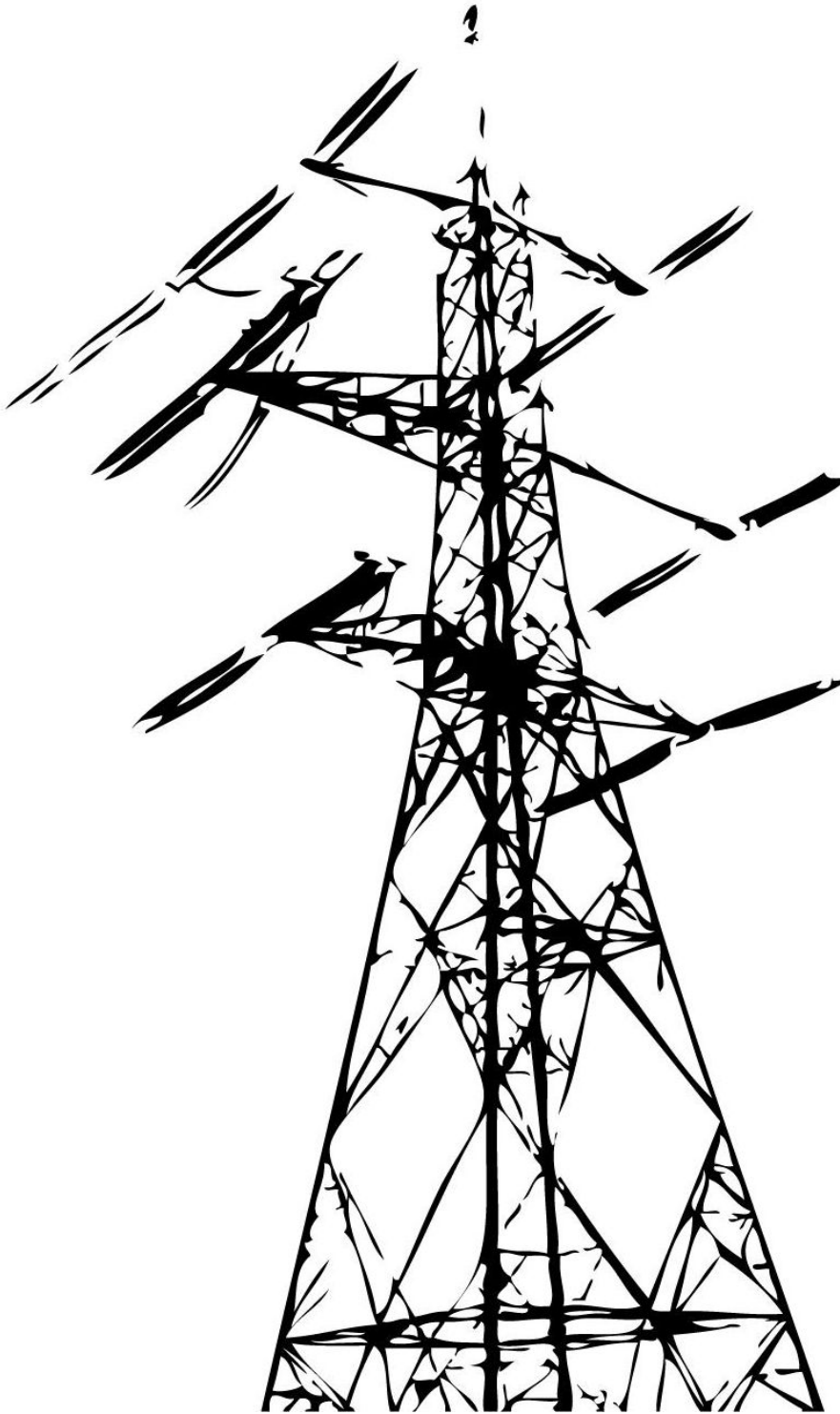


Grid-access and authorisation procedures in Wales



A publication for the RES-e project

Summary

This document contains the most up-to-date information about grid access and authorisation procedures for RES-e in Wales. A major part of the document is the analysis of the interviews held with at least 5 stakeholders in the field of renewable energy who have an involvement with the grid access procedure. General information about Renewable Obligation Certificates is covered in its own section (page 5) as well as by some of the interview questions (page 7).

