



Cystadleuaeth Sgiliau Cymru
Skills Competition Wales

Competition Brief

Competition Title

Renewable Energy

Competition Overview

This is a team competition that will research into how various technologies within the green technology sector can provide energy for homes and industry. For example, wind turbines, solar photovoltaic, tidal devices, hydro turbines and hydrogen.

The scope of the competition enables learners to develop and put into practice a variety of skills and knowledge that are required to create a wholistic energy solution for a fictional island off the West Coast of Wales

Competitors taking part in this competition should, both individually and as part of a team, be able to:

- Generate ideas/Spot Opportunities
- Demonstrate creativity & innovation
- Develop appropriate strategies to problem solve and deal with difficult situations whilst working together
- Planning and managing resources
- Communicate effectively
- Working with others respectfully and effectively
- Demonstrate leadership skills (negotiation, persuasion and influence)
- Demonstrate self-confidence, self-belief and motivation
- Demonstrate solutions to sustainable energy options
- Demonstrate numeracy skills and understanding of costs
- Demonstrate presentation skills
- Identify and assess your individual and group strengths and weaknesses

Organisations can register teams of up to 4 learners online at www.inspiringskills.gov.wales between 21st November 2022 and 5th



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European Social Fund

December 2022.

The day will be split into a variety of tasks to allow each team to demonstrate their knowledge of Renewable Energy problem solving skills, both individually and as a team, which will be judged by a panel of Renewable Energy judges.

There will be one live competition heat, venue to be confirmed.

Entry Criteria

This competition is intended for competitors who are working at all levels of education up to a Level 6. Please note that this is a Welsh competition and it does not currently lead to a WorldSkills UK or international competition.

Entry capacity restrictions by organisation

Maximum of up to 1 team per organisation consisting of up to 4 team members. Centres can enter a maximum of 1 reserve team.

This is the maximum number of entries permitted by an organisation for this competition.

This is determined by 'location' and 'organisation'. 'Organisation' refers to the competitors' training provider/employer. 'Location' refers to a site where the competitor studies / is employed. For further guidance on these capacities, click [here](#)

Brief

The competition is based on the following scenario:

Your team has been contracted to find a holistic energy solution to Carreg Las, an island 5 miles off the West coast of Wales.

The island currently relies on electricity being generated by 4 large diesel generators installed in the 1970's. The costs of purchasing and transporting the diesel from the mainland (currently £400k a year) are increasing year on year, the environmental impact of these generators as well as the increasing concern that the generators are not able to cope with the expanding population and activity on the island have led the Island council to contact you.

The island council have agreed to seek a more environmentally friendly solution to their energy needs and have asked for you to put an application together for the Welsh Government Greener Future grant to meet their current and future needs.

Information relating to the island:

- 3 miles wide by 8 miles long,
- Has one mountain at 1800 feet peak
- Has a population of 2,000 people, mainly situated in the small town
- 800 homes, mainly 1970s construction

- 400 cars, a mixture of diesel and petrol
- 1 ferry which crosses twice a day (vehicles and passengers)
- 1 school
- 1 health centre
- 1 chapel and 1 church
- 2 supermarkets
- 30 High street properties (shops, pubs, restaurants etc)
- 1 300-acre dairy farm
- 1 fishing harbour with 3 commercial fishing boats
- 2 buses which act as a service bus and a school bus
- 1 fish food factory
- 1 small dairy food factory
- 2 garages

Preparation work leading up to the competition day:

To be submitted via an online portal by Wednesday 11th January 2023.

Apply for a Greener Future Welsh Government Grant, using the following template:

Team Members 1. 2. 3. 4.	Job roles
Value being Requested (£):	
Proposed Energy solution	
Environmental considerations	

List of assumptions/questions

Infrastructure List

Laptop/Chromebook, translation resources, paper/pens/calculators for group work, laptops with Microsoft office and access to the internet for research.

Competition day activities

Each team will be expected to undertake the following as part of the competition day:

1. Read and analyse additional information about the scenario
2. Update an extended bid template based on new information and new considerations
3. Finalise the preferred solution to meet the updated scenario
4. Prepare a 10-minute presentation of the team's solution to the panel

Competition Rules

For full terms and conditions of entry and competition rules visit

www.inspiringskills.gov.wales/terms-and-conditions

Conduct of competitors during the live competitions:

- All teams will participate in all tasks and questioning by the Judges.
- Competitors will start and finish work/tasks as instructed by competition organisers and/or judges.
- The use of offensive behaviour of language will not be permitted; competitors could be excluded from continuing in the competition.
- The panel's decisions will be quality assured by the ISEiW Team before winners are announced.

