Mid Wales Regional Committee MID 03-01(p.5)

Date: Friday 13 July 2001

Time: 10.30am to 1.00pm

Venue: Community Hall, Llanidloes

Paper from the Council for Protection of Rural Wales

CPRW fully supports the Assembly's emphasis on developing Renewable Energy (RE). There is no need to repeat the arguments on the significance of utilising RE and, undoubtedly, Wales has a significant role to play within its Sustainable Development Scheme.

Also, we welcome the research work now being done that will provide acknowledged foundations for the future especially in formulating an Energy Strategy for our country. We look forward in that to seeing the right emphasis being placed on demand and conservation measures as well as supply.

We also welcome the work being done under the auspices of the Assembly on Town and Country Planning (TAN 8 Working Group and the Spatial Planning Network, for example.) It is only through having such a strategic and spatial framework that we can we really move forward with an effective and convincing accepted Energy Strategy.

We must bear in mind that while RE comprises of a range of different technologies it is disappointing that a number have not had the attention they deserve in terms of Research and Development. This imbalance should be corrected as a matter of priority

A feature of many RE technologies is that they are de-centralised and there is no better example than solar energy, which it is now clear is not just suitable for the Tropics! It is wonderful to think that each day's sunshine contains more energy than the planet's 5.9 billion inhabitants would consume in 27 years![1] Between 1990 and 1995, on a world scale, it is this technology sector (with wind) that has seen the biggest percentage increase in energy supply sectors. The day when a great number of buildings – even in Wales - will have photovoltaic panels is not far away.

Another source of energy that has not had the attention it deserves is fuel cell technology. Perhaps, Wales could promote research into this ' fuel of the future'?

Biomass has potential but not through utilising it in large scale plants as illustrated by the case in Newbridge-on-Wye. Transporting high mass/low density fuel for miles to a central point in a deep rural area creates serious environmental concerns. A series of smaller 5MW stations around Wales close to centres of production of Short Rotation Cropping (SRC) or near to centres of forest residues would be potentially more acceptable as dispersing power stations of this scale would obviate transportation over long distances. As is standard practice, the landscape and environmental issues of each application would have to be examined and scale, location and site must always feature as material factors.

Apart from the sun, the greatest potential for RE comes from water, and the wave and tidal forces of the restless sea in particular. There are immense opportunities to harness huge amounts of predictable RE here but substantial investment is needed. To make real difference RE must produce hundreds of MW. As examples, Tidal Electric's proposals for tidal pools off the coast of Rhyl and Swansea offer exciting prospects as well as raising environmental questions [2] as does the Severn Barrage. It is estimated that this single scheme , in itself, would supply some 7% of UK electricity demand. It would inevitably be a massive and high cost undertaking with a long build time raising complex and significant environmental issues which would have to be resolved.

Out a sea is also the place to realise wind energy potential. CPRW has argued for years that large scale offshore installations provide more realisable potential for wind energy. The industry now acknowledges this as the wind power source of the future: sea bed licences are now being issued, a regulatory system has been devised, and the environmental arguments are already being discussed by with all interested parties.

With all the potential to hand, CPRW does not agree with the wide-scale erection of windpower stations on the uplands and coasts of Wales. Whilst land-based wind turbines provide dispersed power sources and their tower bases take up relatively little space on the ground , they also illustrate another characteristic of RE technologies and that is the large land-take requirement. No one can argue against the fact that the land-take in terms of the visual impact of moving machines (now planned to be around 100m) is substantial and, of course with more proliferation, is already cumulative over vast areas.

As part of our country's contribution to the global concept of Sustainable Development, Wales can claim its place as a 'green' country because of its superb landscapes and rich and varied habitats. Here, the opportunity exists for people to find tranquillity and this desire is translated into an economic asset through rural tourism A recent report gave clear indications on this[3] but the case has been proved in an unfortunate and painful way with the dire consequences of the Foot and Mouth Epidemic.

The present programme of developing wind energy is in conflict with conserving this environmental and economic asset. This has been acknowledged by the Wales Tourist Board[4]. As the Tabulation by CPRW's consultant [5] Geoff Sinclair shows, the 362 existing turbines are *already* capable of producing a proportion of Wales' demand which is equal to the highest on-shore wind option envisaged for the UK 2010 10% RE target. Adding those with planning permission and others within the planning process but not yet determined, the proportion risies to 7.1%. Viable NFFO contracts for which applications are awaited bring the potential total to 12.4%, which if implemented could involve between 800-1000 turbines at sizes of 100m. In addition, many unknown post-NFFO projects under the Renewables Obligation will be made.

The implications are clear: this unjustified pre-occupation with one form of RE would extend the already damaged landscapes of parts of mid-Wales across huge areas, turning our country into an extensive 'wind factory' and threatening one of our greatest environmental assets. CPRW does not wish to see the creation of a major new environmental problem whilst ostensibly trying to solve another. It is a huge challenge to try and reconcile the promotion of RE with protecting Wales' valued landscapes but it a challenge we must face and face it holistically. and not as the trend can be, in a narrowly focused fashion.

Under the leadership of the Assembly, we can create a country that will be mature enough to include the quality of its beauty in its environmental equation. That in itself would be a major contribution from Wales to the issue of world sustainability.

1. Quoted in the New Internationalist, June 2001 from World Watch
2. Tidal Electric Web Site

3. Midmore, The Economic Value of Walking in Rural Wales, March 2000
4. Wales Tourist Board Policy Guidelines on Windfarm Development October 2000
5. Geoff Sinclair of Environment Information Services

EFFECTIVE & POTENTIAL ONSHORE WIND POWER OUTPUT: WALES, June 2001

Wind Turbine Installations	Projects (turbines)	Installed Capacity (MW)	Output	
			GWhpa	% of present electricity demand
CONSTRUCTED (1991 - 2001)	15 (362)	152.1	400	2.6%
PERMITTED (but not yet built)	3 (24)	23.1	61	0.4%
Sub-total - effective	**18**	**175.2**	**461**	**3.0%**
AT PUBLIC INQUIRY Decision awaited	5 (95)	73.6	193	
CALLED IN Public Inquiry likely	3 (67)	80.2	211	
LPA PLANNING Decision awaited	3 (68)	87.3	229	
Sub-total - in process	**11**	**241.1**	**634**	**4.1%**
NFFO 3-5 contracts: **Applications awaited**	**27** (c200-400*)	**311.8**	**819**	**5.3%**
COMBINED TOTALS	**56** (c800-1000*)	**728.1**	**1914**	**12.4%**

Note:

Typical existing turbines are 600kW / 55m (180ft); proposed are up to 1.5MW / c100m (327ft)

* Estimates of turbine numbers assume a range of 750kW to 1.5MW capacity

Output calculated using officially accepted standard parameters as follows:

IC (MW) x 8760 (hrs per year) x 30% (Capacity Factor) /1000 = GWhpa

Excludes outdated NFFO 1 & 2 contracts and certain projects refused permission

Further post-NFFO applications are anticipated under the Renewables Obligation

Wales' present electricity demand is estimated as 15,500 GWhpa

Within the UK overall 10% published RE target, on-shore wind ranges between *Constrained Wind* and *High Wind* options of 1.3% and 2.6% (which are potentially exceeded by the estimated output from the existing effective capacity in Wales)