This document builds on the work carried out for the OPET project in 2002.

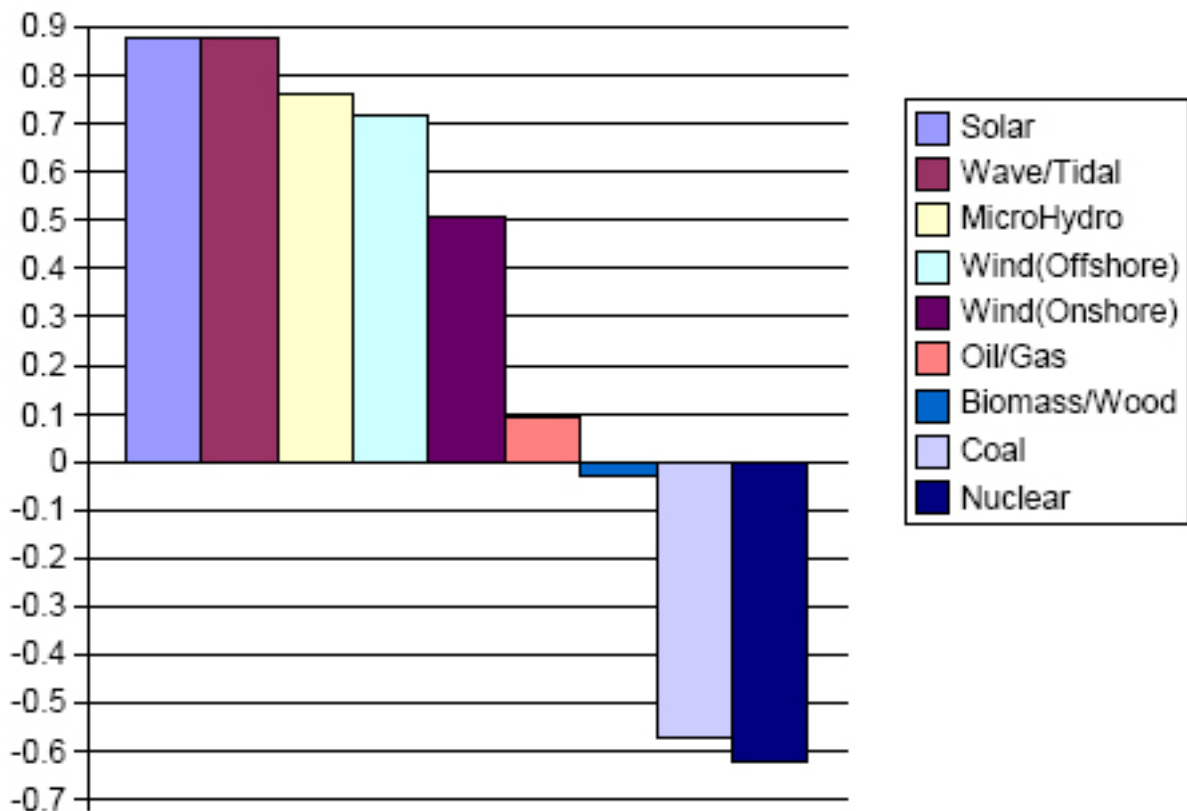
Public Opinion

The weight of public opinion falls strongly on the side of renewables, with solar, micro-hydro, ocean technologies and offshore wind scoring particularly well. Readers are referred to the survey carried out for MWEA in April 2005

(<http://www.res-e-cymru.org.uk/resources/documents/SurveyResults.pdf>).

A graphical summary follows:

Public Perceptions of Future Energy Use, Wales



A score of +1 indicates that 100% of the respondents who offered an opinion wanted to see more use of that energy in the future, a score of zero indicates no preference either way, and a score of -1 that 100% of respondents wanted to see less use of it in the future.

