



## EcoDyfi & the Dyfi Valley

Paul Allen - EcoDyfi board member

INFORSE-Europe European Sustainable Energy NGO Seminar  
Artefact, Germany, November 10-14, 2009

[http://www.inforse.org/europe/seminar09\\_Artefact.htm](http://www.inforse.org/europe/seminar09_Artefact.htm)

**Origins:** Gerard Morgan-Grenville

*"In the early 1970s I took a sabbatical and went to America. I talked to senior business and professional people and came to the conclusion that a lot of people realised there was a major problem, but were locked into what they were doing. I came back thinking what was needed was a project to show the nature of the problem and to indicate ways of going forward".*

**Site:** Llwyngwern Quarry, Machynlleth



**Staff 1974:** Pioneering new approaches



**Initial trials:** Micro-hydro



**Initial trials:** Electric vehicles



**Initial trials: Micro-generation**



**Initial trials: Micro-generation**



**Initial trials: The Dunlite Aerogenerator**



**Initial trials: Solar thermal**



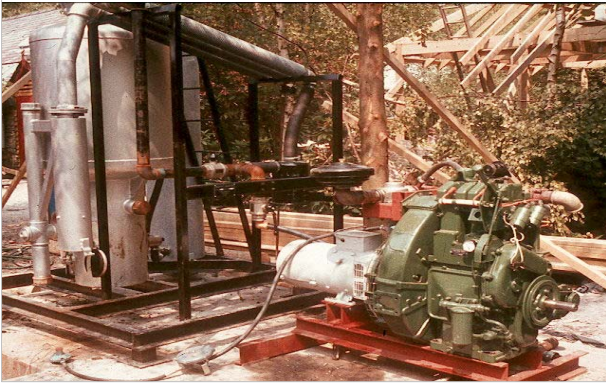
**Initial trials: Inter-seasonal heatstore**



**Initial trials: Energy efficient buildings**



Initial trials: Bio-fuels



35 years later - Inspire, Inform, Enable



CAT receives around 60,000 visitors each year



UK's first building Integrated PV roof



Pioneering low carbon building techniques



UK's largest solar thermal roof



UK's first fully renewable district heat main



Pioneering woodchip combined heat & power

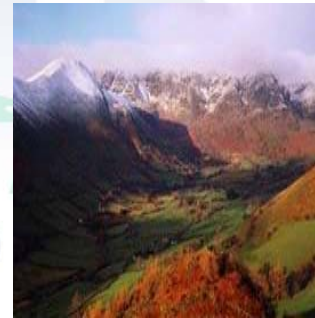


Over 30 spin-out enterprises



## Extending the experiment

- 1997 CAT partnered Powys County Council & Dulas Ltd
- Initially energy cluster development
- Need for local, independent body
- Establishment of "EcoDyfi"



## Dyfi Valley - Rural Mid-Wales

- Small family farms under pressure
- Over-dependence on agriculture & tourism
- Little manufacturing
- Young people leaving
- Welsh language under pressure



## The Dyfi Biosphere

UN status

'special places for people & nature'

500 across the world

Only one in Wales

Linking ecology and economy





## How we work

- First project and one staff member 1998
- Company limited by guarantee 1999
- Board of 17 local volunteers 2002
- 2 full & 2 part time staff
- Plus volunteers
- Local collaboration
- £282k t/o 2007/08



## EcoDyfi's vision



Improving our **quality of life** in ways that protect the things we value

Developing:  
robust, resilient **economy**  
strong sense of **community**  
healthy **environment**



## What does EcoDyfi do?

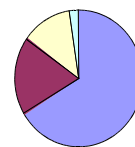
- A local organisation **bringing people together** to foster sustainable community regeneration in the Dyfi Valley



## Energy is a major focus

- Climate change threatens us all
- It's not too late for mitigation measures
- Oil is becoming scarcer and more expensive as global production peaks
- Local supplies of energy are more secure than imported ones
- Local energy supplies keep money in the local economy and creates jobs

