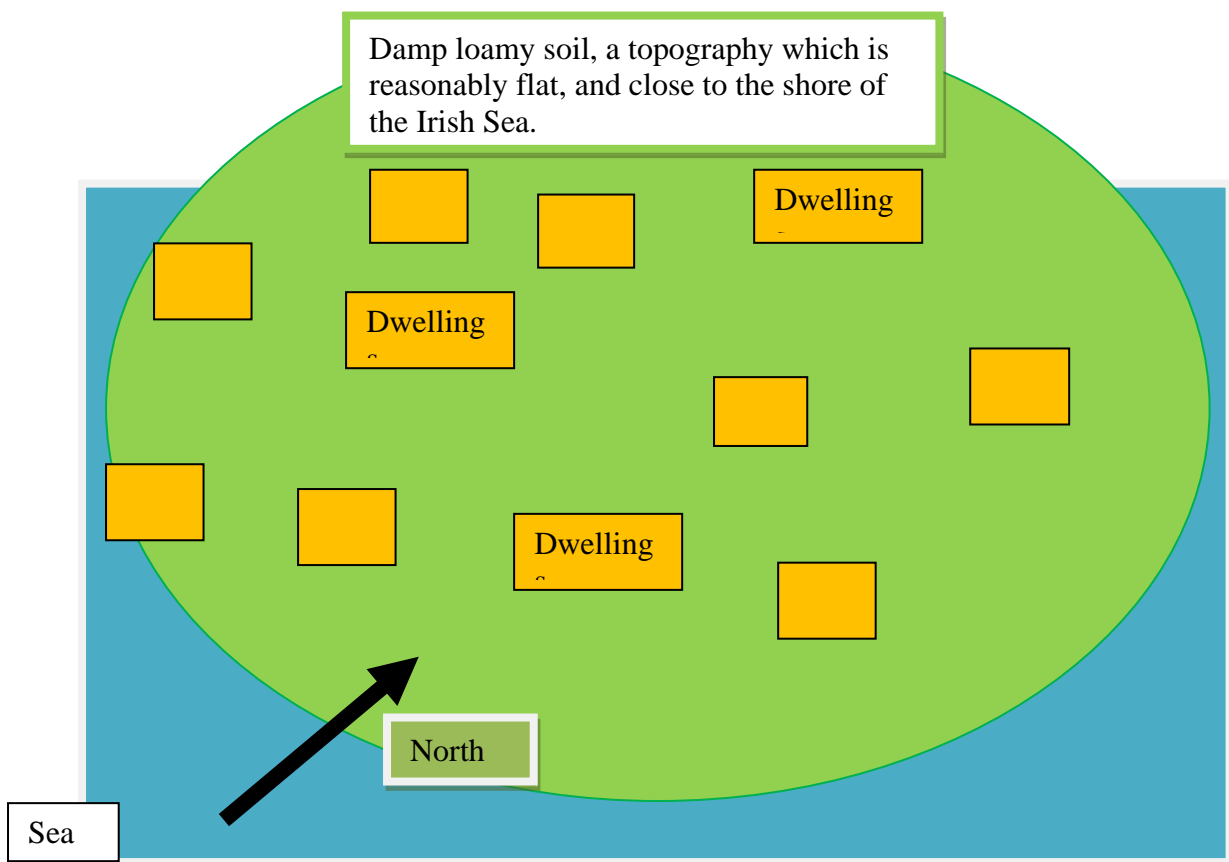
Introduction

Unit AS 2 gives you the opportunity to apply your knowledge and understanding of renewable energy technologies to a practical scenario. You will explore how different technologies can be adapted to suit a particular situation and you will use your skills of research and analysis to make decisions regarding the use of renewable energy on a commercially viable basis.

Assessment Task

You are the developer of a small group of 10 rather exclusive holiday homes which are to be built close to the shore of the Irish Sea. The 2 acre development site consists of 7 single storey cottage type dwellings and 3 double story houses suitable for families. In addition the developer has access to a further 3 acres of land adjacent to the site. Building work is due to commence on the project and a 9 month building programme is anticipated. The houses are being marketed on the basis on complete self reliance on renewable energy sources.

With reference to **two** technologies (from wind, solar, biomass) you are to research the options that exist for using these technologies to power the entire housing development. Based on your findings you are then asked to decide the best arrangement of your chosen technologies that would result in the developer meeting the target of self reliance.



You should produce a portfolio of evidence to support the decision that you have taken. This portfolio should contain the following information about the energy producing technologies selected;

- a) the efficiency of the technologies
- b) the cost of construction and infrastructure
- c) the length of time to achieve 'pay back'
- d) diagrams/plans of system
- e) the time for construction
- f) environmental impact
- g) nuisance value e.g. noise levels, visual perception ;
- h) security of supply and costs;
- i) the proposed location for each technology

In addition, consideration should be given to

- (i) the policy and legislative framework within which the housing development will be taking place
- (ii) the incentives available for renewable energy technologies
- (iii) the potential for integration of SMART GRID technologies
- (iv) the variety of jobs/careers linked to the renewable energy element of the housing development

All research materials must be presented within the portfolio and appropriate references provided.

Time

You have xx hours to complete the assessment task

Assessment

Assessment Objectives

AO1 Demonstration of knowledge and understanding

AO2 Application of skills, knowledge and understanding

AO3 Investigation and analysis

	AS	A2	A level
AO1	32%	26%	29%
AO2	36%	34%	35%
AO3	32%	40%	36%

Assessment criteria – to be inserted