

## **Report of “An Energiewende for Wales: A transformational and smarter energy future for Wales” Seminar held on Friday 2nd October 2015**

### **Background**

The Environment and Sustainability Committee of the National Assembly for Wales is undertaking an Inquiry into a smarter energy future for Wales. Starting from the basis that Wales needs to rapidly reduce its carbon emissions if it is to contribute to the prevention of global average temperatures rising more than 2° Celsius, and the need to enhance energy security in Wales, the Committee aim to arrive at a view on:

- i. How Wales can achieve a smarter energy future, including low carbon energy supply, energy demand management and energy storage, at a sufficient pace to achieve the necessary reductions in emissions;
- ii. Whether the current infrastructure and regulatory framework can deliver these changes at the rate of change that is necessary;
- iii. The action that needs to be taken by citizens and the public, private and third sectors; and
- iv. The balance of devolved competence in this area of policy.

The consultation period relating to this inquiry ran from Monday, 20<sup>th</sup> July 2015 to Friday, 4<sup>th</sup> September 2015. Sessions for oral evidence to Committee were held on the 8<sup>th</sup> and 22<sup>nd</sup> October; and the 4<sup>th</sup> of November. The Committee will consider the implications of consultation responses and oral evidence during the early part of 2016 in the context of the identified key issues of the Energy Mix; the Grid; Storage; Ownership; Energy Efficiency and Demand Reduction; and Communities (making the case for change). It is anticipated that this will lead to a conclusion to the Inquiry in February / March 2016

A scoping paper, entitled An “Energiewende” for Wales was prepared by Alan Simpson and later presented to the Committee in June 2015. This paper refers, in particular, to ‘best practice’ exemplars in Germany, Denmark and California; and suggests ways in which this practice can best be applied to circumstances in Wales. It therefore provides the context for the Committee’s Inquiry into the achievement of a transformational and smarter energy future for Wales.

### **The Seminar**

A Keynote presentation was given by Alan Simpson, an external advisor to the National Assembly for Wales Environment and Sustainability Committee. Three experts with particular expertise in renewable energy sector (Chris Blake, Green Valleys and CEW; Clare Keates, Eversheds; and Calvin Jones, Professor of Economics, Cardiff Business School) gave responses to the presentation. This was followed by an open Forum discussion. Copies of the presentations given by Alan Simpson and Calvin Jones accompany this report.

## MAIN POINTS FROM THE PRESENTATIONS.

### Alan Simpson

*This section should be read with Alan Simpson's accompanying presentation.*

The technological advances that have been made in communications over the past two decades should now be matched by similar advances in energy supply, particularly in terms of renewable energy.

Clarity of leadership is also required within the energy sector, ensuring that both policy and delivery are more joined up. This means that:

- The use of subsidy should be used more carefully to ensure that investment by subsidy is only withdrawn when acceptable and sustainable levels of viability can be achieved in generation and supply.
- Governmental power structures need to be rethought that are more interactive, with greater levels of devolution. This should include national targets and a local duty to deliver.

Like Denmark and California, Germany has exploited new technological advances in the provision of renewable energy, as well as adopting more proactive government structures to facilitate the delivery:

*Feldheim:* A community outside Berlin has become self sufficient in terms of energy generation - [www.neue-energien-forum-feldheim.de/index.php/en/self-sufficient-village](http://www.neue-energien-forum-feldheim.de/index.php/en/self-sufficient-village) , with energy prices being between 30% - 50% less than market price.

*Hamburg Community Power:* <http://power-to-the-people.net/2013/09/hamburg-citizens-vote-to-buy-back-energy-grid/> this project included a transformation of existing stock. Investment in the housing stock received beneficial support from local / regional banks, including low interest loans with interest starting as low as 1% over 15 years.