## Energy consumption in Powys



## Domestic energy

- Dominated by domestic sector
- Total energy consumption in houses has risen 25% since 1970 (UK)
- Heating is the largest end-use
- People still die of cold every winter because they live in “leaky” houses and can’t afford the bills

## Dyfi Valley energy economy


- Widespread use of water power until 1950s
- Became dependent on electricity imported into the local economy
- About £4 million is spent on energy p/a
- Commercial wind produces about as much *electricity* as is consumed locally
- Most energy for *heating* is still imported

## EcoDyfi aims: energy

- Encourage local people to consider energy issues, including the economic and environmental implications of energy use
- Reduce demand by more efficient use
- Establish some “community-based” renewable energy installations
- Improve understanding and support for renewable energy by maximising local benefits


## Energy saving actions

- Increase Home Energy Checks
- Give away compact fluorescent lamps
- Arrange talks to groups
- Upgrade community buildings
- Door to door visits in some villages
- Energy also a focus of ecological footprint surveys for householders




**Maesglas hydro**


100 kW farm-based scheme near Mallwyd (2 intakes)



In Berwyn SSSI & Snowdonia National Park



Hill farm diversification, selling to grid





### Former chapel, Llanwrin

- 990 Watt pv array
- Solar water heating
- Conservation Area



### 960 Watt photovoltaic array on bungalow at Dolguog, Machynlleth

Property also has ground source heat pump

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18.4 kW solar electric array being built on social housing in Machynlleth (Tai Cantref with DTI support)

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2 x 13.4 kW solar electric arrays at Dyfi Eco Park (Welsh Assembly Government)

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## Machynlleth Golf Club



Loft space insulated plus Solar water heating & 3 kWp solar electricity

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## Community buildings

### Llanwddyn district heating system

- Community centre, school, & 36 houses
- Woodchip
- Owned by Powys CC

[www.dulas.org.uk](http://www.dulas.org.uk)



## Community buildings

### Carno Community Centre

- 45 kW wood pellet boiler
- Containerised
- Heating & hot water
- Hall, function rooms, showers
- Estimated it will save 12 Tonnes CO2 p.a.
- £61K capital cost
- Grant from Windfall



## Bro Dyfi Community Renewables Ltd



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## Who is BDCR?

- An energy supply co-operative with 209 members / shareholders
- Nearly all are individuals; 122 of them live in the Dyfi Valley
- Energy Saving Trust, Baywind, ecodyfi & CAT are corporate members
- Incorporated in 2001 under the Industrial & Provident Societies Acts
- One vote per member

## The first (V17) turbine

- Second-hand Danish machine
- 22 metre tower
- On Forestry Commission land above CAT. Two farmers gave access leases
- Electricity sold to grid
- Output of 163 MWh p.a. equivalent to average consumption of about 50 houses

## Bro Ddyfi Community Renewables - Vestas 75kW



## Money matters – first turbine

- An ethical investment
- First two years interest to members about 5% but returns may be higher some years
- Cost £81,000 (turbine £15,000)
- Most of rest spent locally
- Grants from Energy Saving Trust, ERDF, ScottishPower Green Energy Trust

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## How did we do it?

- Key individuals started 1998, supported by ecodyfi
- Dulas Valley Community Wind: leaflets, meetings & media work
- Environmental Impact Assessment done by members for shares
- Planning 2001; little opposition
- Persistence (turbine & site change)

## Opened in 2003



## The new project

- Second-hand 500 kW turbine
- Replacing CAT's prototype
- Export to Grid
- 1,000,000 kWh (200+ houses) p.a.
- Project cost £350,000
- £42,000 ERDF grant: ecodyfi to receive interest from these shares
- Additional grant aid from WAG

## Bro Ddyfi Community Renewables - 500kW



## Landowners' wind farms

### Amegni: Carno 2

- 3 hill farming families
- 12 x 1.3 MW turbines
- £20M cost: 80% debt; sold 20% to FIM investments
- £30,000 p.a. to community benefits



## Other EcoDyfi Actions

- Sustainable tourism
- Accommodation sector
- Growers courses
- Mountain biking
- 'Fresh & Local' market stall
- Ecological footprinting workshops
- Lantern procession