Generic competition rules

- Mobile phones can be used during the tasks for research purposes but are to be switched off during any presentations.
- Listening to music via headphones is not permitted during competition activity.
- Any questions during competition activity should be addressed to the competition lead.
- It is the responsibility of each group of competitors to arrive on time for each competition session. No additional time will be allowed if you arrive late.
- Technical failure of your equipment should be reported immediately to the competition lead. Additional time will be allocated if the fault is beyond the control of the competitor.

Marking and Assessment

Marking and judging of this competition will be done by a team of experts from Industry, Further Education or Training Provider, using a marking criteria and allocated marks to ensure consistency.

Competition Assessment criteria:

A	Completion of the bid template	10%
B	Innovative approach	15%
C	Level of technical detail	15%
D	Effectiveness of the teamwork	15%
E	Value for money	15%
F	Environmental impact	15%
G	Presentation	15%
	Total	100

Feedback and Recognition

Individual and Group verbal feedback will be provided at the end of the competition.

No results or awards will be awarded on the day as marking will be quality assured.

All competitors will be issued with a Participation Certificate and invited to an online Celebration Event which will be held Thursday 9th March 2023, where the First, Second and Third Awards will be announced. Further details will be communicated to competitors and their points of contacts by email.

Marksheets will be made available to competitors after the quality assurance process has been completed.

Competition Lead

Lead Contact: Arwyn Williams

a.williams@pembrokeshire.ac.uk



Cystadleuaeth Sgiliau Cymru
Skills Competition Wales

Briff y Gystadleuaeth

Teitl y Gystadleuaeth

Ynni Adnewyddadwy

Trosolwg o'r Gystadleuaeth

Cystadleuaeth tîm yw hon a fydd yn ymchwilio i sut y gall technolegau amrywiol oddi mewn i'r sector technoleg werdd ddarparu ynni ar gyfer cartrefi a diwydiant. Er enghraifft, tyrbinau gwynt, solar ffotofoltäig, dyfeisiau llanw, tyrbinau dŵr a hydrogen.

Mae cwmpas y gystadleuaeth yn galluogi dysgwyr i ddatblygu ac ymarfer amrywiaeth o sgiliau a gwybodaeth sydd eu hangen i greu datrysiad egni cyfannol ar gyfer ynys ffuglennol oddi ar arfordir gorllewin Cymru.

Dylai cystadleuwyr sy'n cymryd rhan yn y gystadleuaeth hon, yn unigol ac fel aelod o dîm, allu:

- Cynhyrchu syniadau/Canfod Cyfleoedd
- Arddangos creadigrwydd ac arloesedd
- Datblygu strategaethau priodol er mwyn datrys problemau ac ymdrin â sefyllfaoedd anodd wrth gydweithio
- Cynllunio a rheoli adnoddau
- Cyfathrebu'n effeithiol
- Gweithio gydag eraill a hynny'n barchus ac effeithiol
- Arddangos sgiliau arwain (trafod, perswadio a dylanwadu)
- Dangos hunanhyder, hunangred a chymhelliant
- Arddangos atebion i opsiynau ynni cynaliadwy
- Arddangos sgiliau rhifedd a dealltwriaeth o gostau
- Arddangos sgiliau cyflwyno
- Nodi ac asesu eich cryfderau a'ch gwendidau unigol ac fel grŵp

Gall sefydliadau gofrestru timau o hyd at 4 dysgwr ar-lein yn <https://inspiringskills.gov.wales/?lang=cy> rhwng 21 Tachwedd 2022 a 5



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European Social Fund

Rhagfyr 2022.

Bydd y diwrnod yn cael ei rannu'n amrywiaeth o dasgau er mwyn galluogi pob tîm i arddangos eu gwybodaeth am sgiliau datrys problemau Ynni Adnewyddadwy, yn unigol ac fel tîm, gaiff eu beirniadu gan banel o feirniaid Ynni Adnewyddadwy.