Planning

Determined by the policies of the Welsh Assembly Government (WAG), set out in “Planning Policy Wales” (PPW), and supplemented by Technical Advice Note 8 (TAN8).

This note was published in 1996, and a new version was subsequently published in July 2005. This is available from <http://www.wales.gov.uk/subiplanning/content/tans/tan08/newtan8/tan8-e.htm>

TAN8 focuses specifically on planning issues related to Renewable Energy. At the moment this is almost exclusively an issue for wind energy, and the fact that at least 800MW new onshore wind is required to meet the 10% renewables target by 2010 means that this is the focus of the document. Considerable detail includes strategic areas which have been mapped out as suitable for large-scale developments (determined by many factors, e.g. national park status, residential locality, windspeed, MoD constraints, electricity distribution issues etc). It is proposed that local authorities should constrain large wind farm developments to within these areas, and consider smaller ones outside these areas according to individual circumstances.

Other renewables considered are:

- Woodfuel – modern woodfuel heating systems and fuelstores to be encouraged
- Anaerobic digestion (Biogas) – intensive livestock units required to demonstrate responsible waste management (possibly including biogas production)
- Methane – landfill methane production and use to be ‘very much encouraged’ where feasible
- PV – except in certain unusual circumstances, PV proposals should be supported
- Solar thermal – except in certain unusual circumstances, proposals for solar water heating should be supported. Local design guides and planning guidance should encourage this technology
- Hydro – no specific planning considerations
- Tidal and Wave – no specific planning considerations
- Heat pumps – no specific planning considerations

An Environmental Impact Assessment (EIA) will usually be required for:

- Production of electricity where the plant area exceeds 0.5Ha (5000m²)
- Installations of more than 1Ha which carry gas, steam or hot water
- Hydro schemes over 0.5MW
- Wind farms where there are more than 2 turbines or the hub height of the turbine exceeds 15m

Conditions of grid-access and related problems

There are three distinct groups of generation with respect to grid-access procedures in the UK.

1. Systems with a current output of up to 16A (3.6kW for single phase supply, or 11.2kW for three phase). No requirement to inform the Distribution Network Operator (DNO) before the plant is commissioned, although notification is required upon commissioning.
2. Systems generating between over 16A but less than 50MW. Application procedure detailed below.
3. Plant with generating capacity of greater than 50MW. This size of generator is considered out of the remit of this document (this type of installation is handled directly by the Department for Trade and Industry under section 36 of the Electricity Act 1989).

For the second group of generators there is a formal application procedure which can be summarised as follows:

- Project Planning Phase
- Information Phase
- Design Phase
- Construction Phase
- Testing & Commission Phase

A brief outline of the necessary steps follows, but for detailed information the complete document the “Technical Guide to the Connection of Generation to the Distribution Network” (http://www.energynetworks.org/pdfs/FES_00318_v040211.pdf) should be accessed.

Project Planning: The developer formulates plans for the scheme and consults published information (e.g. DNO long term development statements LTDSs) to determine opportunities for grid connection.

Information: Developer submits information about the proposed plant to the DNO. The DNO then explains the configuration of the distribution network in the vicinity of the proposed site, and potential design issues and costs involved with grid connection at that point.

Design: Developer submits a formal Connection Application to the DNO. The DNO produces detailed connection designs and costings and identifies how much of the construction work could be done by a third party, and how much must be done by the DNO.

Construction: Developer enters into contracts with the DNO and, if desired, a third party contractor for connection construction. The physical works are carried out.

Testing&Connection: DNO and developer complete the necessary Connection and Use of System Agreements. Developer tests and commissions the generating plant (the DNO may wish to witness the tests). DNO carries out the necessary tests on the connection and energises it.

Streamlining of permission procedures and related problems

The European Commission requires member states to streamline procedures for grid connection of distributed generation. In 2000 the UK government started this process by the formation of the distributed Generation Co-ordinating Group (DGCG), jointly chaired by the DTI and the Office of Gas and Electricity Markets (OFGEM). The final report of the group was published in June 2001 and contained two main recommendations.