*Freiburg Solar City:* Freiburg is known as Germany's Green City, Apart from the Solar City project, which is close to the sustainable district of Vauban, Freiburg is an exemplar of sustainable development. See RSCW Study Tour report on the CREW website: [www.regenwales.org/resource\\_96\\_Regeneration-Skills-Collective-Wales-Study-Tour-to-Freiburg](http://www.regenwales.org/resource_96_Regeneration-Skills-Collective-Wales-Study-Tour-to-Freiburg)

*Ackermannbogen Estate, Munich:* The city's solar district, with a combination of solar, heat pump and district heating.  
[www.landscapeinstitute.co.uk/casestudies/casestudy.php?id=14](http://www.landscapeinstitute.co.uk/casestudies/casestudy.php?id=14)

From the early nineteenth to the mid twentieth centuries, energy supplies and public utilities (gas, electricity, water etc.) were in public social ownership in the United Kingdom, mainly funded through Municipal bonds. Manchester and Birmingham were notable examples. Some cities in the U.K. have now started to be more proactive and innovative in developing new approaches to the use of renewable energy:

*Bristol* bio buses, for example, are powered from food waste and disposed sewage  
[www.theguardian.com/cities/2015/apr/27/bristol-bus-powered-human-poo-smell](http://www.theguardian.com/cities/2015/apr/27/bristol-bus-powered-human-poo-smell)

*Nottingham:* The focus of the Robin Hood Energy Company is on energy saving and reductions in the cost of energy to consumers. This has raised the issue of achieving the right to provide local supply, which will require devolution of responsibility to

more local levels. [www.theguardian.com/environment/2015/sep/07/robin-hood-energy-nottingham-council-launches-not-for-profit-energy-company](http://www.theguardian.com/environment/2015/sep/07/robin-hood-energy-nottingham-council-launches-not-for-profit-energy-company)

### **Chris Blake**

Investment in renewable energy is a sound and logical idea for a wide range of economic, environmental and social reasons. A continuing reliance on nuclear power and gas, within the U.K. could have serious repercussions in terms of energy security, especially imported gas. Wales, in particular, has a potentially wide range of renewable energy resources from the sun, wind, tides and rivers. These could also be exploited much more at local community levels, where less than 1% of energy is under community or mutual control in Wales. Full economic benefit has not been captured at the community level. Yet it always seems to be that international energy generating and supply companies are favoured by Ofgem, above both local community initiative and municipalities.

There are a number of advantages in embracing community renewable energy. These include the availability of cheaper capital funds; it enables access to public assets; and it can capture some of the deeper benefits, such as addressing fuel poverty and bringing community benefit from the sale of surplus energy. In this context, reference was made to the Piclo scheme, a pioneering online marketplace, which has enabled commercial consumers and renewable energy generators to trade excess electricity directly to local commercial consumers. Information on this available at [www.goodenergy.co.uk/press/releases/2015/03/10/good-energy-open-utility-trial-uk-s-first-online-renewable-electricity-marketplace](http://www.goodenergy.co.uk/press/releases/2015/03/10/good-energy-open-utility-trial-uk-s-first-online-renewable-electricity-marketplace)

The overall conclusion is that there is a need to pull together all available expertise and operate in a collaborative manner. Co-operation between public authorities (Welsh Government and Councils), landowners, developers and local communities is essential. The challenge is urgent and requires political will.

### **Clare Keates**

Clare outlined her role within regulatory part of Eversheds work programme, which entails working with, and for, commercial and corporate clients. The focus is on the U.K. solar, wind and biomass within the renewable energy sector. With the removal / phasing out of U.K. government subsidies for renewable energy, Eversheds have taken on more work abroad (e.g. Jordan and Egypt; both very strong on solar energy).

In Wales, food waste being examined as a potential source of conversion to energy. The Welsh programme could provide a template for England and the rest of the U.K. In relation to UK subsidies for onshore wind and solar energy, greater clarity of the regimes is still required in relation to, the effect on the scale of development; the position regarding business rates; and the operation of the planning system. In relation to the latter, recent decisions in Mid Wales were referred to, where out of six planning applications, only one was approved, and that related to the continuation of an existing wind farm.

