Concerns about the 2010 Energy Bill Feed-in Tariff for small hydro schemes

Summary

1. The new Feed in Tariff (FIT) due to begin on 1 April 2010 appears to have a flaw. It is intended to apply to small-scale hydropower as well as other forms of sustainable power generation, to encourage the necessary investment to install schemes. I submit that the requirement in the Energy Bill for accrediting hydro installers and products through the Microgeneration Certification Scheme (MCS) will prevent the intentions of the FIT being achieved, in particular for small-scale hydropower under 50kW capacity. Either some conditions of the FIT need to be altered during the Energy Bill's passage through Parliament, or derogation in favour of small hydro schemes needs to be applied.

2. The remaining sections outline some background and more detailed discussion of the issue summarised in the following:

    a. **Benefits**: Small-scale hydropower schemes (<100kW) offer a 100% renewable electrical power source of at least a further 600MW capacity in Scotland, more elsewhere, good employment opportunities and benefits to individuals, farmers and landowners. Many people wish to develop a scheme if the FIT is available to them.
    b. **Problems**: The process of MCS accreditation of products and suppliers and the Certification bodies who will implement it are not ready with standards for hydro schemes; if the FIT arrangements were to be introduced in the present form, the majority, if not all, of the above small-scale schemes would not be built in the foreseeable future nor would the benefits of the FIT be realised
    c. **Risks:** the risks inherent in small scale hydro technology are already covered by existing safeguards built into electricity industry standards, the Water Directive, Ofgem accreditation procedures, general planning and building regulations, and consumer protection legislation
    d. **Solutions:** possible courses of action are to remove or delay the requirement for MCS accreditation for hydro schemes under 50kW capacity, and/or to allow such schemes to be registered through Ofgem under the Renewables Obligation Order (ROO) scheme.

Benefits of hydropower for the environment and local economy

3. A recent report[1] for the Scottish Government identified twice the potential for hydropower that was estimated just over a year ago in a similar report[2]. This increase is mainly owing to the inclusion of around 6000 potential small-scale schemes of up to 100kW capacity and totalling 600MW. The new report evaluates the employment potential offered should the schemes be installed. This is an extract from the report's summary section:

Table 1: Summary of potential hydro installations achievable between now and 2020. Table includes resulting job creation in Scotland, under three growth scenarios. These three scenarios were modelled using an 8% discount rate on future cashflows – the baseline for this study. For results using other discount rates, see Annex A.

Scenario	A	B	C
Peak in development activity	2020	2025	2030
Installed capacity by year-end 2020	720 MW	300 MW	180 MW
Total capacity utilisation by year-end 2020	60%	25%	15%
Scottish full-time equivalent jobs created by year-end 2020 (Baseline scenario)	1400	710	360

[1] The Employment Potential of Scotland's Hydro Resource http://www.scotland.gov.uk/Publications/2010/01/19141527/9
[2] Scottish Hydropower Resource Study http://www.scotland.gov.uk/Resource/Doc/917/0064958.pdf

4. As a specific example of the possibilities, I am a retired householder and on a nearby burn I have installed a hydro-electric scheme which has been running successfully for over three years, producing to date 72 MWh of 100% "green" electricity. Thanks to the current Renewables Obligation Order (ROO) scheme I will recover my costs of the installation in under 5 years.

5. In the last two years I have been investigating and advocating the potential of small watercourses as a source of renewable energy. My experience lies mainly in the Dumfries and Galloway region which abounds in small watercourses capable of producing hydropower in an unobtrusive and environmentally unthreatening way. To date:

    a. 10 schemes in our 5-mile-long glen and nearby, totalling an output of over 400 MWh/annum, are complete or close to completion; watercourses in my glen alone are in my estimation capable of producing up to 1.5 GWh/annum
    b. over 50 people have already expressed an interest in installing schemes under the ROO; these and more are expecting to have access to the FIT
    c. I have assessed over 150 viable schemes in the wider region and have already identified a potential output of over 10 GWh/annum, calculated according to rainfall records, evapo-transpirational factors and geographical contour information. There is yet more potential in this region and further opportunities in hilly areas across the UK.