- OFGEM would review the structure of regulatory incentives on DNOs Information Phase
- A group should be established under Government leadership to take forward the implementation of the Embedded Generation Working Group (EGWG) recommendations.

This group has been working for three years, and in the summary of their 2004/5 report they state that “most of the identified barriers to the development of distributed generation and CHP have been removed. The few that remain are mostly in the process of being dismantled.”

This indicates that the work of the DGCG is over, and it is handing some of the longer-term projects over to the new Electricity Networks Co-ordinating Group (ENCG) which will focus on how electricity transmission and distribution networks need to continue developing in the context of the government’s environmental targets for CO2 reduction.

In all there are 24 named barriers which have been considered. As of December 31st 2004, 19 had been removed, 2 were in the process of removal, and 3 remained. The full details of these can be found in the annual report

(http://www.distributed-generation.gov.uk/documents/09_03_2005_3_dgcg_annual_report_2004.pdf), but some general ideas are summarised below:

- Additional incentives have been provided for DNOs to connect distributed generation
- Common-connection charging methodology introduced
- Gate closure of 3.5hrs reduced to 1hr (preferable for wind energy)
- Standard approach by DNOs to multiple generators wanting to connect to the same section of the distribution network
- Standard technical guidance for connection produced, in the form of publications
- Requirement for half-hourly metering, which was prohibitively expensive for micro-generation, has been removed
- Testing procedures for microgeneration accreditation for the Energy Efficiency Commitment (EEC) have been introduced

Guarantee of Origin

This phrase means a certificate issued by the Authority certifying that the electricity in respect of which the certificate is issued was electricity produced from renewable energy sources.

The relevant piece of legislation in the UK is called “The Electricity (Guarantees of Origin of Electricity Produced from Renewable Energy Sources) Regulations 2003”, and it came into force on 27th October 2003.

The main points of the legislation are summarised below:

- One guarantee of origin (ROC) to be issued for each kWh of production
- An electronic register of all ROCs to be maintained (<http://www.rocregister.ofgem.gov.uk>)
- ROCs can be transferred from holder to holder
- Each ROC to be given a unique identifying number

The full text of the legislation may be accessed at <http://www.opsi.gov.uk/si/si2003/20032562.htm>
Further information about ROCs is included in the analysis of interviews, on page 7.

Relative change in ease of connection compared with before transposition

This is largely a subjective determination, as it is difficult to collect data on the relative speed of connection of projects pre and post-2000. The major delays with grid-connection have been at the planning stage of wind farm production rather than with grid-access procedures. Additionally, grid capacity has so far been adequate for most projects, and it is within the coming few years that the major problems with capacity will be encountered and, hopefully, resolved.

There is, however, little doubt that the changes in regulation governing grid connection of distributed generation will be invaluable in years to come as the pace of small-scale development gathers pace. In general the planning procedure has also become more sympathetic to renewables in Wales.

Analysis of Interviews

Interviews were held during May and June 2005. A summary of the responses to the questions follows.

1. What is your role with regard to RES-e?

The five interviewees included one local authority principal policy officer, two renewable energy consultants and two experts in grid connection from the electrical industry.

2. What is the role of your company/organisation with regard to RES-e?

Two of the interviewees' organisations were involved with grid connection, two with RES-e installation and grid connection, and one with planning issues

3. Which company/organisation operates the grid/issues connection licenses in your region?

In Wales it is Manweb in the North, and Western Power Distribution in the South. The dividing line occurs just below Aberystwyth on the West coast and continues roughly Eastwards to the border with England.

4. Have planning permission procedures been streamlined over the last 2 years?

A varied response. The view of renewable energy consultants is that some procedures have been simplified, but that some procedures have become vastly more difficult, principally regarding the increasing number of (sometimes irrelevant) objections that get raised during the planning process of wind projects.