There is a need to examine all potential sources of financial support, including investment banks. In this context, it was suggested that consumers could have a role in helping to determine where investment should go.

One big challenge to the sector is the development of storage facilities for surplus energy. Some progress made in Germany and the U.S.A., but these have not yet proved to be viable for clients in the U.K.

### **Calvin Jones**

*This section should be read with Calvin Jones's accompanying presentation.*

Calvin expressed broad agreement with the vision and the outcomes within Alan Simpson's presentation. But in Wales, the basic tools don't exist to deliver a transformational energy policy with effective innovative delivery mechanisms on the scale necessary. Calvin identified five specific issues:

#### *Power structures:*

In terms of political power structures, decisions in Wales take so long to materialise (e.g. Richards Commission 2002; Silk Commission - 4 years and counting). Yet in Wales, issues relating to Wales have been well known, for example grid capacity and distribution; existence of large CO<sub>2</sub> generators; carbon regulations; issues relating to subsidies specific to Wales and not just the U.K.; and electricity market prices. Yet action being taken on these issues cannot be perceived to have been urgent. Scotland's relationship with Westminster is far more proactive and successful than Wales; yet Wales is important to the energy sector in the U.K. A realignment of regulatory control, subsidies and incentives specific to the needs of Wales is required.

#### *Capital and Ownership:*

The big energy companies exert huge power in many countries. However, in Germany, their "big 4" took their eye off the ball, and alternative structures, more 'people' / community related, became successful. The Big 6 in the U.K. are unlikely to make the same mistake; and Wales is clearly included within this scenario. In addition the roll out of renewable energy provision in Wales that is grid dependent, rather than community related, will be inefficient and more costly to many consumers.

The overwhelming privatised nature of the electricity generation sector conspires against economic and employment benefits to Wales. There is a need to greatly expand the research and innovation capacity / process, with Welsh companies and Welsh Universities working in collaboration. And there is also a need to try and ensure that the value of the electricity generating capacity of Welsh natural resources is retained within Wales, thereby localising the economic benefits. The number of people currently employed in the sector is low in Wales; change in ownership is key in this respect.

#### *Capacity and Orientation*

The Community Energy sector is both relatively small and fragile in Wales. Three key people involved in half the generating capacity of community energy companies / organisations.

The reduction in public subsidy has clearly reduced any move to viability for many renewable energy investments. Although some schemes are still proceeding, the build up in capacity has slowed with the removal of subsidy for renewable energy. There is still a strong argument for reducing demand in energy consumption through an increased take up and better standards of insulation in domestic and none domestic buildings.

The social housing sector in Wales has taken a leading role in improving the energy performance of their housing stock, both through comprehensive insulation programmes and the use of various sources of renewable energy. However, social housing is a reducing proportion of housing stock in Wales and the remainder of the housing stock (both owner occupied and the increasing proportion of private rented), requires major intervention

#### *Narrative*

Calvin considered that the Energiewende narrative required major political and financial commitments along with high levels of public support and positive engagement with the private sector. It requires national regulation, a local authority duty to deliver and more than short-term levels of subsidy. He also considered the model to be expensive and inefficient.

#### *Incentives:*

Political power or leadership does not exist in Wales to provide adequate incentives or to change circumstances. Despite the publicity given to the National Assembly's unique responsibility for Sustainable Development, the wealth of natural resources for renewable energy and preoccupation with Climate Change issues, Wales fails to take real leadership in the delivery of the overall sustainability agenda, compared with other countries. Examples include the reluctance to seriously consider congestion charges; to challenge the levels of sustainability achieved by volume house builders; and the perceived limitations put on the extent of wind power. These signs are not encouraging.

#### **Alan Simpson's comments:**

- The existing energy mindset: Scotland has opened the door – with competitive engagement; and a willingness to go forward. In addition, the current move to greater city autonomy elsewhere in the U.K. could lead to greater energy autonomy.
- Despite public perception to the contrary, energy costs per unit consumed have become dramatically lower in recent years.
- Ofgem are not interested in what Wales produces. The national grid, and its management and operation, does pose a problem for Wales, especially in the renewable energy sector.
- The position of Wales will continue to be somewhat insecure, given the split of responsibility between Cardiff Bay and Westminster.