Cynhelir un rhagras, cystadlu byw; lleoliad i'w gadarnhau

Meini Prawf Mynediad

Bwriedir y gystadleuaeth hon ar gyfer cystadleuwyr sy'n gweithio ar bob lefel ym maes addysg hyd at Lefel 6. Sylwch mai cystadleuaeth Gymreig yw hon ac nid yw'n arwain at gystadleuaeth *WorldSkills UK* na chystadleuaeth ryngwladol ar hyn o bryd.

Cyfyngiadau ar gapasiti mynediad fesul sefydliad

Uchafswm o hyd at 1 tîm fesul sefydliad, yn cynnwys hyd at 4 aelod tîm. Gall canolfannau gofrestru uchafswm o 1 tîm wrth gefn.

Dyma uchafswm nifer y ceisiadau cofrestru a ganiateir gan sefydliad ar gyfer y gystadleuaeth hon.

Pennir hyn gan 'leoliad' a 'sefydliad'. Mae 'Sefydliad' yn cyfeirio at ddarparwr hyfforddiant/cyflogwr y cystadleuwyr. Mae 'Lleoliad' yn cyfeirio at safle lle mae'r cystadleuydd yn astudio / yn cael ei gyflogi. Am arweiniad pellach ar y galluoedd hyn, cliciwch [yma](#)

Briff

Mae'r gystadleuaeth hon yn seiliedig ar y senarios canlynol:

Mae eich tîm wedi cael cytundeb i ddod o hyd i ateb ynni cyfannol i Carreg Las, ynys sydd 5 milltir oddi ar arfordir gorllewin Cymru.

Ar hyn o bryd mae'r ynys yn dibynnu ar drydan sy'n cael ei gynhyrchu gan 4 generadur disel mawr a godwyd yn y 1970au. Mae costau prynu a chludo'r disel o'r tir mawr (£400k y flwyddyn ar hyn o bryd) yn cynyddu flwyddyn ar ôl blwyddyn, ac mae effaith amgylcheddol y generaduron hyn, yn ogystal â'r pryder cynyddol nad yw'r generaduron yn gallu ymdopi â'r boblogaeth a gweithgaredd sy'n cynyddu ar yr ynys, wedi arwain cyngor yr Ynys i gysylltu â chi.

Mae cyngor yr ynys wedi cytuno i geisio ateb mwy ecogyfeillgar i'w hanghenion ynni ac wedi gofyn i chi lunio cais am grant Dyfodol Gwyrddach Llywodraeth Cymru er mwyn diwallu eu hanghenion presennol ac yn y dyfodol.

Manylion am yr ynys:

- 3 milltir o led wrth 8 milltir o hyd,
- Mae yno un mynydd a'i gopa yn 1800 troedfedd
- Mae ganddi boblogaeth o 2,000, wedi'u lleoli'n bennaf yn y dref fechan
- 800 o gartrefi, wedi'u hadeiladu yn y 1970au yn bennaf
- 400 o geir, cymysgedd o ddisel a phetrol
- 1 fferi sy'n croesi ddwywaith y dydd (cerbydau a theithwyr)
- 1 ysgol
- 1 ganolfan iechyd
- 1 capel ac 1 eglwys
- 2 archfarchnad
- 30 eiddo stryd fawr (siopau, tafarndai, bwytai ac ati)
- 1 fferm laeth 300 erw
- 1 harbwr pysgota gyda 3 chwch pysgota masnachol
- 2 fws sy'n gweithredu fel bws gwasanaeth a bws ysgol
- 1 ffatri bwyd pysgod
- 1 ffatri fach bwyd llaeth
- 2 garej

Gwaith paratoi yn arwain at ddiwrnod y gystadleuaeth:

I'w gyflwyno trwy borth ar-lein erbyn dydd Mercher 11^{eg} Ionawr 2023.

Gwnewch gais am Grant Dyfodol Gwyrddach gan Lywodraeth Cymru, gan ddefnyddio'r templed canlynol:

Aelodau'r Tîm 1. 2. 3. 4.	Rolau swydd
Gwerth y gofynnir amdano (£):	
Ateb Ynni Arfaethedig	
Ystyriaethau amgylcheddol	

Rhestr o dybiaethau/cwestiynau

Rhestr Isadeiledd

Gliniadur/*Chromebook*, adnoddau cyfieithu, papur/beiciau/cyfrifiaduron ar gyfer gwaith grŵp, gliniaduron gyda *Microsoft Office* a mynediad i'r rhyngwyd ar gyfer ymchwil.