6. The benefits to end users to date consist of savings on electricity bills and a worthwhile return from supplying green electricity to the grid from export payments and (currently) Renewable Obligation Certificates (ROCs). Together with the fact that they can be installed at relatively low cost, small hydro schemes offer a reasonably quick recovery of outlay, thus encouraging people of modest means to take the initiative on developing them. Moreover, installation offers employment to engineers, builders, welders, diggers and electricians, mainly locally based. The FIT is intended to offer further incentives to build hydro schemes by replacing ROCs with a direct incentive payment via electricity suppliers of more than double the current guaranteed rate (19.9p/unit generated for hydros cf. 7.2p/unit).

7. Of the 10 schemes implemented or under way locally, the work has typically been commissioned by landowners/farmers with guidance from hydro experts. The installation work (pipe laying and welding, intake construction, etc.) has been carried out by small-scale operators with experience but no certification, often together with the landowners themselves. This is the most practical and cost effective way for many individuals to proceed and is likely to remain so for some years before more experience and skills become available.

Problems with the FIT and obstacles to achieving the benefits

8. Despite representations, the FIT arrangements as published on 1 February will require products and installers of schemes below 50kW capacity to be certified through the Microgeneration Certification Scheme (MCS). As yet, the MCS has no published standards for hydro schemes against which a supplier of products or services could be assessed and none of the Certification Bodies who will award accreditation to organisations can yet offer certification for this technology. The MCS is anticipating that only a handful of installers and suppliers will be accredited when the hydro standards become available (a draft was published on 17th February and is out for consultation).

9. As yet there are very few small hydro schemes in operation, very few suppliers with experience in installing them, and little evidence of their performance on which to base the standards. Most of the existing renewable energy suppliers do not offer services in relation to hydro schemes. Identified and planned hydro schemes are numerous, however (see above). Of all the certification bodies identified by MCS, only one gave a firm indication about its

intentions to certify hydro products and opined that this could not happen before the end of 2010. None are yet prepared to certify installers.

10. Because of the lack of certification, the majority of the schemes currently under construction and in the planning stage will now be eligible for neither FIT payments nor ROCs. This will constitute categorical discouragement to proceed. The introduction of the FIT as it stands therefore means that many schemes will be prevented from being implemented for some considerable time and possibly altogether.

11. Alternatives to uncertified operators will be the larger suppliers of products and services (who under the FIT scheme do not have to be certified to supply schemes above 50kW capacity). These are very few in number (5 currently listed in the UK as potential suppliers/installers), and thus limited in their capability to supply expertise. Their experience is with much larger schemes and if they do choose to become certified to supply and install small schemes, their services are likely to be prohibitively expensive.

12. I understand that transitional arrangements are under discussion for hydro installers and product suppliers but the MCS agent, Gemserv, has not yet released them. The terms will be very similar to those just released for the other renewable technologies and will still place unnecessary additional burdens on suppliers. I have been advised by Gemserv that the proposed arrangements still require suppliers to be moving towards full certification in order for the schemes to be deemed eligible for FIT payments.

Risks and Regulation

13. Whilst some form of assurance is clearly in the interest of the environment, the public and the consumer, there are plenty of safety regulations concerning the protection of the environment (SEPA registration is required for all new schemes), connection of schemes to the Grid (standards G 83/1 and G59/1), and general planning and building regulations together with a number of good practice guidelines.

Solutions: Ways to rectify the FIT scheme

14. To address the problems, I believe that small hydro schemes should be derogated from the MCS certification requirement and should continue to rely on the existing safeguards demanded by Ofgem registration for accreditation under the Renewables Obligation Order (ROO) and by the regional Environment Agencies under the Water Directives. Possible courses of action include:

    a. maintain the same form of accreditation through Ofgem for hydro schemes as for the current ROC arrangements
    b. delay the requirement for MCS accreditation for hydro schemes under 50kW capacity until:
        i. sufficient small schemes have been installed and monitored as to their performance
        ii. the numbers of suppliers offering such schemes have increased, and
        iii. suitable standards have been developed
    c. allow all small hydro schemes to be registered in the current ROO scheme until such time as it becomes appropriate to apply any new supply and installation criteria (the FIT arrangements allow only schemes over 50kW capacity to opt to remain in the ROO scheme). The ROO scheme is however less generous for new hydro installations than the FIT so this option would not fully meet the aims of the FIT.

Action on this matter is urgent in view of the report stage of the bill scheduled for 24 February.