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

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: The Dunlite Aerogenerator

Initial trials: Inter-seasonal heatstore

Initial trials: Solar thermal

Initial trials: Energy efficient buildings
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
- Industrial
- Commercial
- Public
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

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

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

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

Community buildings
Llanwddyn district heating system
• Community centre, school, & 36 houses
• Woodchip
• Owned by Powys CC

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

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

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
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

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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