#### **PANEL DISCUSSION WITH DELEGATES: ISSUES RAISED**

The need to give consideration to a **wider range of renewable energy sources** was raised. Reference was made to the hydrogen gas grid in Frankfurt; heat recovery schemes and the development of other new and emerging renewable energy based technologies by companies like REW Innology, ITM Power etc. Also the major Orkney tidal and wave power project. Renewable energy solutions need to be a mix that employs resources appropriate to the locality or region.

*Alan Simpson and Calvin Jones* referred to the fact that **energy efficiency** still remains the most important initial step; the reduction of consumption through insulation – an essential part of making any energy mix effective!

There was “warm” discussion surrounding the use of **coal as a continuing part of the energy mix!** It was contended that the UK, including Wales, has neglected development of "clean burn" coal technology and carbon capture. Carbon capture

should also have been linked to increasing oil and gas production. Germany is progressing in both these fields and will be in an advantageous position to sell the technology to countries still reliant on coal. It was also suggested that coal water slurry fuel technology had been proven in some countries (e.g. Russia and Austria) and this simple technology had not been considered in the UK. In Wales, which has plenty of coal and water, a much cleaner burn at coal-powered stations is possible, with approx 50% reduction in CO2 production.

*Calvin Jones* supported carbon capture from gas and oil, but opposed the continued use of coal in the energy mix.

The **E.U. regulatory and funding background** was referred to. Not only the Structural Fund programmes, of which Wales is a recipient, but also funding programmes that are discreet to the energy sector; and E.U. pilot project opportunities emerging from the inter-regional European Territorial Co-operation Strategy could be beneficial to Wales. Also there is a need for Welsh local authorities to be more engaged with the Covenant of Mayors Sustainable Energy Action Plan Network. There were some questions regarding blockages to funding as a result of E.U. procurement policy and the bureaucracy often encountered in taking forward submissions. This can be costly both in time and finance, which is a disincentive to engagement.

*Chris Blake* felt that more could be done through exploiting a greater range of E.U. support mechanisms; much more European finance and expertise could be available for Wales. In this respect, there would be even more potential for net export of energy generated in Wales, if such investment was made and controlled.

In terms of assessing both specific renewable energy schemes and renewable energy generating technologies, the **lean audit process** was advocated as a means enhancing added value and reducing waste, which could embrace such key issues as the level and effect of CO2 emissions within an overall assessment. It was perceived that in Wales, local renewable energy provision was being progressed in spite of government.

*Clare Keates* considered that all spatial levels, the process of considering and deciding upon renewable energy proposals in Wales needs to be streamlined. Clearer and better audit processes are required; Ofgem, for example, operates on a time consuming case-by-case process. A better audit process is required from EU to national and local authority levels.

The above issue led to doubts as to **what is the public sector energy policy in Wales**; and what the effect of the new Planning (Wales) Act and the Well-Being and Future Generations Act would have on speeding up processes and giving greater commitment to the renewable energy sector in Wales. A local councillor was not aware of any planning problems in respect of renewable energy proposals in Rhondda Cynon Taf CBC. He sought guidance as to what positive steps could be taken by local authorities in the era of no subsidy.

*Chris Blake's* view was that medium scale, more conventional; mainly private sector proposals are generally dealt with quite well by local authorities. But community scale schemes face huge delays / bureaucracy in situations where resources are fully stretched, with evidence of three years to take a hydro scheme through the planning process; and land valuations decisions taking up to 10 years. In this context both ownership & effective and open partnership between local authorities and community based operations is essential.

*Calvin Jones* considered that visual amenity should be taken out of the hands of planning decision-making process!

