

MONTGOMERY PRIMARY SCHOOL

Solar Power for School



The solar panels on the roof of the primary school generate electricity and they are known as photovoltaic cells (PVs). This particular system is generating around 3,900 kWh ("units") of electricity per year which is equivalent to approximately 10% of the total electricity used by the school.

If the electricity is generated at the same time as the school requires it, then it is used directly, but particularly during the weekends and holidays some electricity is likely to be exported to the electricity grid.

The renewable electricity generated by this system will displace 2.215 tonnes a year of carbon dioxide emissions. A tonne of carbon dioxide is about the same size as a hot air balloon.

The installation includes a display panel in the school entrance which shows how much electricity

is being produced, how much it has produced and how much carbon has been saved since the panels were switched on. The roof system also includes a wind speed meter and various thermometers. All of these readings are relayed to classroom computers so that teaching staff can integrate the workings of the PV system into their teaching of sustainability issues.

PV systems can be used to generate renewable electricity to various users including homes and offices. Another technology, also commonly known as solar panels, is designed to provide hot water rather than electricity. Such technology (solar thermal) is particularly appropriate to households and is less expensive and more cost-effective than PVs. Solar thermal will usually be the recommended starting point for renewable energy installations in the home.

The system is owned by "Friends of Montgomery Primary School" and was installed with grant aid assistance from the UK Government's "Low Carbon Building Programme" and the "Energy for Sustainable Communities" (ESC) project operated by Glasu using EU Structural Funds. Montgomery Energy Group supported the Friends of the Primary School in the grant application and installation process and Severn Wye Energy Agency supported Glasu in delivering the ESC project. The installers were Dulas Ltd from Machynlleth.

For Further Information

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YSGOL GYNRADD TREFALDWYN

Paneli Solar ar yr Ysgol



Mae'r paneli solar ar do'r ysgol gynradd yn cynhyrchu trydan, a'r enw arnyn nhw yw celloedd ffotofoltaidd (PV). Mae'r system benodol yma yn cynhyrchu rhyw 3,900 kWh ("unedau") o drydan y flwyddyn, sef oddeutu 10 % o gyfanswm y trydan y bydd yr ysgol yn ei ddefnyddio.

Os yw'r trydan yn cael ei gynhyrchu ar yr un adeg ag y mae ei angen ar yr ysgol yna byddwn yn ei ddefnyddio yn uniongyrchol, ond ar benwythnos ac yn ystod y gwyliau, mae'n debyg y bydd peth trydan yn cael ei allforio i'r grid.

Bydd y trydan adnewyddadwy y bydd y system yma yn ei gynhyrchu yn arbed 2.215 tunnell y flwyddyn o ollyngiadau carbon diocsid. Mae tunnell o garbon diocsid oddeutu'r un maint â balŵn aer poeth.

Mae'r system yn cynnwys panel arddangos ger mynedfa'r ysgol sy'n dangos faint o drydan sy'n cael ei gynhyrchu, faint y mae eisoes wedi ei gynhyrchu a faint o garbon sydd wedi'i arbed ers i'r paneli gael eu defnyddio. Mae system y to hefyd yn cynnwys mesurydd cyflymder y gwynt ac amrywiol thermomedrau. Bydd yr holl fesuriadau hyn yn cael eu hanfon at gyfrifiaduron yn y dosbarthiadau fel bod modd i staff addysgu eu dosbarthiadau ynghylch sut y mae system PV yn gweithio wrth iddynt sôn am faterion cynaliadwyedd.

Gellir defnyddio systemau PV i gynhyrchu trydan adnewyddadwy i amrywiol ddefnyddwyr, gan gynnwys cartrefi a swyddfeydd. Cynlluniwyd technoleg arall, sydd hefyd yn cael ei alw fel rheol yn baneli solar, i ddarparu dŵr poeth, yn hytrach na gwres. Mae technoleg (solar thermol) yn arbennig o addas ar gyfer cartrefi, ac yn llai drud a mwy cost-ffeithlon na PV. System solar thermol fydd yn cael ei hargymell fel man cychwyn ar gyfer gosodiadau ynni adnewyddadwy yn y cartref.

"Cyfeillion Ysgol Gynradd Trefaldwyn" ("Friends of Montgomery Primary School") yw perchnogion y system. Cafodd ei gosod gyda chymorth grant Rhaglen Adeiladu Carbon Isel Llywodraeth y DG a phrosiect "Ynni i Gymunedau Cynaliadwy" (ESC) sy'n cael ei redeg gan Glasu gan ddefnyddio Cronfeydd Strwythurol yr UE. Cafodd Cyfeillion yr Ysgol Gynradd gefnogaeth Grŵp Ynni Trefaldwyn wrth ysgrifennu'r cais am grant ac wrth osod y system, ac fe gafodd Glasu gefnogaeth Asiantaeth Ynni Hafren a Gwy i gyflwyno'r prosiect ESC. Dulas Ltd o Fachynlleth fu'n gyfrifol am osod y system.

Am ragor o wybodaeth

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