Gweithgareddau diwrnod cystadlu

Bydd disgwyl i bob tîm gyflawni'r canlynol fel rhan o'r diwrnod cystadlu:

1. Darllen a dadansoddi gwybodaeth ychwanegol am y senario
2. Diweddarau templed cais estynedig yn seiliedig ar wybodaeth newydd ac ystyriaethau newydd
3. Cwblhau'r ateb a ffefrir er mwyn cwrdd â'r senario wedi'i ddiweddarau
4. Paratoi cyflwyniad 10 munud o ddatrysiad y tîm ar gyfer y panel

Rheolau'r Gystadleuaeth

I gael y telerau ac amodau mynediad llawn a rheolau cystadlu ewch i

www.inspiringskills.gov.wales/terms-and-conditions

Ymddygiad cystadleuwyr yn ystod y cystadlaethau byw:

- Bydd pob tîm yn cymryd rhan ym mhob tasg ac yn y cwestiynu gan y Beirniaid.
- Bydd cystadleuwyr yn dechrau ac yn gorffen gwaith/tasgau yn unol â chyfarwyddyd trefnwyr y gystadleuaeth a/neu'r beirniaid.
- Ni chaniateir defnyddio iaith nac ymddygiad sarhaus; gallai cystadleuwyr gael eu gwahardd rhag parhau yn y gystadleuaeth.
- Bydd ansawdd penderfyniadau'r panel yn cael ei sicrhau gan Dîm ISEiW cyn y cyhoeddir enwau'r enillwyr.

Rheolau generig y gystadleuaeth

- Gellir defnyddio ffonau symudol yn ystod y tasgau at ddibenion ymchwil ond dylid eu diffodd yn ystod unrhyw gyflwyniadau.
- Ni chaniateir gwranddo ar gerddoriaeth trwy glustffonau yn ystod y gweithgaredd cystadlu.
- Dylid cyfeirio unrhyw gwestiynau yn ystod gweithgaredd y gystadleuaeth at arweinydd y gystadleuaeth.
- Cyfrifoldeb pob grŵp o gystadleuwyr yw cyrraedd yn brydlon ar gyfer pob sesiwn cystadlu. Ni chaniateir amser ychwanegol os byddwch yn cyrraedd yn hwyr.
- Dylid rhoi gwybod ar unwaith i arweinydd y gystadleuaeth am fethiant technegol eich offer. Caiff amser ychwanegol ei neilltuo os yw'r nam y tu hwnt i reolaeth y cystadleuydd.

Marcio ac Asesu

Bydd tîm o arbenigwyr o fyd Diwydiant, Addysg Bellach neu Ddarparwr Hyfforddiant yn marcio ac yn beirniadu'r gystadleuaeth hon, a byddant yn defnyddio meini prawf marcio a marciau a ddyrennir er mwyn sicrhau cysondeb.

Meini prawf asesu cystadleuaeth:

A	Cwblhau templed y cynnig	10%
B	Dull arloesol	15%
C	Lefel y manylion technegol	15%
D	Effeithiolrwydd y gwaith tîm	15%
E	Gwerth am arian	15%
F	Effaith amgylcheddol	15%
G	Cyflwyniad	15%
	Cyfanswm	100

Adborth a Chydnabyddiaeth

Darperir adborth llafar i Unigolion a Grwpiau ar ddiwedd y gystadleuaeth.

Ni chyhoeddir unrhyw ganlyniadau na gwobrau ar y diwrnod, gan y bydd ansawdd y marcio yn cael ei sicrhau.

Bydd yr holl gystadleuwyr yn derbyn Tystysgrif Cyfranogiad ac yn cael eu gwahodd i Ddigwyddiad Dathlu ar-lein a gynhelir ddydd Iau 9 Mawrth 2023, lle cyhoeddir y Gwobrau Cyntaf, Ail a'r Trydydd. Caiff manylion pellach eu hanfon at y cystadleuwyr a'u pwyntiau cyswllt mewn e-bost.

Bydd taflenni marciau ar gael i'r cystadleuwyr wedi i'r broses sicrhau ansawdd ddod i ben.

Arweinydd y Gystadleuaeth

Cyswllt Arweiniol: Arwyn Williams

a.williams@pembrokeshire.ac

