



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 coastal town Aber-feddu located on the Western peninsula of North 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 20th November 2023 and 4th



December 2023.

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

<https://inspiringskills.gov.wales/competitions/frequently-asked-questions>

Brief

The competition is based on the following scenario:

Aber-feddau is a coastal town located on the Western peninsula of North Wales. The village is surrounded on 3 sides (North, West and South) by the Irish sea and has a large mountain range to the East. The Town Council has agreed a key priority of working towards achieving net zero by 2050. In order to progress with this priority, your team have been appointed to develop a holistic Energy solution for the town and apply for the Welsh Government Greener Future grant to meet their current and future needs.

The aim is to reduce the reliance on the electricity coming from the National Grid, whilst making the most of the natural resources that the town has available. The town does not have a gas main line and has its own water treatment plant. Following the pandemic, an increasing number of the residents are working from home which is causing concerns over the grid capacity to the town.

Information relating to the town:

- Has a population of 6,000 people
- 2,000 homes, mainly 1970s construction
- 50% of the properties heat their homes using off grid Gas and 50% use heating Oil

- 2,300 cars, a mixture of diesel and petrol
- 4 primary and 2 secondary schools
- 3 health centres and 2 dentists
- 3 chapels and 1 church
- 3 supermarkets
- 80 High street properties (shops, pubs, restaurants etc)
- 5 garages selling petrol and diesel
- An industrial park housing food processing factories (25 units)
- A fishing harbour which dries out at low tide, with a small estuary leading to the mountains

Preparation work leading up to the competition day:

To be submitted via an online portal by Wednesday 11th January 2024.

Work in your team to compile an initial expression of interest to 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

<https://inspiringskills.gov.wales/terms/registrations-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 14th March 2024, 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

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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 y sgiliau a'r wybodaeth sydd eu hangen i greu datrysiad egni cyfannol ar gyfer tref arfordirol ffuglennol Aber-feddau ar benrhyn gorllewinol Gogledd 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 20eg Tachwedd 2023 a 4eg Rhagfyr 2023.



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 'lleoliad' 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 <https://inspiringskills.gov.wales/competitions/frequently-asked-questions?lang=cy>

Briff

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

Tref arfordirol yw Aber-feddau sydd wedi'i lleoli ar benrhyn gorllewinol gogledd Cymru. Mae'r pentref wedi'i amgylchynu ar 3 ochr (Gogledd, Gorllewin a De) gan Fôr Iwerddon ac mae mynyddoedd uchel i'r Dwyrain. Mae'r Cyngor Tref wedi cytuno ar flaenoriaeth allweddol o weithio tuag at gyflawni sero net erbyn 2050. Er mwyn symud ymlaen gyda'r flaenoriaeth hon, mae eich tîm wedi'i benodi i ddatblygu datrysiad Ynni cyfannol (*holistic*) ar gyfer y dref a gwneud cais am grant Dyfodol Gwyrddach Llywodraeth Cymru i ddiwallu eu hanghenion presennol ac yn y dyfodol.

Y nod yw lleihau'r ddibyniaeth ar drydan sy'n dod o'r Grid Cenedlaethol, gan wneud y gorau o'r adnoddau naturiol sydd gan y dref. 'Does gan y dref ddim cyflenwad trwy'r grid o nwy drwy brif bibell nwy ac mae ganddi ei waith trin dŵr ei hunan. Yn dilyn y pandemig, mae nifer cynyddol o'r trigolion yn gweithio o adref sy'n achosi pryderon ynghylch capasiti'r grid trydan i'r dref.

Gwybodaeth am y dref:

- Mae 6,000 o bobl yn byw yn y dref.
- Mae 2,000 o gartrefi, y rhan fwyaf wedi'u hadeiladu yn ystod yr 1970au.

- Mae 50% o'r eiddo yn cynhesu eu cartrefi drwy ddefnyddio nwy oddi ar y grid a 50% yn defnyddio.
- Mae 2,300 o geir sy'n gymysgedd o geir diesel a phetrol. Mae 4 ysgol gynradd a 2 ysgol uwchradd.
- Mae 3 chanolfan iechyd a 2 ddeintydd.
- Mae 3 capel ac 1 eglwys.
- Mae 3 archfarchnad.
- Mae 80 eiddo ar y stryd fawr (siopau, tafarndai, bwytai ac ati).
- Mae 5 garej yn gwerthu petrol a diesel.
- Mae parc diwydiannol sy'n gartref i ffatrioedd prosesu bwyd (25 uned).
- Mae harbwr pysgota sy'n sychu ar lanw isel.

**Gwaith paratoi yn arwain at ddiwrnod y gystadleuaeth:
I'w gyflwyno trwy borth ar-lein erbyn dydd Mercher 11^{eg} Ionawr 2024.**

Gweithiwch fel tîm i lunio datganiad dechreuol o ddiddordeb i lunio cais am grant gan Lywodraeth Cymru ar gyfer Dyfodol Gwyrddach, 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

<https://inspiringskills.gov.wales/terms/registrations-terms-and-conditions?lang=cy>

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 gwrando 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 gystadlu. 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 14 Mawrth 2024, 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

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