The experts in grid connection have the same concerns but for planning regarding grid lines. Objections on environmental grounds are welcomed by these operatives where they are genuine concerns; there is however a strong cynicism shown for many of the objections, whereby the suspicion is that objections are being raised simply to delay the process. The comment was made that local planning offices are sometimes less than eager to help in this process.

5. What price do you get for your RES-e; what premium is there for your RES-e?

The price for renewably-generated electricity is higher than that from fossil fuel sources because of the additional value of the ROCs (set to be a minimum of 3.23p/kWh for the year 2005-2006; http://www.ofgem.gov.uk/temp/ofgem/cache/cmsattach/10271_renewablesupdatefeb05.pdf), and the additional premium for the Climate Change Levy applied to business users of electricity. This can be compared with the price of approximately 8p/kWh which is paid by domestic consumers of electricity. Suppliers of electricity will get paid a varying amount, depending on the size of the generating plant and the length of contract.

6. What are the conditions necessary for granting grid access for PV, biomass, biogas, wind, small hydro?

These conditions are largely outlined above (page 3). In terms of grid access, there is only an issue of infrastructure for generating plant with a rated power of greater than 150-200kW.

7. What is the cost of connection?

Highly variable, depending on size of generating plant, distance from existing grid, local grid capacity etc.

8. Who bears the costs of grid connection?

The generator. Interviewees from within the field of grid maintenance and upgrade noted that this is being increasingly challenged at a national level by referring charges to OFGEM. This has the potential effect of slowing down grid future connection by disincentivising the DNOs.

9. Are the costs shared between the producer and the grid operator, and if so how?

All costs are borne by the producer.

10. What is(are) the major barrier(s) to connecting RES to the grid?

Grid capacity is only a problem for the very large installations, particularly wind developments over 200kW in size. For large developments, there was widespread agreement that there needs to be considerably more incentive for DNOs to increase grid capacity and speed of connection. There was some comment that DNOs are possibly dragging their heels on the issue of grid connection, perhaps with a view to forcing renewable energy generators to pressurise the government into offering some sort of financial incentive for DNOs to improve the rate of grid connection and upgrade.

The administrative procedures are generally not too onerous for small-scale generation. Large-scale developments have well-publicised problems, particularly wind. These issues are often so severe that many developments are purposely scaled up and submitted in the >50MW bracket, in order to sidestep the local planning process and go straight to the DTI. Issues of balancing and settlement codes, and metering arrangements, are generally not a large part of the barriers to grid connection.

11. Do grid access and administrative procedures help or hinder access to project finance?

This was largely viewed as irrelevant.

12. Who issues the Guarantee of Origin (Renewable Obligation; ROC) certificates?
OFGEM

13. How long do the certificates last?

Certificates last for two years from date of issue.

14. Who are they issued to?

They are issued to the producer, and may be traded.

15. What is their value/kWh?

This value varies according to the amount of ROCs present within the market and with the minimum price set by OFGEM. It is predicted that the value will reach zero by 2020.

16. Who maintains the register?

OFGEM maintains the register of certificates. It may be accessed at <http://www.rocregister.ofgem.gov.uk/main.asp>

17. What is the procedure for transfer?

OFGEM must be informed of any transaction. A record of that transaction is then stored on the public register.

18. What are presently the main problems for grid access in your region?

Lack of capacity for large projects is the only major stumbling block. Lack of infrastructure in terms of existing grid connections is potentially a problem for prospective large developments.

19. Which aspect in permission procedures causes most problems?

From the point of view of the grid-connection experts, the planning procedures for new grid lines is causing huge problems. This is strongly linked to the answer to question 4.

From the RES-e consultant perspective, it is also planning, in particular for large wind projects. Objectors to wind projects typically throw all possible objections at a proposed development, whether there is any scientific credibility or not to the objections. All this increases the time and expense of the planning process.

20. Who and what could/should be done to solve these problems?

Incentivise the DNOs and local authorities by setting mandatory targets for generation and procurement of renewable electricity at a local authority level, and by providing financial incentives for DNOs to connect to new renewable electricity generation projects.



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Research and interviews carried out for the Mid Wales Energy Agency by D Clubb
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