A number of delegates referred to the important role that **local communities** could play within the renewable energy sector. It was contended that energy generation / consumption should be locally based with local community ownership, thereby enabling greater economic, social and environmental community benefits to accrue. In this context ownership was considered to be key, requiring transfer of power from what might be multi-national / national levels. There were particular concerns expressed as to the inadequacy of the national grid in Wales; and the opportunity to establish local grid(s) to facilitate community renewable energy generation. However the issue was raised that this may need a better and clearer definition of “community”.

There was a plea for far more effective communication in relation to communities; not just from the public and private sectors, but bodies such as Community Energy Wales and academia / higher education / research bodies. Communities need to discuss and to learn and to come up with solutions appropriate to Welsh circumstances. The view was also expressed that a range a range of social and community issues need to be addressed through the energy sector; the Pen y Cymoedd Wind Energy Project, north of Treherbert was referred in this respect. Also the importance of being able to translate best practice from elsewhere, for example Denmark and the community ownership of wind farms. Reference was made to Germany, where progression with renewable energy has not always been a smooth and completely successful route. There is a need to engage with the debate and learn both from success and failure.

Conclusions in relation to the **spatial levels of policy / strategy and delivery** underlay a number of comments made and issues raised One delegate expressed the view that strategy and delivery needed greater integration; and that there was a need to measure performance at all spatial levels. In some respects this also related to an issue raised by former Welsh Government Minister Jane Davidson, when in office, that policy without clear control (i.e. the division of policy responsibility between Welsh and UK governments) creates confusion and needed to be resolved. *Alan Simpson* suggested that a duty to deliver carbon reduction should be demanded at the strategic level, rather than be just the subject of advice and persuasion. But power and responsibility has to be given on those who accepted the duty to deliver. This would have an effect the planning system and will require urgent change. In this context, he also felt that despite recent problems, there is a real need for the localisation of the co-operative movement. Co-operative action is based on a ‘return’ and is therefore appropriate to the (renewable) energy sector.

Further web site information:

References from Alan Simpson’s presentation:

Renewable energy solutions in Germany: *Feldheim* [www.neue-energien-forum-feldheim.de/index.php/en/self-sufficient-village](http://www.neue-energien-forum-feldheim.de/index.php/en/self-sufficient-village) : *Hamburg Community Power*. <http://power-to-the-people.net/2013/09/hamburg-citizens-vote-to-buy-back-energy-grid/> : *Freiburg Solar City* [www.regenwales.org/resource\\_96\\_Regeneration-Skills-Collective-Wales-Study-Tour-to-Freiburg](http://www.regenwales.org/resource_96_Regeneration-Skills-Collective-Wales-Study-Tour-to-Freiburg) : *Ackermannbogen Estate, Munich*: [www.landscapeinstitute.co.uk/casestudies/casestudy.php?id=14](http://www.landscapeinstitute.co.uk/casestudies/casestudy.php?id=14)  
U.K. references: *Bristol bio buses* [www.theguardian.com/cities/2015/apr/27/bristol-bus-powered-human-poo-smell](http://www.theguardian.com/cities/2015/apr/27/bristol-bus-powered-human-poo-smell) The Robin Hood Energy Company, Nottingham [www.theguardian.com/environment/2015/sep/07/robin-hood-energy-nottingham-council-launches-not-for-profit-energy-company](http://www.theguardian.com/environment/2015/sep/07/robin-hood-energy-nottingham-council-launches-not-for-profit-energy-company)

Reference from Chris Blake's presentation:

Piclo Scheme [www.goodenergy.co.uk/press/releases/2015/03/10/good-energy-open-utility-trial-uk-s-first-online-renewable-electricity-marketplace](http://www.goodenergy.co.uk/press/releases/2015/03/10/good-energy-open-utility-trial-uk-s-first-online-renewable-electricity-marketplace)

Referred to in the discussion:

Pen y Cymoedd Wind Energy Project: <http://penycymoedd.vattenfall.co.uk/>

A subsequent reflection on the Energiewende situation in Germany dated 01

December 2015: <http://energytransition.de/2015/12/coal-and-renewables-battle-for-power-in-germany/>